Chapter 10. Sustainability and Resilience

Hand in hand with the preservation of its natural resources as discussed in "Chapter 8. Natural Resources and Open Space,", the Town must work to ensure that it is prepared for the changing global environmental context, particularly the increased frequency and severity of natural disasters and severe weather events as exemplified by the 2018 macroburst experienced in the region. This chapter summarizes Town initiatives already in place to bolster sustainability and resiliency, and recommends actions for the promotion of sustainable living, resident safety, and high quality of life.

Energy Conservation

The Brookfield Energy Advisory Board is responsible for advising the Town on matters related to sustainable energy practices. The *Brookfield Draft Energy Plan* (2024) outlines the Board's recommended actions with the goal of transitioning to renewable energy by 2050. The electrical grid in Brookfield is managed by Eversource Energy, Connecticut's largest electric utility. As of 2024, 63% of energy used by customers on the Eversource grid came from non-renewable sources.

Renewable Energy Sources

Brookfield is home to two hydroelectric generating resources on its borders, Candlewood Lake and Lake Lillinonah, discussed in "Chapter 8. Natural Resources and Open Space." While these resources contribute to the broader sustainability of the regional energy grid, significant progress is still necessary at the local level in Brookfield. The continued transition to renewable energy sources is a goal in WestCOG's POCD that the Town should follow. This goal will reduce the Town's reliance on carbon-based energy sources, improving public health and energy resiliency while also reducing the Town's contribution to the causes of climate change.

Solar Energy

Solar energy adoption in Brookfield has improved since the previous POCD, with the Town participating in the Solarize CT program and hosting workshops for residents in 2018. Rooftop solar arrays generated approximately 0.7 GWH in 2015, increasing to approximately 2.5 GWH in 2020. The Energy Advisory Board estimates that with the continued expansion of solar capacity, approximately 72 GWH could be produced annually, and the Town should consider continuing homeowner education to achieve this goal. WestCOG's *Decarbonizing Land Development Practices: Strategies for Planning and Zoning Commissions* (2022) report provides best practices for the implementation of residential and non-residential solar solutions in the region.

Wind Energy

Brookfield's zoning regulations allow for the implementation of small wind turbine systems with the primary purpose of supplying energy to structures or facilities on the same lot. Due to differing efficiencies between solar and wind energy solutions, wind installations are primarily

sited on commercial or industrial properties. The Town should work with developers and business owners to encourage implementation of wind energy solutions where appropriate.

Sustainable Design/Green Building Practices

Improving the efficiency of existing buildings and promoting the adoption of sustainable building practices for new construction will enable the Town to reduce per-capita energy consumption, reducing energy costs for the Town and home and business owners. The Brookfield Energy Advisory Board has set a targeted reduction in energy consumption of 3% annually through 2050. Modernization of building heating and cooling systems is a particular focus of the *Brookfield Draft Energy Plan* due to the ubiquity of oil and natural gas heating systems in the town (approximately 84% of homes). Several incentive programs, such as the Energize Connecticut Residential Air Source Heat Pump Incentive, exist to encourage homeowners to transition to efficient, electric heat pump systems for heating and cooling.

Commercial and municipal buildings are a notable target for retrofitting in the Town given more significant energy demands than residential buildings. Since 2013, the Town has participated in the Connecticut Green Bank C-PACE program, allowing commercial property owners to access financing options for the retrofitting of existing buildings or construction of environmentally friendly buildings.

The Town has led by example in the construction and renovation of municipal buildings according to sustainability best practices in recent years, most notably using Insulated Concrete Forms in the construction of Candlewood Lake School and the achievement of Leadership in Energy and Environmental Design (LEED) Silver certification in the renovation of the Brookfield Senior Center. While the LEED certification process includes additional costs to a developer or building owner, the State of Connecticut has developed High Performance Building Standards (HPBS) which mirror LEED Silver certification requirements and apply to certain state facilities. To ensure the implementation of sustainable building practices at the municipal level while avoiding the additional costs associated with LEED, the Town should consider adopting building standards which reflect HPBS for future municipal projects. A discussion of Brookfield's municipal facilities is found in "Chapter 7. Community and Cultural Facilities."

Electric Vehicle Infrastructure

Electric Vehicle (EV) ownership in Brookfield has increased significantly since the previous POCD, with EV registrations increasing from 15 in 2014 to 310 in 2024, according to the CT DEEP EV Registration Factsheet. The Town can expect EV ownership to continue to increase as the state continues to provide rebates between $1,500 and $5,000 through the Connecticut Hydrogen and Electric Automobile Purchase Rebate program. The EV charging infrastructure in Brookfield remains limited, with just two stations and ten chargers in Four Corners.

US-7 has been designated as an Electric Alternative Fuel Corridor by CTDOT, with EV signage implemented between Norwalk and New Milford during the 2020 cycle. Grant funding has been available, most recently from July through October 2024, for National Electric Vehicle Infrastructure (NEVI) projects within one drivable mile from any exit or intersection along an Electric Alternative Fuel Corridor located in Connecticut. While NEVI compliant stations are

planned to be completed in bordering New Milford and Danbury, the Town should work with local developers to take advantage of future grant solicitations associated with the Connecticut NEVI Plan.

WestCOG's *Comprehensive Economic Development Strategy* (2023) identifies municipal fleets as a target for electrification as a part of the objective to reduce use of fossil fuels. To implement this recommendation, the Town should explore the possibility of introducing municipal EV charging infrastructure at select facilities, allowing municipal departments to consider EVs when routine fleet modernization next occurs.

Waste Management

Appropriate waste management is an important aspect of sustainability and resiliency, ensuring the health and safety of Brookfield's residents and ensuring protection of the Town's important natural resources. Brookfield is a member of the Housatonic Resource Recovery Authority (HRRA), a regional solid waste and recycling authority with jurisdiction in Brookfield and 13 neighboring municipalities. HRRA is responsible for managing registered haulers in the region, performing public outreach and education, facilitating household hazardous waste events, and piloting organic waste programs in the region.

Municipal Solid Waste & Recycling

Municipal solid waste and recycling collection in HRRA municipalities is provided by private subscription with registered and permitted haulers. In Brookfield, there are six registered municipal solid waste haulers: RA Landscaping, Pendergast Roll-off & Recycling Service, Oak Ridge Hauling, Ness Industries, LoStocco Refuse Service, and All American Waste. Residents of Brookfield may also drop off recycling for free at the Oak Ridge "Mom & Pop" Drop-off & Recycling Center in Danbury, CT. Municipal solid waste is hauled to HRRA transfer stations before being disposed of at the Bridgeport Resources Recovery Facility, a waste-to-energy power plant owned and operated by WIN Waste Innovations. While this facility does produce carbon emissions, it significantly reduces the percentage of municipal solid waste from Brookfield which reaches landfills annually. In conjunction with this important reduction of landfill use, the Town can improve its waste management performance by encouraging a reduction in the amount of municipal solid waste produced by businesses, households, and municipal uses.

Hazardous Waste

The HRRA organizes semi-monthly household hazardous waste drop-off events available to Brookfield residents and hosted throughout the region. The household hazardous waste event is held at Brookfield High School. Materials eligible for dropoff include paints and stains, cleaning products, pesticides, fuels, glues, and certain automobile fluids. Fluorescent bulbs, motor oil, antifreeze, auto batteries, tires, and propane tanks should be dropped of at regional recycling centers. Ammunition, fireworks, and explosives should be disposed of through the Brookfield Police Department.

Organic Waste

The Town may reduce the volume of waste produced by households by encouraging the composting of organic yard waste and food scraps. This practice has the benefit of reducing waste handling and disposal costs for Brookfield residents, and returning nutrients to the soil, therefore reducing the need for chemical fertilizers. At this time, residential yard refuse in Brookfield can be disposed of at the Yard Refuse Disposal center on Pocono Road between Town Hall and the Fire House. Town residents can acquire a free permit to drop off yard waste. The Town should explore options for encouraging organic composting of food scraps.

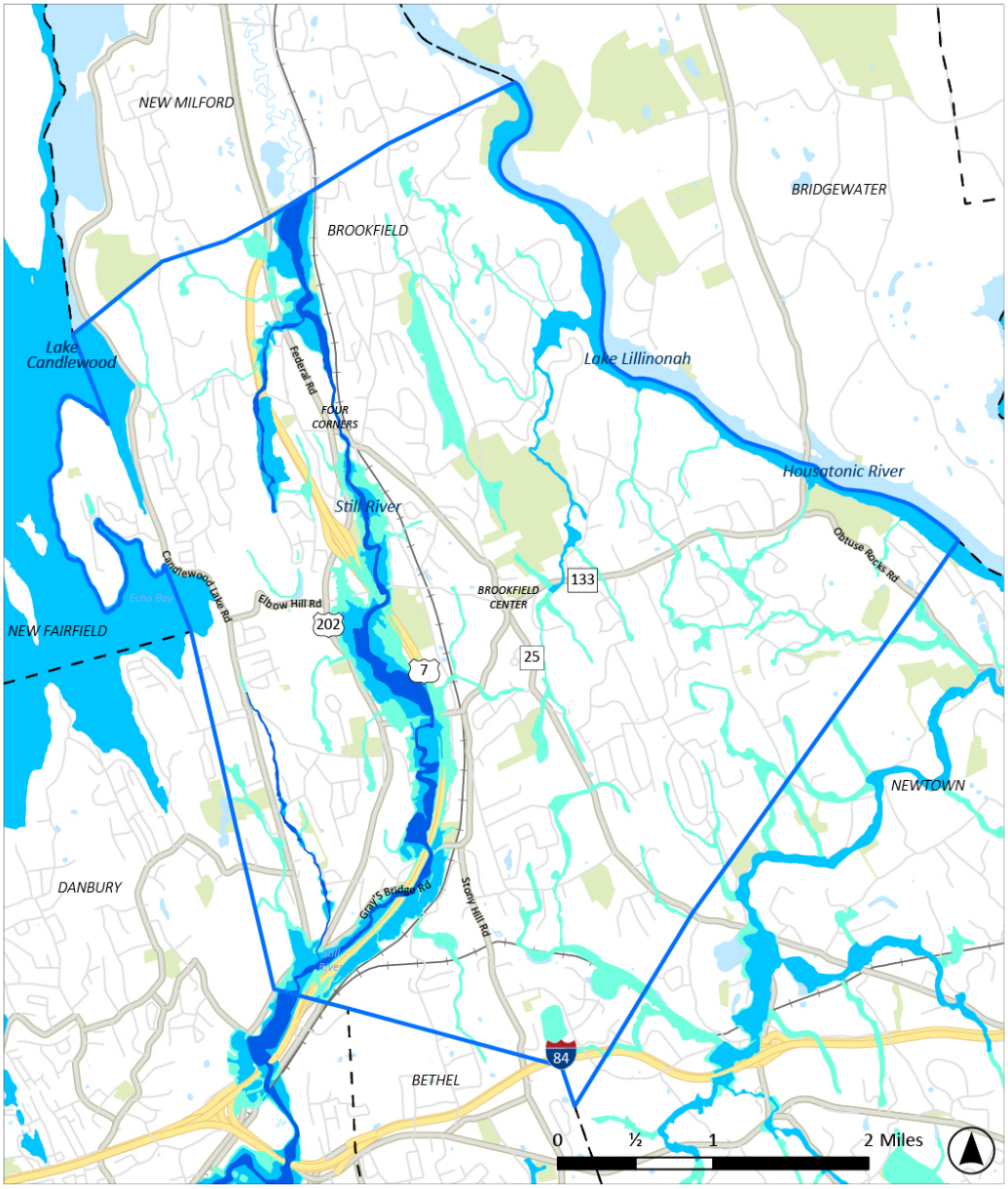
Hazard Mitigation

As the frequency and severity of natural disasters increases due to the impacts of climate change, the need to mitigate potential hazards has increased in kind. For example, on May 15, 2018, the Town experienced significant damage because of severe storms, winds, and tornadoes, with debris removal operations totaling more than 1.2 million dollars. In 2021 WestCOG adopted the *Multi-Jurisdiction Hazard Mitigation Plan Update 2021 – 2026*, in cooperation with Brookfield and other WestCOG municipalities. The *Hazard Mitigation Plan* identifies several potential hazards related and unrelated to climate change which may face residents in the coming years, including flooding, hurricanes and tropical storms, summer storms and tornadoes, winter storms, earthquakes, dam failures, and wildfires. Several goals related to Emergency Preparedness in Brookfield were laid out in the plan. The Town should continue to follow the recommendations of the *Multi-Jurisdiction Hazard Mitigation Plan* and cooperate with WestCOG on its next update, to bolster resiliency and ensure resident safety in the face of future natural disasters.

Flood Preparedness

Floodplain designation and associated municipal and National Flood Insurance Program policies are managed at the federal level through the publication of National Flood Hazard Layer (NFHL) maps by the Federal Emergency Management Agency (FEMA). Floodplains were most recently mapped for the National Flood Insurance Program by FEMA in 2010, prior to the 2015 POCD. The concurrent map amendment updated the Brookfield Zoning Map to reflect the Federal Insurance Rate Map changes. The general area of the 100- and 500-year floodplains are shown in Figure 10-1. The 100-year floodplain is an area with a 1% annual chance of flooding. The 500-year floodplain has a 0.2% chance of flooding annually. The highest risk areas in Brookfield are along the Still River, which has land within the floodway and the 100-year floodplain, which require flood insurance. Areas in the 500-year floodplain are generally found around brookfields many streams and wetlands. Because the water levels of Candlewood Lake and Lake Lillenonah are artificially controlled by FirstLight, they are generally not at risk of flooding.

Figure 10-1. Flood Risk Hazard Map

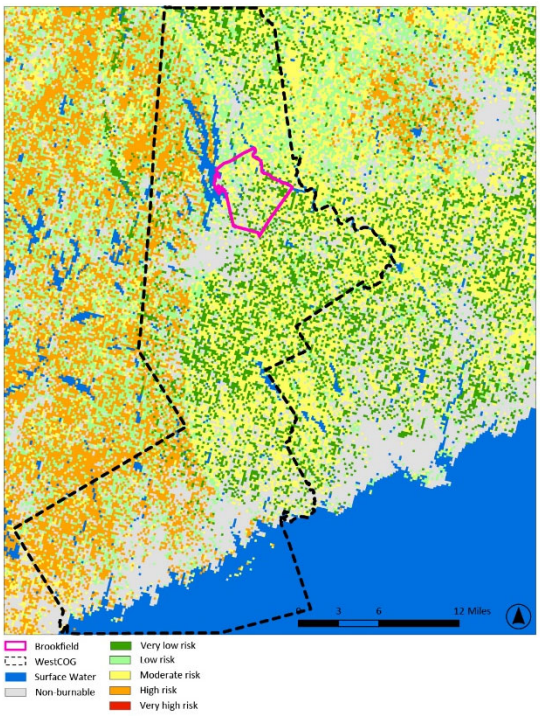


Sources: FEMA, CT DEEP, BFJ Planning

Wildfire Risk

While the U.S. Forest Service has not identified any area of Brookfield as being at high risk or very high risk of forest fire, most of the town is within the moderate risk category (see Figure 10-2). There are several factors related to climate change that can increase the risk of forest fires. For example, the 2018 macroburst left felled trees throughout Brookfield's forests. In periods of drought, as experienced in the summer of 2024, these fallen trees become potentially dangerous for the spread of forest fires. Periods of drought, which have increased in the past decades, also create risks to residential neighborhoods. The fire department has equipped itself with a brush fire truck to fight wildfires and runs public service campaigns to help property owners reduce the risk of wildfire damage. As discussed in "Chapter 7. Community and Cultural Facilities", the Fire Companies have purchased a brush truck and equipment to prepare for wildfires and forest fires.

Figure 10-2. Wildfire Hazard Potential



Sources: U.S. Forest Service, BFJ Planning

Issues and Opportunities

Renewable Energy Sources

Adoption of renewable energy resources in Brookfield remains limited, with the high rate of fossil-fuel based heating systems being a particular issue in the Town. While transitioning the Eversource power grid to renewable resources remains a regional issue with little input from individual municipalities, Brookfield can take steps to reduce the Town's overall energy consumption and to encourage the implementation of local sources of renewable energy such as residential and commercial solar and wind solutions. Increasing local sources of renewable energy will enable Brookfield to be less reliant on the regional power grid and become more resilient in the face of natural disasters and regional power outages.

Sustainable Design/Green Building Practices

Several financing opportunities are available at the state level for homeowners and businesses looking to retrofit their property, as well as developers looking to implement sustainable building practices in the construction of new buildings. As discussed in "Chapter 7. Community and

Cultural Facilities," the need for renovation or construction of several new municipal facilities presents an opportunity to improve the sustainability of municipal properties.

Electric Vehicle Infrastructure

The presence of highway US-7 in the town is a significant opportunity for the implementation of additional EV infrastructure as it has been designated by the state as an Electric Alternative Fuel Corridor. By providing enhanced EV infrastructure, the town can further encourage residents to transition from fossil-fuel reliant transportation to EVs, improving air quality and public health. The Town also has the opportunity to lead by example in the EV space by electrifying municipal fleets during routine periods of fleet modernization. To achieve this goal, municipal EV charging infrastructure should be explored. Upcoming retrofitting or construction of municipal facilities presents an opportunity for the introduction of municipal EV charging.

Waste Management

As a part of the WestCOG Regional Waste Management Study, the age and potential closure of the existing Bridgeport Resources Recovery Facility was identified as a potential future issue for waste management practices in the region. As a voting member of the HRRA, Brookfield should advocate for the development of a regional waste management study, similar to that developed by WestCOG for Darien, Greenwich, New Canaan, Norwalk, Stamford, Wilton, Weston, and Westport in 2021, to prepare for anticipated changes in the regional waste management landscape.

Sustainable CT Certification

Sustainable CT is an organization which certifies municipalities across Connecticut in recognition of their commitment and progress regarding sustainable practices. By defining specific actions that municipalities can take to achieve certification, Sustainable CT provides a holistic roadmap for improving sustainability in each municipality. In 2019, Brookfield was certified into the Sustainable CT program, earning 225 points for supporting nine of the 13 categories. Sustainable CT Bronze certification requires completion of at least one action in 12 different categories. 200 points required to be considered for Bronze Certification. The Sustainable CT Action Categories are listed in the blue box on the following page. Recertification is required every three years, and actions completed in a previous certification cycle may need to be updated as part of the recertification package.

Sustainable CT Action Categories:

1. **Inclusive and Equitable Community Impacts:** Deeply embedding equity considerations into municipal operations, building inclusiveness, community cohesion, and shared decision-making.
2. **Thriving Local Economies:** Supporting local businesses, increasing local jobs and revenues, and fostering energy-efficient and renewable energy-powered commercial and industrial buildings.
3. **Well-Stewarded Land and Natural Resources:** Establishing policies and practices that recognize our finite resources and that strive to achieve a balance of many users while preserving and increasing ecosystem health and resilience.
4. **Vibrant and Creative Cultural Ecosystems:** Distinctive, engaged and livable communities that shape people-centered places, provide robust artistic and cultural opportunities, and consider environmental impacts.
5. **Dynamic and Resilient Planning:** Balancing human development and resource use with a wide range of factors, including livability, economic opportunity, biodiversity and natural systems.
6. **Clean and Diverse Transportation Systems and Choices:** Ensure a high quality of life and opportunity for people of any income, race, ethnicity, religion, gender, ability, or age. This requires recognizing the ongoing impacts of past state, local, and private actions and addressing resulting disparities in outcomes, access, and opportunities; minimizing environmental, public health, and other burdens; and ensuring historically excluded populations benefit from state actions.
7. **Renewable and Efficient Energy Infrastructure and Operations:** Including accessible municipal buildings with efficient operations, maintenance, and energy systems.
8. **Inclusive Engagement, Communication and Education:** Encompassing transparency, inclusivity, effective communication, appropriate events and training - civic engagement and regional collaboration.
9. **Strategic Materials Management:** Encouraging thoughtful waste management and reduction that goes beyond plastics recycling to include additional materials and food waste.
10. **Optimal Health and Wellness Opportunities:** Prioritizing the physical and mental health of all community members through air quality improvement, shared gardens and growing spaces, and stable food systems.
11. **Healthy, Efficient and Diverse Housing:** Diverse in both type and affordability, and located in thriving, livable, connected neighborhoods.
12. **Effective, Compassionate Homelessness Prevention:** Helping to build homelessness awareness and supports through compassionate outreach and thoughtful service coordination.
13. **Innovative Strategies and Practices:** Innovate and implement meaningful sustainability actions not yet listed on the Sustainable CT action list. Become a model for others!

Goals and Recommendations

10.1. Encourage continued adoption of renewable energy sources for residential and commercial uses in Brookfield.

10.1.1. Provide educational programming to encourage the adoption of residential solar installation.

In response to the success of the Solarize CT program undertaken in 2018, the Town should continue to encourage implementation of residential solar installation through educational programming. The Town should work with the Energy Advisory Committee and their *Brookfield Draft Energy Plan* could be used as a guide for benchmarks.

10.1.2. Work with businesses and developers to identify opportunities for the implementation of site-based renewable energy apparatus such as wind and solar for retrofit or new construction.

As Brookfield continues to grow and business development opportunities arise, the Town should ensure that sustainable building practices are implemented and that the benefits of site-based renewable energy production is considered. While the Brookfield Zoning Code does allow for the implementation of these apparatus with the proper approvals, the Town should be proactive in working with developers and business owners to encourage retrofits and new construction.

10.2. Encourage green retrofits of existing buildings and implementation of sustainable building practices for new construction in Brookfield.

10.2.1. Encourage the transition from oil and natural gas to electric heat pumps for residential and commercial uses in Brookfield.

The Town should take steps to encourage increased implementation of electric heat pump systems by educating residents and businesses on existing financing and rebate programs at the state and federal level.

Several incentive programs, such as the Energize Connecticut Residential Air Source Heat Pump Incentive, exist to encourage homeowners to transition to efficient, electric heat pump systems for heating and cooling. The Town should encourage residents to pursue these energy upgrades to achieve the goals of the Brookfield Draft Energy Plan. To facilitate the retrofitting of residential buildings in Brookfield, the Town may consider the implementation of a "green homes" program under which the municipality could offer homeowners financial assistance for home improvements to be repaid with money saved on utility bills.

10.2.2. Incentivize property owners to implement green building and sustainable site development.

The Town should assist developers and businesses in identifying and applying for sustainable building-practice based financing such as C-PACE wherever possible.

10.2.3. *Update building standards for municipal facilities to match state-level High Performance Building Standards.*

By adopting updated building standards for municipal facilities, the Town can ensure that its municipal facilities meet statewide sustainability goals while avoiding any added costs associated with LEED certification.

10.2.4. *Establish a framework for annual sustainability audits in public facilities, including audits of energy use in buildings, fuel consumption by the municipal fleet, waste produced or diverted, and purchasing of green products.*

10.3. *Continue to work with public and private partners to expand EV infrastructure.*

10.3.1. *Monitor the availability of NEVI grants and work with local stakeholders to take advantage of EV infrastructure funding when available.*

Although the most recent round of solicitation for funding through the NEVI grant program ended in late 2024, the Town should take advantage of future rounds of funding due to its strategic location along US-7, one of Connecticut's Electric Alternative Fuel Corridors. By working with developers to site EV charging stations in Brookfield, the Town can improve accessibility for residents with EVs, and encourage residents to confidently transition to EV ownership, reducing the Town's carbon footprint and improving air quality and public health.

10.3.2. *Consider the implementation of municipal EV charging infrastructure to allow for the electrification of Brookfield's municipal fleet.*

In accordance with the recommendations of the WestCOG *Comprehensive Economic Development Strategy* (2023), the Town should explore the possibility of municipal fleet electrification, including the associated municipal EV infrastructure which may be required.

10.4. *Improve municipal and regional waste management practices.*

10.4.1. *Encourage the HRRA to undertake a regional waste management study to better understand the challenges and opportunities in Brookfield.*

While Brookfield falls under WestCOG jurisdiction for many aspects of regional planning, Town waste management policy is set by the HRRA, a regional authority of which the Town is a voting member. In the face of potential changes to broader regional waste management practices identified as a part of the WestCOG Regional Waste Management Study, the Town should encourage HRRA to undertake a similar planning process to prepare for changing regional circumstances.

10.4.2. *Explore options for encouraging residential food scraps composting.*

While organic composting of yard waste is encouraged through the organization of a municipal yard compost drop-off, the Town does not currently support programs to encourage organic composting of residential food scraps. The Town should work with the HRRA to promote food scrap composting in Brookfield, with potential actions including

the development of educational materials about the benefits of backyard composting or the establishment of a food scraps drop-off program.

10.5. Bolster emergency preparedness and hazard mitigation.

10.5.1. Continue to follow the Hazard Mitigation Plan and to work with WestCOG on updates.

The Hazard Mitigation Plan should include an evacuation and shelter plan to deal with emergencies from natural hazards.

10.5.2. Request updated NFHL maps from FEMA

As recommended in the most recent WestCOG POCD, the Town should request that FEMA updates local NFHL maps to reflect the most recent meteorological data, as the most recent available maps were created in 2010.

10.5.3. Discourage development or redevelopment in natural hazard areas, such as the 100-year floodplain and the floodway (see Figure 10-1), unless strong mitigation measures and plans are in place. The future land use map (see Figure 11-1) shows existing natural hazard areas.

It is noted that the Still River runs along two major transportation corridors in Brookfield: Route 7 and Route 202. The Still River's floodplain encroaches upon some properties along these routes. Route 202, Federal Road, is the vital commercial corridor in Brookfield, generating Brookfield's economic base. Brookfield has an existing Floodplain District overlay that adds additional regulations to development within FEMA flood zones A (100-year floodplain) and AE (floodway).

10.5.4. Provide information on the Town website about CT DEEP training and information around small business chemical management for hazard resilience.

10.6. Work towards being a more environmentally, economically, and equitably sustainable and resilient community.

10.6.1. Collaborate with groups and boards to Complete actions in all Sustainable CT Categories to achieve Sustainable CT Bronze Certification.

Sustainable CT provides a set of categories with affiliated actions municipalities can take to make their community more sustainable, providing a roadmap for Brookfield. Actions correlate with other goals and recommendations in this plan or may be things the Town is already doing. For example, 15 points can be achieved by working with a land trust to acquire new open space, and composting of organic waste can earn up to 30 points. Actions may be periodically updated, and the Town should regularly check Sustainable CT's website.

10.6.2. Implement dynamic and resilient planning actions from Sustainable CT Category 5.

An important action of the Sustainable CT program is "5.1 Integrate Sustainability into Plan of Conservation and Development." The Town can earn up to 60 points towards certification by committing to three sub-actions.

a. Include at least four Hazard Mitigation Plan goals into your most recent Plan of Conservation and Development (POCD).

b. Incorporate at least three sustainability concepts as policy.

c. Engage in intentional and ongoing public outreach and participation on planning issues.

This POCD has aimed to integrate sustainability recommendations across all topical chapters. They satisfy the three sub-categories above demonstrating the integration of sustainability into this POCD. In addition, many of the recommendations of this POCD, if implemented by Brookfield, will qualify for additional points towards Sustainable CT certification.

10.6.3. Once Bronze Certification is achieved, Brookfield should maintain certification through recertification and continue to Pursue Silver and Gold Sustainable CT Certifications.

The Town should continue to pursue higher certifications to make Brookfield a more sustainable and resilient community and to align with the goals of the state.

10.6.4. Commit to sustainability and resilience planning by allocating staff time.

Some examples of efforts that will require the time and dedication of Town staff include Sustainable CT certification applications, annual planning sessions with emergency preparedness, engineering, water pollution control and private utilities, benchmarking of municipal practices, sustainability auditing of facilities, grant applications, and other planning and implementation measures.