



31 Suffield

Community Overview

Suffield is a rural encompassing about 42.2 square miles with a population of about 15,735. Suffield's terrain rises from an elevation of 22 feet above sea level at the Connecticut River to its highest point of 691 feet above sea level on West Suffield Mountain. Suffield's land area contributes to three watersheds: the Farmington River Watershed to the west, the Stony Brook Watershed centrally and the mainstem of the Connecticut River Watershed to the east. The Connecticut River runs the length of the eastern boundary of Town. Other major watercourses include Clay, Deep, Fourmile, Mountain Brook, Muddy, Philo, Rawlins and Stony Brooks. State routes 75, 168, 187 and 190 provide major transportation routes through town.

Approximately 40% of the Town is served by public water; Connecticut Water serves the east side of Town, Aquarian serves the west, and the rest of the Town is on wells. The east side of Town has a sewer system, and the rest of Town uses septic systems. Historically, sewer pumping stations would be installed in developments larger than 25-30 homes, and individual grinder pumps would not generally be permitted. This has changed in recent years, and now pressurized sewer systems with grinder units are installed in every new home that cannot reach the sewer system by gravity flow. This change is expected to open the way for new residential development.

Agriculture, manufacture of ice cream, industrial gases, and small tools, and warehousing are the principal industries. The largest employers are MacDougall-Walker Prison, C&S Wholesale Grocers, HP Hood, Windsor Marketing Group, Praxair, and Suffield Village. Part of Bradley International Airport and the entire North Central Connecticut Correctional facility are located in Suffield. Town officials report that Suffield's population is increasing, with many families moving into the area and increasing the number of students in Suffield schools.

Critical Facilities

Critical Facilities throughout the Capitol Region are listed in Appendix B. In Suffield these include Town Hall, four fire stations, a highway department garage and fuel center, an ambulance building that also serves as the Town's EOC, the 230 Mountain Road building that the Town rents for some administrative space, the Police Department, the Senior Center, the Wastewater Treatment Plant and 20 pumping stations, Suffield High School and Middle School, two Elementary Schools, the private Suffield Academy, three senior housing facilities, the MacDougall-Walker Correctional Facility, and a number of historic sites.

Table 31-1: Critical Facilities, Suffield

Facility	Shelter	Generator
Town Hall		Yes
4 Fire Stations		Yes
Highway Garage & Fuel Center		Yes
Ambulance Building (EOC)		Yes
230 Mountain Road (1/3 of building rented by Town for offices: DPW, Engineering, Finance, Selectman, IT, Zoning, HR)		
Police Department		Yes
Senior Center	Warming Center	Yes
WWTP		Yes
20 Pumping Stations		Yes
Suffield High School	Primary	Yes
Suffield Middle School	Secondary	Yes
2 Elementary Schools		Yes
Suffield Academy (private, residential)		Yes
Suffield By the River (Assisted Living)		Yes
Suffield House (Nursing Home)		Yes
Bridge Street Elderly Housing (3 buildings)		
McDougall-Walker Correctional Facility		Unknown

The Town Hall is currently in the process of being renovated, and multiple departments are temporarily working out of rented space in the 230 Mountain Road building. While those departments are located in that building, it is considered a critical facility.

The MacDougall-Walker Correctional Facility is a state facility housing around 2,800 prisoners. The Town responds to fires at the site on a delay, once the facility has been secured; Town EMS also respond, reporting about 100 incidents a year.

Suffield contains many historic sites important to its community character, including the King House museum, the Hatheway House, First Baptist Church, Hilltop Farm, and Babb’s Roller Skating Rink.

Capabilities

Hazard mitigation is incorporated, to some degree, into Suffield’s Plan of Conservation and Development (POCD). POCD actions specifically address natural hazards.

There has not been any construction or demolition in floodplains or other vulnerable areas of Suffield since 2008. In 2008, the Town added Section V.K. Flood Damage Prevention to the Zoning Regulations.

The Town has designated a vacant area on Firestone Drive as an emergency debris storage area, and dumps snow there as needed.

Power lines are installed underground in new subdivisions. Routine tree maintenance is performed by Town personnel, with contractors brought in as necessary. Dead trees along the



bank of Stony Brook upstream of the Remington Street bridge are removed by the Town to prevent the structure from being clogged by fallen tree debris.

Suffield staff are proud of their road maintenance capabilities; with a team of eight employees they are able to clear 80 miles of road during snow events, and always plow ahead of first responders to clear the way to emergencies.

Suffield maintains memorandums of agreement at multiple levels (state, regional, municipal) that include all surrounding towns except for Agawam.

New Capabilities

The Town has contracted Asplundh Tree Company to perform significant tree trimming in recent years, decreasing the risk to the power grid and roads.

Suffield plans to replace a culvert at Bridge Street and Thrall Street with a larger culvert to remedy a drainage-related flood issue. The Town has also received a grant (with 20% municipal match) to replace the Remington Street Bridge to address clogging of the existing 4-box-culvert structure; it is expected this will be completed by 2020.

A flooding issue on Phelps Road has been corrected since the adoption of the 2014-2019 Capitol Region Natural Hazards Mitigation Plan Update (“2014 HMP”). The Town has also added curbs and sub-drains to 50 miles of roadway.

Challenges

Challenges Overview

Suffield has approximately 5,469 housing units, 27 of which are located in flood hazard zones. There are another 31 non-residential structures located in flood hazard zones. There are a few areas throughout Town prone to street flooding during heavy storm events. Flood issues are tracked in all developed areas, and problematic locations are addressed when possible. Ensuring proper maintenance of drainage structures is a challenge due to decreased staffing and budget levels. Maintaining accessibility throughout Town during storms can be a challenge given the streams, steep slopes, and narrow roads in some areas.

Areas at particular risk of flooding include Prospect Street and Hail Street. Quarry Road at the border of Suffield and Granby may become impassible due to flooding; though this occurs on the Granby side of the border, it affects the ability of Suffield residents to travel on that road. The four box-culverts that make up the Remington Street Bridge are susceptible to being clogged by debris. Another flood-related vulnerability exists at the Boston Neck Dam; this privately-owned structure overtopped in 2005 and continues to be at risk.

Certain areas in the more rural West Suffield are more vulnerable to power outages because of the large number of trees near the roads; though tree damage has not historically been severe, it is a main concern for the Town. Main Street, a road maintained by the State, is known to



have particularly old trees. Town officials report that the annual road maintenance budget is not sufficient.

Approximately 60% of the Town is not served by public water, and thus is not protected by hydrants. Town officials are concerned that the high level of leaf and tree litter in its open spaces make it at risk of a brush fire.

Hazard Losses

The economic losses faced by the community from natural hazards can be estimated by reviewing historic, and modeling future, loss figures. Loss estimates are summarized below.

Historic FEMA Payments

FEMA reimburses communities for hazard losses through programs including Public Assistance (PA) and the National Flood Insurance Program (NFIP). Combining PA and private flood insurance payments can give an estimate for total losses to a community.

The NFIP has paid five property damage claims in Suffield totaling \$5,734 to-date. Suffield has no Repetitive Loss (RL) Property claims to-date.

Total PA reimbursements to the community were as follows:

- Flood Events: \$12,882 (\$678 annually)
- Hurricane Events: \$34,136 (\$1,797 annually)
- Winter Storm Events: \$1,961,458 (\$103,235 annually)

These are summarized in the tables below.

Table 31-2: Flood Event PA Reimbursements, Suffield

Incident	Sep 1999	Oct 2005
Declaration	9/23/1999	12/16/2005
Disaster No.	1302	1619
Entity	FEMA PA Reimbursement	
State	\$730	\$905
Municipal	\$0	\$11,247
Nonprofit	\$0	\$0
Total	\$730	\$12,152
Annualized	\$38	\$640



Table 31-3: Hurricane Wind Event PA Reimbursements, Suffield

Incident	Aug - Sep 2011 (T.S. Irene)
Declaration	9/2/2011
Disaster #	4023
Entity	FEMA PA Reimbursement
State	\$7,488
Municipal	\$26,648
Nonprofit	\$0
Total	\$34,136
Annualized	\$1,797

Table 31-4: Winter Storm PA Reimbursements, Suffield

Incident	Mar 2003	Dec 2003	Jan 2005	Feb 2006	Jan 2011	Oct 2011	Feb 2013
Declaration	3/11/03	1/15/04	2/17/05	5/2/06	3/3/11	11/17/11	3/21/13
Disaster #	3176	3192	3200	3266	1958	4046	4106
Entity	FEMA PA Reimbursement						
State	\$13,643	\$12,231	\$21,442	\$24,450	\$22,171	\$88,856	\$43,993
Municipal	\$31,650	\$48,072	\$55,313	\$41,052	\$48,872	\$1,411,547	\$98,166
Nonprofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$45,293	\$60,302	\$76,755	\$65,503	\$71,043	\$1,500,403	\$142,159
Annualized	\$2,384	\$3,174	\$4,040	\$3,448	\$3,739	\$78,969	\$7,482

National Centers for Environmental Information Losses

The table below summarizes events in the National Centers for Environmental Information (NCEI) severe storm database that were specifically noted as having impacted the community since 2012.

Table 31-5: NCEI Database Losses since 2012, Suffield

Date	Event	Property Damage
5/29/2013	Thunderstorm Wind	\$10,000
7/9/2014	Thunderstorm Wind	\$3,000
7/12/2017	Hail	\$0
Total		\$13,000

NCEI losses under other event categories (such as drought, high wind, flooding, and winter storms) were not specifically noted as impacting this community, though they did impact Hartford County and nearby towns. NCEI losses are reported in Section II of this Plan.



HAZUS-MH Losses

CRCOG used FEMA’s Hazus-MH model to analyze the risks that the community might face from flooding, hurricanes, and earthquakes. The model estimates economic losses due to damage to buildings and building contents, as well as other economic disruptions. Both residential and commercial structures are addressed. Losses from different hazards are summarized below. Where available, estimates from the previous and current versions of the HMP are provided side-by-side; differences between the two may have been caused by a combination of the following:

- Changes in methodology: such as hazard zone mapping
- Changes in data: such as population and property values
- Changes in the model: this HMP utilized Hazus-MH version 4.0 rather than 2.1
- Other factors: inherent in a complex software like Hazus-MH

More details are available in the Multi-Jurisdictional HMP. Ultimately, changes in the loss estimates reflect the reality that small differences in hazard event features can have a significant impact on losses incurred.

Table 31-6: Estimated Damages to Suffield from a 1% Annual-Chance Flood

Loss Type	2014 Results	2018 Results
Households Displaced	258	81
People Needing Shelter	291	50
Buildings at Least Moderately Damaged	12	0
Economic Losses		
Residential Building & Content Losses	\$14,600,000	\$7,029,659
Other Building & Content Losses	\$9,400,000	\$3,609,024
Total Building & Content Loss	\$24,000,000	\$10,638,683
Total Business Interruption Losses	\$40,000	\$93,989
TOTAL	\$24,030,000	\$10,732,672

Table 31-7: Estimated Damages to Suffield from a 1% Annual-Chance Hurricane

Loss Type	2014 Results (1938 event)	2018 Results (1% track)
Buildings at Least Moderately Damaged	465	1
Buildings Completely Damaged	32	1
Total Debris Generated	49,404 tons	8970
Truckloads (at 25 tons/truck) of building debris	206	359
Economic Losses		
Residential Building & Content Losses	\$44,700,000	\$8,286,840
Other Building & Content Losses	\$5,800,000	\$224,533
Total Building & Content Loss	\$50,500,000	\$8,511,373
Total Business Interruption Losses	\$5,900,000	\$280,219
TOTAL LOSSES	\$56,400,000	\$8,791,592



Losses were calculated from a modeled probabilistic earthquake (1% annual-chance of occurrence), as well as for four specific scenarios with epicenters around Connecticut.

Table 31-8: Estimated Damages to Suffield from a Probabilistic Earthquake

Loss Type	2018 Results
Wage Loss	\$1,545
Rent Loss	\$1,446
Relocation Loss	\$2,517
Income Loss	\$1,054
Inventory Loss	\$148
Total Business Disruption	\$6,711
Structural Loss	\$5,723
Non-Structural Loss	\$18,095
Total Building Loss	\$23,348
Total Content Loss	\$6,550
TOTAL LOSSES	\$36,593

Table 31-9: Estimated Damages to Suffield from Modeled Earthquake Scenarios

Epicenter Location	Magnitude	Estimated Total Losses
East Haddam	6.4	\$67,997.22
Haddam	5.7	\$15,017.52
Portland	5.7	\$33,803.24
Stamford	5.7	\$3,584.57

Average Annualized Losses

Average Annualized Loss (AAL) figures are useful tools for comparison of the risks faced from different hazards with different likelihoods of occurring in a given time period. AAL estimates were prepared for each natural hazard which may impact Suffield based on the methodologies discussed in Section II of the Multi-Jurisdictional HMP. Dam failure, drought, tornado, and wildfire losses were sourced from the 2014 Connecticut Natural Hazard Mitigation Plan Update, with dam failure data supplemented by the National Performance of Dams Program and the Connecticut Department of Energy & Environmental Protection. Earthquake and hurricane losses were calculated in HAZUS-MH. Losses for flooding came from NFIP claims, for winter storms from Public Assistance Reimbursements, and for thunderstorms from the NCEI database. These are presented in the table below in dollars per year. Note that Hurricanes and Tropical Storms represent the largest share of total annualized losses.

Table 31-10: Average Annualized Losses, Suffield

Dam Failure	Drought	Earthquakes	Flooding	Hurricanes and Tropical Storms	Severe Winter Storms	Thunderstorms	Tornadoes	Wildfires	Total
\$28	\$0	\$36,593	\$829	\$986,404	\$103,235	\$2,090	\$230,862	\$7,855	\$1,367,896



Losses Summary

A review of the above loss estimates demonstrates that the Town of Suffield has experienced significant expenses as a result of natural hazards, and is at risk for additional losses if some of the less-frequent events were to occur. These actual and potential losses justify hazard mitigation actions to reduce losses in the future.

Mitigation Strategies and Actions

Noted Hazard Mitigation Needs

During the course of this Plan development, hazard mitigation needs of Suffield were noted, including upgrading the Fire House and Town Garage facilities to be sufficiently large to house each departments.

Status of Previous Mitigation Strategies and Actions

The Town of Suffield reviewed the mitigation actions proposed in the 2014 HMP and determined the status of each. That information is included in the table below.

Table 31-11: Status of Previous Mitigation Strategies and Actions, Suffield

Action #	Action	Notes	Status
GOAL: PROTECT LIFE AND PROPERTY AND MINIMIZE ECONOMIC LOSSES FROM WINTER STORMS.			
Objective 1: Improve the ability of public works and residents to prepare and respond to severe weather.			
1.1	Conduct periodic educational outreach to residents on storm readiness and property maintenance issues.	Town has recurring session at the Senior Center, and 5th grade school program. Wish to also put information in the Observer.	Carry Forward with Revisions
Objective 2: Reduce the amount of debris and loss of power from severe winter storms through preventative tree maintenance.			
2.1	Secure contractual tree removal services and equipment prior to storm response and cleanup.	This has been completed.	Completed
GOAL: PROTECT LIFE AND PROPERTY AND MINIMIZE ROAD BLOCKAGES FROM FLOODING.			
Objective 1: Reduce the likelihood of flooding by improving existing natural and artificial drainage systems.			
1.1	Amend zoning regulations to require low impact development techniques in new development.	Town encourages good building practices through POCD, but does not feel that new zoning laws are feasible at this time.	Drop
1.2	Preemptively clean debris out of select drainage structures before and during heavy storm events.	Town performs this action when possible. Susan Lane & Diane Lane have been identified as sites that need to be monitored.	Carry Forward with Revisions
Objective 2: Reduce flood threats to existing properties.			
2.1	Encourage property owners to refrain from dumping debris into stream channels and drainage culverts.	Town has not yet pursued this action due to staffing limitations. Intends to perform outreach efforts to encourage the practice.	Carry Forward with Revisions
2.2	Conduct a study to identify the worst areas of surface flooding and develop methods to alleviate the problem areas.	Action not yet complete due to staff and funding limitations.	Carry Forward



Action #	Action	Notes	Status
Objective 3: Improve maintenance of waterways and structures.			
3.1	Develop inspection program for culverts and other stormwater management structures.	Create a new list and have inspection annually. Clear annually, according to MS4 requirements.	Completed
GOAL: PROTECT LIFE AND PROPERTY AND MINIMIZE ELECTRICAL DISRUPTIONS FROM TORNADO/HIGH WINDS.			
Objective 1: Reduce the amount of debris and loss of power from severe storms through preventative tree maintenance.			
1.1	Secure contractual tree removal services and equipment prior to storm response and cleanup.	This is performed on an ongoing basis. This is a capability.	Capability

Active Mitigation Strategies and Actions

The Town proposed to initiate several new mitigation actions for the upcoming five years. Additionally, a number of actions from the previous planning period are being carried forward or replaced with revised actions. These are listed below.

Each of the following actions has been prioritized based on FEMA guidelines, listed from highest to lowest priority, and numbered.

Action #1	
Develop a list of flood prone areas and share that list with police and fire.	
Goal	7. Improve the emergency response capabilities of the region and its communities
Category	Preparedness & Emergency Response
Lead	Emergency Management
Cost	\$0 - \$10,000
Funding	Town Operating Budget
Timeframe	01/2019 - 12/2019
Priority	High

Action #2	
Enter the Sustainable CT program through Registration and review actions that can be undertaken to pursue Certification. Make progress with the actions related to hazard mitigation.	
Goal	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.
Category	Natural Resources Protection
Lead	Planning
Cost	\$0 - \$10,000
Funding	Town Operating Budget
Timeframe	01/2019 - 12/2019
Priority	High



Action #3

Preemptively clean debris out of select drainage structures before and during heavy storm events, particularly on Susan & Diane Lanes.

Goal	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.
Category	Prevention
Lead	Public Works
Cost	\$10,000 - \$25,000
Funding	Town Operating Budget
Timeframe	01/2019 - 12/2020
Priority	High

Action #4

Conduct outreach to local small businesses with the aim of preventing the accidental release and pollution from chemicals stored and used at their facilities during or following natural hazard events.

Goal	6. Improve public outreach, education, and warning systems
Category	Education & Awareness
Lead	Planning, in coordination with DEEP
Cost	\$0 - \$10,000
Funding	Materials & Resources Provided by CT DEEP
Timeframe	01/2019 - 12/2019
Priority	Medium

Action #5

Coordinate with NEMO and CRCOG to share resources and gain technical support for hazard mitigation actions involving stormwater management and public outreach, which have parallel benefits related to MS4 stormwater permit compliance.

Goal	1. Minimize the impact of natural hazards on physical buildings and infrastructure
Category	Prevention
Lead	Public Works
Cost	\$0 - \$10,000
Funding	Town Operating Budget
Timeframe	01/2020 - 12/2020
Priority	Medium



Action #6

Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.

Goal	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies
Category	Education & Awareness
Lead	Planning
Cost	\$0 - \$10,000
Funding	Town Operating Budget
Timeframe	07/2019 - 06/2024
Priority	Medium

Action #7

Conduct at least one annual hazard education and outreach campaign to residents using the Town website, Facebook pages, mailers, and information stationed at Town buildings.

Goal	6. Improve public outreach, education, and warning systems
Category	Education & Awareness
Lead	Emergency Management
Cost	\$10,000 - \$25,000
Funding	Town Operating Budget
Timeframe	07/2019 - 06/2024
Priority	Medium

Action #8

Conduct a study to identify the worst areas of surface flooding and develop methods to alleviate the problem areas.

Goal	1. Minimize the impact of natural hazards on physical buildings and infrastructure
Category	Prevention
Lead	Public Works
Cost	\$25,000 - \$50,000
Funding	Town Operating Budget / Grants / DEMHS
Timeframe	07/2021 - 06/2023
Priority	Medium



Action #9

Encourage low impact development techniques in new development in accordance with the POCD.

Goal	2. Ensure Municipal Codes and Regulations support hazard mitigation
Category	Prevention
Lead	Planning
Cost	\$0 - \$10,000
Funding	Town Operating Budget
Timeframe	01/2021 - 12/2022
Priority	Low

Action #10

Encourage property owners to refrain from dumping debris into stream channels and drainage culverts.

Goal	6. Improve public outreach, education, and warning systems
Category	Education & Awareness
Lead	Public Works
Cost	\$0 - \$10,000
Funding	Town Operating Budget
Timeframe	01/2021 - 12/2022
Priority	Low

Action #11

Coordinate with CT SHPO to conduct historic resource surveys, focusing on areas within natural hazard risk zones (such as flood or wildfire hazard zones and areas near steep slopes), to support identification of vulnerable historic properties and preparation of resiliency plans across the state. This action leverages existing resources and best practices for protection of historic and cultural resources through an ongoing statewide initiative by CT SHPO.

Goal	8. Ensure community character and social equity are addressed in mitigation activities
Category	Property Protection
Lead	Planning, in coordination with SHPO
Cost	\$10,000 - \$25,000
Funding	SHPO
Timeframe	07/2021 - 06/2023
Priority	Low












Capitol Region Natural Hazards Mitigation Plan Update




Suffield, Connecticut

Flood Plains, Dams & Critical Facilities




Critical Facilities

-  Fire Station
-  Police Station
-  School
-  Healthcare Facility
-  State Facility
-  Town Facility
-  Waste Water Facility
-  Emergency Center
-  NRHP Buildings/Sites

Dam Hazard Class

-  BB, A, AA OR Unclassified
-  Class B - Significant Hazard
-  Class C - High Hazard

FEMA Flood Hazard Area

-  100 Year Flood Zone
-  500 Year Flood Zone
-  NRHP Districts/Areas

Data Sources: FEMA, National Register of Historic Places, CT DEEP, CRCOG, ESRI



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