

Appendix A
Critical Facilities of the Capitol Region

Critical Facilities Throughout the Capitol Region

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
Town Hall Community Room	Andover	17 School Road			
Andover Police Dept	Andover	17 School Rd			
ANDOVER ELEMENTARY SCHOOL	Andover	35 SCHOOL RD.			
Andover Transfer Station	Andover	Shoddy Mill Rd			
Andover Town Garage	Andover	12 Long Hill Rd Andover 06232			
Andover Volunteer Fire Department	Andover	11 School RD			
AVON HEALTH CENTER	Avon	652 W AVON RD			
APPLE REHAB AVON	Avon	220 SCOVILLE RD			
BAL AVON	Avon	101 BICKFORD EXT			
ARDEN COURTS OF AVON	Avon	100 FISHER DIRVE			
RESIDENCE AT BROOKSIDE, THE	Avon	117 SIMSBURY RD			
Town Hall Complex	Avon	60 West Main Street			
Public Works	Avon	11 Arch Road			
Company # 1	Avon	25 Darling Drive			
Company # 2	Avon	106 Secret Lake Road			X
Company # 3	Avon	490 West Avon Road			
Company # 4	Avon	395 Huckleberry Hill Road			
Avon Police Dept	Avon	60 W Main St			
ROARING BROOK SCHOOL	Avon	30 OLD WHEELER LN.			
PINE GROVE SCHOOL	Avon	151 SCOVILLE RD.			
AVON HIGH SCHOOL	Avon	510 WEST AVON RD.			
AVON MIDDLE SCHOOL	Avon	375 WEST AVON RD.			
THOMPSON BROOK SCHOOL	Avon	150 THOMPSON RD.			
TALCOTT MTN ACAD SCIENCE-MATH	Avon	324 Montevideo Rd			
Avon Volunteer Fire Department Inc.	Avon	25 Darling DR			
Town Hall	Berlin	240 Kensington Road			
Senior Center	Berlin	33 Colonial Drive			
East Berlin Fire Department	Berlin	80 Main Street			X
Town Garage Complex	Berlin	27 Farm Lane	X		X
Berlin Police Dept	Berlin	240 Kensington Rd			
BERLIN HIGH SCHOOL	Berlin	139 PATTERSON WAY			
CATHERINE M. MCGEE MIDDLE SCHOOL	Berlin	899 NORTON RD.			
EMMA HART WILLARD SCHOOL	Berlin	1088 NORTON RD.			
Berlin Volunteer Fire Department	Berlin	1657 Wilbur Cross HWY			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
MOORELAND HILL SCHOOL	Berlin	166 LINCOLN STREET			
ST PAUL SCHOOL	Berlin	461 ALLING STREET			
MARY E. GRISWOLD SCHOOL	Berlin	133 HEATHER LN.			
South Kensington Fire Department Inc	Berlin	1952 Chamberlain HWY			
Kensington Volunteer Fire Department	Berlin	880 Farmington AVE			X
Company #3	Bloomfield	360 Tunxis Ave			
Company #2	Bloomfield	41 Duncaster Rd			
Public Works Facility	Bloomfield	21 Southwood Drive			
Bloomfield Ambulance	Bloomfield	12 Southwood Drive			
Town Hall	Bloomfield	800 Bloomfield Avenue			
TOUCHPOINTS AT BLOOMFIELD	Bloomfield	140 PARK AVE			
CALEB HITCHCOCK HEALTH CENTER	Bloomfield	10 LOEFFLER RD			
SEABURY	Bloomfield	200 SEABURY DR			
BLOOMFIELD CENTER FOR NURSING & REHABILITATION	Bloomfield	355 PARK AVE			
SEABURY	Bloomfield	200 SEABURY DR			
DUNCASTER, INC.	Bloomfield	40 LOEFFLER RD			
Bloomfield Police Dept	Bloomfield	785 Park Ave			
METACOMET SCHOOL	Bloomfield	185 SCHOOL ST.			
CARMEN ARACE MIDDLE SCHOOL	Bloomfield	390 PARK AVE.			
CARMEN ARACE INTERMEDIATE SCHOOL	Bloomfield	390 PARK AVENUE			
BLOOMFIELD HIGH SCHOOL	Bloomfield	5 HUCKLEBERRY LN.			
J. P. VINCENT SCHOOL	Bloomfield	11 TURKEY HILL RD.			
THE BESS AND PAUL SIGEL HEBREW	Bloomfield	53 GABB ROAD			
THE FIRST ACADEMY	Bloomfield	1151 BLUE HILLS AVENUE			
LAUREL SCHOOL	Bloomfield	1 FILLEY ST.			
THE BIG PICTURE HIGH SCHOOL	Bloomfield	44 GRIFFIN ROAD SOUTH			
METROPOLITAN LEARNING CENTER	Bloomfield	1551 BLUE HILLS AVE.			
PATHWAYS TO TECHNOLOGY MAGNET SCHOOL	Bloomfield	1551 BLUE HILLS AVENUE			
Blue Hills Fire Department	Bloomfield	1021 Blue Hills AVE			
Bloomfield Fire Dept	Bloomfield	18 Wintonbury AVE			
Herrick Park	Bolton	29 Hebron Road			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
Town Garage	Bolton	222 Bolton Center Road			
Town Hall	Bolton	222 Bolton Center Road			
Bentley Memorial Library	Bolton	206 Bolton Center Road			
BOLTON CENTER SCHOOL	Bolton	108 NOTCH RD.			
BOLTON HIGH SCHOOL	Bolton	72 BRANDY ST.			
HANS CHR ANDERSEN MONTESSORI	Bolton	212 BOLTON CENTER RD			
THE KING S SCHOOL	Bolton	104 NOTCH ROAD			
Herrick Park	Bolton	29 Hebron Road Bolton 06043			
Bolton Town Garage	Bolton	222 Bolton Center Road Bolton 06043			
Bolton Town Hall	Bolton	222 Bolton Center Road Bolton 06043			
Notch Road Municipal Center	Bolton	106 Notch Road Bolton, CT 06043			
Bentley Memorial Library	Bolton	206 Bolton Center Road Bolton 06043			
Bolton VFD	Bolton	168 Bolton Center RD			
Town Hall	Broad Brook	11 Rye St			
EAST WINDSOR MIDDLE SCHOOL	Broad Brook	38 MAIN ST.			
Broad Brook Fire Dept	Broad Brook	125 Main ST			
Cherry Brook Heath Care Center	Canton	102 Dyer Ave			
Community Center	Canton	40 Dyer Center			X
Canton Street Station	Canton	14 Canton Springs Road			X
North Canton Station	Canton	540 Cherry Brook Road			
CANTON	Canton	50 Old River Road	X		X
Canton Police Dept	Canton	45 River Road			X
CHERRY BROOK SCHOOL	Canton	4 BARBOURTOWN RD.	X		
CANTON HIGH SCHOOL	Canton	76 SIMONDS AVE.			X
CANTON INTERMEDIATE SCHOOL	Canton	39 DYER AVE.			X
CANTON MIDDLE SCHOOL	Canton	76 SIMONDS AVENUE			X
Colchester Hayward Fire Department	Colchester	52 Old Hartford RD			
Public works Facility	Collinsville	50 Old River Road	X		X
Collinsville Station	Collinsville	51 River Road			X
Canton Fire/EMS	Collinsville	4 Market Street P.O. Box 168			X

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
Columbia Resident Trooper	Columbia	PO Box 165			
HORACE W. PORTER SCHOOL	Columbia	3 SCHOOLHOUSE RD.			
LIGHTHOUSE CHRISTIAN SCHOOL	Columbia	195 ROUTE 6			
WINDHAM EARLY CHILDHOOD CENTER COLUMBIA	Columbia	10 COMMERCE DR.	X		
EASTERN REGIONAL ACADEMY/WINDHAM	Columbia	14 ROUTE 66			
Columbia Volunteer Fire Department Inc.	Columbia	167 RT 66			
Senior Center	Coventry	172 Lake Street			
North Coventry Volunteer Fire Department	Coventry	3427 Main Street			
Coventry Volunteer Fire Association	Coventry	1645 South Street			
North Coventry Volunteer Fire Department	Coventry	951 Merrow Road			
Nathan Hale Homestead	Coventry	2299 South St			
Strong Porter House	Coventry	2382 South St			
Elderly Housing Community	Coventry	1630 Main St			
Coventry WWTP	Coventry	1712 Main Street/Rte. 31			
Coventry Police Dept	Coventry	1712 Main St			
COVENTRY GRAMMAR SCHOOL	Coventry	3453 MAIN ST.			
CAPT. NATHAN HALE SCHOOL	Coventry	1776 MAIN ST.			
COVENTRY HIGH SCHOOL	Coventry	78 RIPLEY HILL RD.			
GEORGE HERSEY ROBERTSON SCHOOL	Coventry	227 CROSS ST.			
COVENTRY EARLY EDUCATION DEVELOPMENT (CE	Coventry	1171 MAIN STREET			
Coventry Volunteer Fire Association Inc	Coventry	1755 Main ST			
RICHARD D. HUBBARD SCHOOL	East Berlin	139 GROVE ST.			
Town Hall/EOC	East Granby	9 Center Street			
South End Fire Station	East Granby	1 Seymour Road			
Station 1	East Granby	7 Memorial Drive			
Parks and Rec Office	East Granby	79 North Main Street			
Library	East Granby	24 Center Street			
Department of Public Works	East Granby	26 South Main Street			
Community/Senior Center	East Granby	7 Memorial Drive			
Congregational Church	East Granby	9 Rainbow Rd			
Metacomet Homes	East Granby	47 N Main St			
East Granby Police Dept	East Granby	7 Memorial Dr			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
ALLGROVE SCHOOL	East Granby	33 TURKEY HILLS RD.			
EAST GRANBY HIGH SCHOOL	East Granby	95 SOUTH MAIN ST.			
EAST GRANBY MIDDLE SCHOOL	East Granby	95 SOUTH MAIN ST.			
R. DUDLEY SEYMOUR SCHOOL	East Granby	185 HARTFORD AVE.			X
103CES Fire Department CTANG	East Granby	100 Nicholson RD			
East Hartford EOC	East Hartford	31 School Street			
Station 2	East Hartford	1692 Main St			
Station 3	East Hartford	31 School Street			
Station 5	East Hartford	141 Brewer St			
Station 6	East Hartford	1050 Forbes St			
Library	East Hartford	840 Main St			
Community Cultural Center	East Hartford	50 Chapman Pl			
Senior Center	East Hartford	70 Canterbury St			
RIVERSIDE HEALTH & REHABILITATION CENTER	East Hartford	745 MAIN ST			
THE METROPOLITAN DISTRICT - EAST HARTFORD	East Hartford	65 Pitkin Street			
East Hartford Emergency Mgmt.	East Hartford	740 Main St			
East Hartford Police Dept	East Hartford	497 Tolland St			
East Hartford Police Dept	East Hartford	527 Burnside Ave			
HOCKANUM SCHOOL	East Hartford	191 MAIN ST.			
EAST HARTFORD/GLASTONBURY MAGNET SCHOOL	East Hartford	305 MAY RD.			
DR. THOMAS S. O'CONNELL SCHOOL	East Hartford	301 MAY RD.			
ST ROSE	East Hartford	21 CHURCH ST			
NEW TESTAMENT BAPT.CH. SCHOOL	East Hartford	111 ASH ST			
ST CHRISTOPHER	East Hartford	570 BREWER STREET			
GOVERNOR WILLIAM PITKIN SCHOOL	East Hartford	330 HILLS ST.			
SUNSET RIDGE SCHOOL	East Hartford	450 FORBES ST.			
STEVENS ALTERNATE HIGH SCHOOL	East Hartford	40 BUTTERNUT DRIVE			
DR. FRANKLIN H. MAYBERRY SCHOOL	East Hartford	101 GREAT HILL RD.			
EAST HARTFORD MIDDLE SCHOOL	East Hartford	777 BURNSIDE AVE.			
WOODLAND SCHOOL	East Hartford	110 LONG HILL DR.			
DR. JOHN A. LANGFORD SCHOOL	East Hartford	61 ALPS DR.			
ROBERT J. O'BRIEN SCHOOL	East Hartford	52 FARM DR.			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
TWO RIVERS MIDDLE MAGNET SCHOOL	East Hartford	337 EAST RIVER DR.			
ANNA E. NORRIS SCHOOL	East Hartford	40 REMINGTON RD.			
EAST HARTFORD HIGH SCHOOL	East Hartford	869 FORBES ST.			
CT INTERNATIONAL BACCALAUREATE ACADEMY	East Hartford	869 FORBES ST.			
SILVER LANE SCHOOL	East Hartford	15 MERCER AVE.			
WILLOWBROOK EARLY CHILDHOOD	East Hartford	95 WILLOWBROOK RD.			
JOSEPH O. GOODWIN SCHOOL	East Hartford	1235 FORBES ST.			
East Hartford Fire Dept	East Hartford	726 Main ST			
Pratt & Whitney	East Hartford	400 Main ST			
Emergency Management	East Windsor	25 School St			
Department of Public Works	East Windsor	6 Woolam Road			
Senior Center	East Windsor	125 Main St			
St. John's Church	East Windsor	92 Main St			
FRESH RIVER HEALTHCARE	East Windsor	96 PROSPECT HILL RD			
TOUCHPOINTS AT CHESTNUT	East Windsor	171 MAIN STREET			
Kettle Brook Care Center	East Windsor	96 Prospect Hill Rd			
EAST WINDSOR	East Windsor	192 South Water Street	X		
East Windsor Police Dept/ Emergency Operations Center	East Windsor	25 School St			
Albert J. Solnit Psychiatric Center- North Campus	East Windsor	36 GARDNER ST.			
EAST WINDSOR HIGH SCHOOL	East Windsor	76 SOUTH MAIN ST.			
BROAD BROOK ELEMENTARY SCHOOL	East Windsor	14 RYE ST.			
Warehouse Point Fire District	East Windsor	89 Bridge ST			
Library	Ellington	93 Main St			
Ellington Emergency Management	Ellington	55 Main St			
Ellington Police Dept	Ellington	57 Main St			
CENTER SCHOOL	Ellington	49 MAIN ST.			
ELLINGTON HIGH SCHOOL	Ellington	37 MAPLE ST.			
WINDERMERE SCHOOL	Ellington	2 ABBOTT RD.			
CRYSTAL LAKE SCHOOL	Ellington	284 SANDY BEACH RD.			
ELLINGTON MIDDLE SCHOOL	Ellington	46 MIDDLE BUTCHER RD.			
PRESCHOOL OF THE ARTS, INC.	Ellington	18 CHURCH STREET			
The Ellington Volunteer Fire Department	Ellington	29 Main ST			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
Crystal Lake Fire Department	Ellington	316 Sandy Beach Road			
Town Hall	Enfield	820 Enfield St			
EMS	Enfield	1296 Enfield St			
Department of Public Works Yard and Building	Enfield	40 Moody Rd			
Parkway Pavilion	Enfield	1157 ENFIELD STREET			
Community Health Resources Group Home	Enfield	153 Hazard Ave			
Allied Rehabilitation Centers	Enfield	3 Pearson Wat			
Enfield Correctional Institute	Enfield	289 Shaker Rd			
Willard Correctional Institute	Enfield	391 Shaker Rd			
Robinson Correctional Institution	Enfield	285 Shaker Rd			
ST. JOSEPH'S RESIDENCE	Enfield	1365 ENFIELD ST			
ENFIELD	Enfield	90 Parson Road		X	
Enfield Police Animal Control	Enfield	293 Elm St			
ST BERNARD SCHOOL	Enfield	232 PEARL STREET			
ST MARTHA SCHOOL	Enfield	214 BRAINARD RD			
ST ADALBERT SCHOOL	Enfield	90 ALDEN AVENUE			
ENFIELD MONTESSORI SCHOOL	Enfield	1370 ENFIELD STREET			
HAZARDVILLE DAY CARE CTR LLC	Enfield	359 HAZARD AVE.			
CCI/ENFIELD	Enfield	SHAKER ROAD			
ENRICO FERMI HIGH SCHOOL	Enfield	124 NORTH MAPLE ST.			
HENRY BARNARD SCHOOL	Enfield	27 SHAKER RD.			
PRUDENCE CRANDALL SCHOOL	Enfield	150 BRAINARD RD.			
THOMAS G. ALCORN SCHOOL	Enfield	1010 ENFIELD ST.			
HEAD START PROGRAM	Enfield	1270 ENFIELD STREET			
ENFIELD HIGH SCHOOL	Enfield	1264 ENFIELD ST.			
ENFIELD STREET SCHOOL	Enfield	1318 ENFIELD ST.			
ELI WHITNEY SCHOOL	Enfield	94 MIDDLE RD.			
HAZARDVILLE MEMORIAL SCHOOL	Enfield	68 NORTH MAPLE ST.			
NATHAN HALE SCHOOL	Enfield	5 TAYLOR RD.			
HARRIET BEECHER STOWE SCHOOL	Enfield	117 POST OFFICE RD.			
JOHN F. KENNEDY MIDDLE SCHOOL	Enfield	155 RAFFIA RD.			
EDGAR H. PARKMAN SCHOOL	Enfield	165 WEYMOUTH RD.			
Shaker Pines Fire District	Enfield	37 Bacon RD			
North Thompsonville Fire Department	Enfield	439 Enfield ST			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
Thompsonville Fire Department	Enfield	11 Pearl ST		X	
Enfield Fire Department	Enfield	200 Phoenix AVE			
Hazardville Fire Department	Enfield	385 Hazard AVE			
TOUCHPOINTS AT FARMINGTON	Farmington	20 SCOTT SWAMP RD			X
AMBERWOODS OF FARMINGTON	Farmington	416 COLT HWY			
ARDEN COURTS OF FARMINGTON	Farmington	45 SOUTH RD			
BROOKDALE FARMINGTON	Farmington	20 DEVONWOOD DR		X	X
CARE LINK CORPORATION	Farmington	509 MIDDLE RDKATIE MAURIELLO			
ATRIA FARMINGTON	Farmington	111 SCOTT SWAMP RD			
FARMINGTON	Farmington	921 Farmington Ave	X		X
UNIV OF CT HEALTH CENTER	Farmington	263 FARMINGTON AVENUE			
Farmington Police Dept	Farmington	1 Montieth Dr			
FARMINGTON HIGH SCHOOL	Farmington	10 MONTEITH DRIVE			X
MISS PORTER'S SCHOOL	Farmington	60 MAIN STREET			
IRVING A. ROBBINS MIDDLE SCHOOL	Farmington	20 WOLF PIT RD.			
EAST FARMS SCHOOL	Farmington	25 WOLF PIT RD.			
WEST WOODS UPPER ELEMENTARY SCHOOL	Farmington	50 JUDSON LANE			
NOAH WALLACE SCHOOL	Farmington	2 SCHOOL ST.			
University of Connecticut Health Center	Farmington	263 Farmington AVE			
Town of Farmington Fire Department	Farmington	1 Monteith DR			X
WEST DISTRICT SCHOOL	Farmington	114 WEST DISTRICT ROAD			
UNION SCHOOL	Farmington	173 SCHOOL ST.			X
GLASTONBURY HEALTH CARE CENTER, INC.	Glastonbury	1175 HEBRON AVE			
SALMON BROOK CENTER	Glastonbury	72 SALMON BROOK DR			
BROOKDALE BUCKINGHAM	Glastonbury	1824 MANCHESTER RD			
ATRIA GLASTONBURY	Glastonbury	1177 HEBRON AVENUE			
Town Hall	Glastonbury	2155 Main Street			
Police Department & Emergency Operations Center	Glastonbury	2108 Main Street			
Ambulance Facility	Glastonbury	2108R Main Street			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
Parks Maintenance Garage	Glastonbury	1086R New London Turnpike			
Community Center	Glastonbury	300 Welles Street		X	
Highway/Vehicle Maintenance Garage	Glastonbury	2380 New London Turnpike			
Nayaug Elementary School	Glastonbury	Old Maids Lane			
Herbert T. Clark Assisted Living and Congregate Housing	Glastonbury	45 Canione Road			
Center Village	Glastonbury	New London Turnpike			
Village Green and Knox Lane Annex	Glastonbury	Knox Lane			
Naubuc Green	Glastonbury	193 Welles Street	X		
Genesis Health Care Facility	Glastonbury	72 Salmon Brook Drive			
Mountain Laurel Health Care Facility	Glastonbury	1175 Hebron Avenue			
Angus Pond	Glastonbury	Fisher Hill Road	X		
Slocumb	Glastonbury	Matson Hill Road	X		
Roser Pond	Glastonbury	New London Turnpike			
Williams Pond	Glastonbury	Williams Street	X		
Buckingham Reservoir	Glastonbury		X		
Mill Street	Glastonbury	Mill Street			
Stop & Shop	Glastonbury	215 Glastonbury Blvd		X	
Stop & Shop	Glastonbury	55 Oak Street			
Whole Foods Market	Glastonbury	55 Welles Street			
Gardiners Market	Glastonbury	868 Main Street			
Highland Park Market	Glastonbury	1320 Manchester Road			
Mobil Mart	Glastonbury	2943 Main Street			
Stop and Shop Gasoline	Glastonbury	2750 Main Street			
Global	Glastonbury	2997 Main Street			
Mobil Mart	Glastonbury	2952 Main Street			
Hebron Avenue Shell	Glastonbury	566 Hebron Avenue			
Hebron Avenue Citgo	Glastonbury	592 Hebron Avenue			
Richard's Irving	Glastonbury	890 Main Street			
Shell Mart	Glastonbury	2749 Main Street	X		
Shell Mart	Glastonbury	2088 Manchester Road			
GLASTONBURY	Glastonbury	2149 Main Street	X		
Police Dept Investigation Div.	Glastonbury	2108 Main St			
GIDEON WELLES SCHOOL	Glastonbury	1029 NEIPSIC RD.			
SMITH MIDDLE SCHOOL	Glastonbury	216 ADDISON RD.			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
HEBRON AVENUE SCHOOL	Glastonbury	1323 HEBRON AVE.			
EASTBURY SCHOOL	Glastonbury	1389 NEIPSIC RD.			
HOPEWELL SCHOOL	Glastonbury	1050 CHESTNUT HILL RD.			
NAUBUC SCHOOL	Glastonbury	84 GRISWOLD ST.			
BUTTONBALL LANE SCHOOL	Glastonbury	376 BUTTONBALL LN.			
GLASTONBURY HIGH SCHOOL	Glastonbury	330 HUBBARD ST.			
SHIRLEY REABACK ECC	Glastonbury	1079 HEBRON AVENUE			
KINDER CARE LEARNING CENTER	Glastonbury	30 NUTMEG LANE			
OUR CHILDRENS PLACE	Glastonbury	30 QUARRY RD			
GLASTONBURY VOLUNTEER FIRE DEPARTMENT	Glastonbury	1247 Manchester RD			
GLASTONBURY VOLUNTEER FIRE DEPARTMENT	Glastonbury	2825 MAIN ST	X		
GLASTONBURY VOLUNTEER FIRE DEPARTMENT	Glastonbury	1089 Chestnut Hill RD			
GLASTONBURY VOLUNTEER FIRE DEPARTMENT	Glastonbury	905 Main ST			
Glastonbury East Hartford Magnet School (GEMS	Glastonbury	95 Oak Street			
Community Center	Glastonbury	300 Welles St			
Parker Terrace Sewer Pump Station	Glastonbury	30 Parker Terrace	X		
Nutmeg Sewer Pump Station	Glastonbury	105 Nutmeg Ln			
Hubbard Sewer Pump Station	Glastonbury	15 Hubbard St			
Smith Sewer Pump Station	Glastonbury	1610 Main St			
High Street Sewer Pump Station	Glastonbury	125 High & Water St		X	
Matson Hill Sewer Pump Station	Glastonbury	35 Matson Hill Rd	X		
Eastbury Sewer Pump Station	Glastonbury	35 Roaring Brook Plaza			
Cider Mill Sewer Pump Station	Glastonbury	260 Cider Mill Rd			
Ambulance	Granby	1 Pegville Road			
Town Hall	Granby	15b N Granby Rd			
Library	Granby	15 N Granby Rd			
West Granby Station	Granby	256 West Granby Rd			
Senior Center	Granby	15 N Granby Rd			
Salmon Brook Nursing Home	Granby	350 Salmon Brook St		X	
YMCA	Granby	97 Salmon Brook St			
Stony Hill Village	Granby	259 Salmon Brook St			
The Doctors Treatment Center	Granby	7 Mill Pond Rd			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
MEADOWBROOK OF GRANBY	Granby	350 SALMON BROOK ST		X	
Granby Police Dept	Granby	15 N Granby Rd			
WELLS ROAD INTERMEDIATE SCHOOL	Granby	134 WELLS RD.			
FRANK M. KEARNS PRIMARY SCHOOL	Granby	5 CANTON RD.			
GRANBY MEMORIAL HIGH SCHOOL	Granby	315 SALMON BROOK ST.			
KELLY LANE PRIMARY SCHOOL	Granby	60 KELLY LN.			
GRANBY MEMORIAL MIDDLE SCHOOL	Granby	321 SALMON BROOK ST.			
Lost Acres Fire Department	Granby	206 Salmon Brook St.			
North Granby Fire Station	Granby	354 North Granby Road	X		
DPW Facility	Granby	52 North Granby Road			
Fire Headquarters	Hartford	253 High Street			
PARK PLACE HEALTH CENTER	Hartford	5 GREENWOOD ST			
TRINITY HILL CARE CENTER	Hartford	151 HILLSIDE AVE			
CHELSEA PLACE CARE CENTER, LLC	Hartford	25 LORRAINE ST			
AVERY NURSING HOME/NOBLE BUILDING	Hartford	705 NEW BRITAIN AVE			
AVERY HEIGHTS ASSISTED LIVING SERVICES AGENCY	Hartford	705 NEW BRITAIN AVENUE			
THE METROPOLITAN DISTRICT - HARTFORD	Hartford	240 Brainard Road			
Office of Emergency Management	Hartford	360 Broad Street			
CONNECTICUT CHILDREN'S MED CTR	Hartford	282 WASHINGTON STREET			
SAINT FRANCIS HOSP AND MED CTR	Hartford	114 WOODLAND STREET			
HARTFORD HOSPITAL	Hartford	80 SEYMOUR STREET			
Hartford County Sheriff's Ofc	Hartford	101 Lafayette St			
Mailloux Musumeci Deputy Sheriff	Hartford	39 Russ St			
Sparmer, Tracy	Hartford	398 Franklin Ave			
Hartford Police Dept Admin	Hartford	50 Jennings Rd			
Sheriff's Dept	Hartford	84 Wadsworth St			
BARNARD-BROWN SCHOOL	Hartford	1304 MAIN ST.			
SPORTS AND MEDICAL SCIENCES ACADEMY	Hartford	275 ASYLUM ST.			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
HARTFORD TRANSITIONAL LEARNING ACADEMY (Hartford	110 WASHINGTON STREET			
CAPITOL PREPARATORY MAGNET SCHOOL	Hartford	950 MAIN STREET			
DR. JOSEPH BELIZZI MIDDLE SCHOOL	Hartford	215 SOUTH ST.			
NAYLOR SCHOOL	Hartford	639 FRANKLIN AVE.			
DWIGHT SCHOOL	Hartford	585 WETHERSFIELD ST.			
BULKELEY HIGH SCHOOL	Hartford	300 WETHERSFIELD AVE.			
BURR SCHOOL	Hartford	400 WETHERSFIELD AVE.			
MONTESSORI MAGNET SCHOOL	Hartford	1460 BROAD ST.			
HARTFORD MAGNET MIDDLE SCHOOL	Hartford	53 VERNON ST.			
BURNS SCHOOL	Hartford	195 PUTNAM ST.			
SANCHEZ SCHOOL	Hartford	176 BABCOCK ST.			
WEST MIDDLE SCHOOL	Hartford	927 ASYLUM AVE.			
SPECIAL EDUCATION PROGRAM	Hartford	410 CAPITOL AVE.			
FOX MIDDLE SCHOOL	Hartford	305 GREENFIELD ST.			
M. L. KING SCHOOL	Hartford	25 RIDGEFIELD ST.			
ANNIE-FISHER MULTIPLE INTELLIGENCE MAGNE	Hartford	280 PLAINFIELD ST.			
RAWSON SCHOOL	Hartford	260 HOLCOMB ST.			
TWAIN SCHOOL	Hartford	395 LYME ST.			
WEAVER HIGH SCHOOL	Hartford	415 GRANBY ST.			
BREAKTHROUGH MAGNET SCHOOL	Hartford	121 CORNWALL ST.			
JUMOKE ACADEMY	Hartford	250 BLUE HILLS AVE.			
HARTFORD PUBLIC HIGH SCHOOL	Hartford	55 FOREST ST.			
C. R. E. C. SPECIAL EDUCATION	Hartford	111 CHARTER OAK AVENUE			
KINSELLA SCHOOL	Hartford	65 VAN BLOCK AVE.			
DR. RAMON E. BETANCES SCHOOL	Hartford	42 CHARTER OAK AVE.			
HARTFORD COMMUNITY CORRECTIONAL CENTER	Hartford	177 WESTON ST.			
SAND SCHOOL	Hartford	1750 MAIN ST.			
WISH SCHOOL	Hartford	350 BARBOUR ST.			
HARTFORD TRANSITIONAL LEARNING ACADEMY (Hartford	150 TOWER AVENUE			
CLARK SCHOOL	Hartford	75 CLARK ST.			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
MILNER SCHOOL	Hartford	104 VINE ST.			
SIMPSON-WAVERLY CLASSICAL MAGNET SCHOOL	Hartford	55 WAVERLY ST.			
QUIRK MIDDLE SCHOOL	Hartford	85 EDWARDS ST.			
M. D. FOX ELEMENTARY SCHOOL	Hartford	470 MAPLE AVE.			
SHILOH CHRISTIAN ACADEMY THE G	Hartford	870 PROSPECT AVENUE			
ST AUGUSTINE SCHOOL	Hartford	20 CLIFFORD ST			
OAK HILL SCHOOL	Hartford	120 HOLCOMB STREET			
THE GRACE S. WEBB SCHOOL	Hartford	200 RETREAT AVENUE			
WATKINSON SCHOOL	Hartford	180 BLOOMFIELD AVE			
HARTFORD CHRISTIAN SCHOOL	Hartford	830 MAPLE AVE			
GRAY LODGE SCHOOL	Hartford	105 SPRING STREET			
HARTFORD AREA SDA SCHOOL	Hartford	474 WOODLAND ST			
SS CYRIL AND METHODIUS SCHOOL	Hartford	35 GROTON STREET			
LITTLE OWLS LEARNING CENTER	Hartford	55 FOREST ST.			
UNIVERSITY HIGH SCHOOL	Hartford	1265 ASYLUM STREET			
GREATER HARTFORD CLASSICAL MAGNET SCHOOL	Hartford	55 FOREST STREET			
PARKVILLE COMMUNITY SCHOOL	Hartford	1755 PARK ST.			
NOAH WEBSTER MICRO SOCIETY SCHOOL	Hartford	5 CONE ST.			
HOOKER SCHOOL	Hartford	200 SHERBROOKE AVE.			
A. I. PRINCE TECHNICAL HIGH SCHOOL	Hartford	500 BROOKFIELD ST.			
BATCHELDER SCHOOL	Hartford	757 NEW BRITAIN AVE.			
KENNELLY SCHOOL	Hartford	180 WHITE ST.			
MCDONOUGH SCHOOL	Hartford	111 HILLSIDE AVE.			
MOYLAN SCHOOL	Hartford	101 CATHERINE ST.			
Hartford Fire Department	Hartford	275 Pearl ST			
Public Works	Hebron				
Town Hall	Hebron	15 Gilead St			
Douglas Library of Hebron	Hebron	22 Main St			
Hebron Emergency Management	Hebron	44 Main St			
Hebron Police Dept	Hebron	44 Main St			
GILEAD HILL SCHOOL	Hebron	580 GILEAD ST.			
HEBRON ELEMENTARY SCHOOL	Hebron	92 CHURCH ST.			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
RHAM HIGH SCHOOL	Hebron	85 WALL STREET			
RHAM MIDDLE SCHOOL	Hebron	25 RHAM RD.			
Hebron Volunteer Fire Department	Hebron	44 Main ST			
Station 5	Manchester	331 Tolland Tpke			
Station 4	Manchester	105 Highland St			
Station 3	Manchester	11 Weaver Rd			
Station 1	Manchester	138 McKee St			
Senior Center	Manchester	549 Middle Turnpike E			
WESTSIDE CARE CENTER, LLC	Manchester	349 BIDWELL ST			
TOUCHPOINTS AT MANCHESTER	Manchester	333 BIDWELL ST			
MANCHESTER MANOR HEALTH CARE CENTER	Manchester	385 W CENTER ST			
CRESTFIELD REHABILITATION CENTER AND FENWOOD MANOR	Manchester	565 VERNON ST			
MANCHESTER	Manchester	120 Thrall Road			
Manchester Emergency Mgmt. Ofc	Manchester	479 Main St			
Manchester Emergency Mgmt. Ofc	Manchester	75 Center St			
MANCHESTER MEMORIAL HOSPITAL	Manchester	71 HAYNES STREET			
Manchester Police Dog Warden	Manchester	239 Middle Tpke E			
Community Relations	Manchester	PO Box 191			
ODYSSEY COMMUNITY SCHOOL	Manchester	579 WEST MIDDLE TURNPI			
VERPLANCK SCHOOL	Manchester	126 OLCOTT ST.			
WASHINGTON SCHOOL	Manchester	94 CEDAR ST.			
BENNET MIDDLE SCHOOL	Manchester	1151 MAIN ST.			
NATHAN HALE SCHOOL	Manchester	160 SPRUCE ST.			
BUCKLEY SCHOOL	Manchester	250 VERNON ST.			
HIGHLAND PARK SCHOOL	Manchester	397 PORTER ST.			
KEENEY SCHOOL	Manchester	179 KEENEY ST.			
GREAT PATH ACADEMY AT MCC	Manchester	GREAT PATH			
MANCHESTER REGIONAL ACADEMY	Manchester	665 WETHERELL ST.			
MARTIN SCHOOL	Manchester	140 DARTMOUTH ROAD			
ASSUMPTION SCHOOL	Manchester	27 ADAMS ST S			
ST JAMES SCHOOL	Manchester	73 PARK STREET			
ST BRIDGET SCHOOL	Manchester	74 MAIN STREET			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
KINDERCARE LEARNING CENTER	Manchester	481 SPRING STREET			
COMMUNITY CHILD GUIDANCE CLINI	Manchester	317 NORTH MAIN ST			
BIRCH MOUNTAIN DAY SCHOOL	Manchester	645 BIRCH MOUNTAIN ROAD			
CLINICAL DAY SCHOOL AT MANCHES	Manchester	71 HAYNES STREET			
THE CHILDREN'S PLACE, INC.	Manchester	452 TOLLAND TURNPIKE			
EAST CATHOLIC HIGH SCHOOL	Manchester	115 NEW STATE ROAD			X
HOWELL CHENEY TECHNICAL HIGH SCHOOL	Manchester	791 WEST MIDDLE TPKE.			
ROBERTSON SCHOOL	Manchester	65 NORTH SCHOOL ST.			
BOWERS SCHOOL	Manchester	141 PRINCETON ST.			
ILLING MIDDLE SCHOOL	Manchester	227 EAST MIDDLE TPKE.			
MANCHESTER HIGH SCHOOL	Manchester	134 EAST MIDDLETPKE.			
WADDELL SCHOOL	Manchester	163 BROAD ST.			
MANCHESTER HEAD START	Manchester	57 HOLLISTER ST.			
CORNERSTONE CHRISTIAN SCHOOL	Manchester	236 MAIN STREET			
Manchester Fire Department 8th Utilities	Manchester	138 Main ST			
Manchester Fire Department 8th Utilities	Manchester	32 Main ST			
Town of Manchester Fire-Rescue- EMS Dep	Manchester	75 Center ST			
Manchester Fire Department 8th Utilities	Manchester	1039 Tolland TPKE			
Holiday Hill Camp	Mansfield	41 Chaffeeville Rd			
OAK GROVE MONTESSORI ELEM/PRES	Mansfield	132 PLEASANT VALLEY ROAD			
SOUTHEAST ELEMENTARY SCHOOL	Mansfield	134 WARRENVILLE RD.			
ANNIE E. VINTON SCHOOL	Mansfield	306 STAFFORD RD.			
NATCHAUG HOSPITAL	Mansfield	189 STORRS ROAD			
MT. HOPE MONTESSORI SCHOOL	Mansfield	48 Bassetts Bridge Rd			
NATCHAUG HOSPITAL SCHOOL	Mansfield	189 STORRS ROAD			
UNIVERSITY OF CONNECTICUT	Mansfield	40 Ledoyt Road Extension			
Eagleville Fire Department	Mansfield	1722 Storrs Rd			
Uconn PD	Mansfield	126 N Eagleville Rd			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
Mansfield center for nursing and rehab	Mansfield	100 Warren Circle			
juniper hill elderly housing	Mansfield	1 Silo cir			
wrights way elderly housing	Mansfield	309 Maple Rd			
Jensens residential community	Mansfield	536 Middle Turnpike			
MANSFIELD MIDDLE SCHOOL SCHOOL	Mansfield	205 SPRING HILL RD.			
UNIV OF CT CHILD DEVEL LABS	Mansfield	843 BOLTON RD-U-117 HUMAN DEV			
E. O. SMITH HIGH SCHOOL	Mansfield	1235 STORRS RD.			
BERGIN CORRECTIONAL INSTITUTE	Mansfield	251 MIDDLE TPKE.			
DOROTHY C. GOODWIN SCHOOL	Mansfield	321 HUNTING LODGE RD.			
Mansfield VFC	Mansfield	999 Storrs RD			
Eagleville Fire Department	Mansfield	879 Stafford RD			
University of Connecticut Fire Department	Mansfield	126 N Eagleville RD			
Mansfield Police Dept	Mansfield	4 S Eagleville Rd			
Transfer Station	Marlborough	76 Quinn Rd			
Town Hall	Marlborough	26 N Main St			
Fire House #2	Marlborough	200 West Road	X		
MARLBOROUGH HEALTH & REHABILITATION CENTER	Marlborough	85 STAGE HARBOR RD			
MARLBOROUGH ELEMENTARY SCHOOL	Marlborough	25 SCHOOL DR.			
Marlborough Volunteer Fire Department	Marlborough	7 Hebron RD			
Police Department	New Britain	10 Chestnut Street			
GRANDVIEW REHABILITATION AND HEALTHCARE CENTER	New Britain	55 GRAND ST			
JEROME HOME	New Britain	975 CORBIN AVE			
MONSIGNOR BOJNOWSKI MANOR, INC	New Britain	50 PULASKI ST			
AUTUMN LAKE HEALTHCARE AT NEW BRITAIN	New Britain	400 BRITTANY FARMS RD			X
CASSENA CARE AT NEW BRITAIN	New Britain	66 CLINIC DR			
NEW BRITAIN GENERAL HOSPITAL	New Britain	100 GRAND STREET			
HOSPITAL FOR SPECIAL CARE	New Britain	2150 CORBIN AVENUE			
New Britain Public Safety	New Britain	125 Columbus Blvd Hngr 3			
New Britain Police Detectives	New Britain	125 Columbus Blvd			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
NEW BRITAIN HIGH SCHOOL	New Britain	110 MILL ST.			
VANCE SCHOOL	New Britain	183 VANCE ST.			X
ST FRANCIS OF ASSISI MIDDLE SC	New Britain	30 PENDLETON ROAD			
HOLY CROSS SCHOOL	New Britain	221 FARMINGTON AVE.			
ST MATTHEWS LUTHERAN SCHOOL	New Britain	87 FRANKLIN SQ			
CENTER FOR EDUCATION/FAM CTRS	New Britain	370 LINWOOD ST			
SACRED HEART SCHOOL	New Britain	35 ORANGE STREET			
SMALLEY ACADEMY	New Britain	175 WEST ST.			
CHAMBERLAIN SCHOOL	New Britain	120 NEWINGTON AVE.			
LINCOLN SCHOOL	New Britain	145 STEELE ST.			X
SLADE MIDDLE SCHOOL	New Britain	183 STEELE ST.			X
NEW BRITAIN CENTER FOR SCHOOL READINESS	New Britain	183 STEELE ST.			X
GAFFNEY SCHOOL	New Britain	322 SLATER RD.			
E. C. GOODWIN TECHNICAL HIGH SCHOOL	New Britain	735 SLATER RD.			
DILORETO MAGNET SCHOOL	New Britain	732 SLATER RD.			
JEFFERSON SCHOOL	New Britain	140 HORSE PLAIN RD.			
HOLMES SCHOOL	New Britain	2150 STANLEY ST.			
PULASKI MIDDLE SCHOOL	New Britain	757 FARMINGTON AVE.			
ROOSEVELT MIDDLE SCHOOL	New Britain	40 GOODWIN ST.			
SMITH SCHOOL	New Britain	142 RUTHERFORD ST.			
NORTHEND SCHOOL	New Britain	160 BASSETT ST.			
New Britain Fire Department	New Britain	253 Beaver ST			
New Britain emergency Medical Services (NBEMS)	New Britain	225 Arch Street			
Fire Station 1	New Britain	253 Beaver Street			
Fire Station 2	New Britain	146 South Main Street			
Fire Station 4	New Britain	1085 Corbin Ave			
Fire Station 5	New Britain	915 Stanley Street			
Fire Station 7	New Britain	60 Hartford Road			
Fire Station 8	New Britain	2155 Corbin Ave			
VA Medical Center	Newington	555 Willard Ave			
Senior Center	Newington	120 Cedar St			
BEL-AIR MANOR NURSING & REHABILITATION CENTER	Newington	256 NEW BRITAIN AVE			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
JEFFERSON HOUSE	Newington	1 JOHN H STEWART DR			
NEWINGTON RAPID RECOVERY REHAB CENTER	Newington	240 CHURCH ST			
CEDARCREST HOSPITAL	Newington	525 RUSSELL ROAD			
Newington Police Dept	Newington	131 Cedar St			
ST MARY SCHOOL	Newington	652 WILLARD AVENUE			
RUTH CHAFFEE SCHOOL	Newington	160 SUPERIOR AVE.			
JOHN PATERSON SCHOOL	Newington	120 CHURCH ST.			
JOHN WALLACE MIDDLE SCHOOL	Newington	71 HALLERAN DR.			
ELIZABETH GREEN SCHOOL	Newington	30 THOMAS ST.			
MARTIN KELLOGG MIDDLE SCHOOL	Newington	155 HARDING AVE.			
NEWINGTON HIGH SCHOOL	Newington	605 WILLARD AVE.			
ANNA REYNOLDS SCHOOL	Newington	85 RESERVOIR RD.			
EMMANUEL CHRISTIAN ACADEMY	Newington	569 MAPLE HILL AVENUE			
Newington Volunteer Fire Department	Newington	1485 Main ST			
Company 1	Old Wethersfield	171 Main St			
APPLE REHAB FARMINGTON VALLEY	Plainville	269 FARMINGTON AVE			
PLAINVILLE WATER POLLUTION CONTROL AUTHORITY	Plainville	Cronk Road	X		X
Plainville Police Dept	Plainville	1 Central Sq	X		X
MIDDLE SCHOOL OF PLAINVILLE	Plainville	150 NORTHWEST DR.			
LOUIS TOFFOLON SCHOOL	Plainville	145 NORTHWEST DR.			
PREKINDERGARTEN PROGRAM	Plainville	47 ROBERT HOLCOMB WAY			
NW VILLAGE SCH-WHEELER CLINIC	Plainville	91 NORTHWEST DR	X		
GREAT BEGINNINGS	Plainville	195 East St			
PENNY'S PLAYGROUND OF LEARNING	Plainville	19 PINE ST			
FRANK T. WHEELER SCHOOL	Plainville	15 CLEVELAND MEMORIAL			
LINDEN STREET SCHOOL	Plainville	69 LINDEN ST.			
PLAINVILLE HIGH SCHOOL	Plainville	47 ROBERT HOLCOMB WAY			
Plainville Fire Department	Plainville	77 W Main ST		X	X
Plainville Municipal Center	Plainville	1 Central Square		X	X
Plainville Public Library	Plainville	56 E Main St			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
Great Beginnings II	Plainville	15 Cooke St			
Plainville Early Learning Center	Plainville	130 W Main St			
MAPLE VIEW HEALTH & REHABILITATION CENTER	Rocky Hill	856 MAPLE ST			
APPLE REHAB ROCKY HILL	Rocky Hill	45 ELM ST			
60 WEST	Rocky Hill	60 WEST ST			
BAL ROCKY HILL	Rocky Hill	1160 ELM STREET EXT			
BROOKDALE ROCKY HILL	Rocky Hill	60 COLD SPRING RD			
ATRIA GREENRIDGE PLACE	Rocky Hill	1 ELIZABETH CT			
Cora J. Belden Library	Rocky Hill	33 Church St			
Fire Station #2	Rocky Hill	52 New Britain Avenue			
Fire Station #1	Rocky Hill	739 Old Main Street			
THE METROPOLITAN DISTRICT - ROCKY HILL	Rocky Hill	80 Goff Brook Lane		X	
Rocky Hill Civil Defense Ofc	Rocky Hill	699 Old Main St			
VETERANS HOME AND HOSPITAL	Rocky Hill	287 WEST STREET			
Rocky Hill Police Dept	Rocky Hill	699 Old Main St			
DR. ORAN A. MOSER SCHOOL	Rocky Hill	10 SCHOOL ST.			
ALBERT D. GRISWOLD JUNIOR HIGH SCHOOL	Rocky Hill	144 BAILEY RD.			
MYRTLE H. STEVENS SCHOOL	Rocky Hill	322 ORCHARD ST.			
ROCKY HILL HIGH SCHOOL	Rocky Hill	50 CHAPIN AVE.			
WEST HILL SCHOOL	Rocky Hill	95 CRONIN DR.			
Rocky Hill VFD	Rocky Hill	3050 Main ST			
CT State Health Lab	Rocky Hill	395 West Street			
CNG natural gas storage facility	Rocky Hill	1376 Cromwell Ave			
MDC H2O Storage facility	Rocky Hill	R001 Whitewood Ave			
Algonquin Buckeye Gas line *	Rocky Hill	South to north along rail line			
VA Home & Hospital	Rocky Hill	287 West Street			
Waste Water Pollution Control	Rocky Hill	80 Goff Brook Lane			
Simsbury Public Library	Simsbury	725 Hopmeadow St			
Virginia Connolly	Simsbury	1600 Hopmeadow St			
MCLEAN HEALTH CENTER	Simsbury	75 GREAT POND RD			
GOVERNOR'S HOUSE	Simsbury	36 FIRETOWN RD			
MCLEAN HEALTH CENTER	Simsbury	75 GREAT POND RD			
Main Station	Simsbury	871 Hopmeadow			
West Simsbury Station	Simsbury	235 Farms Village Rd			
Bushy Hill Station	Simsbury	345 Bushy Hill Rd			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
Weatogue Station	Simsbury	251 Hopmeadow			X
Firetown Station	Simsbury	Firetown Road			
Tarrifville Station	Simsbury	7 Church St			
SIMSBURY	Simsbury	36 Drake Hill Road	X		X
Simsbury Police Community	Simsbury	933 Hopmeadow St			
ST MARY SCHOOL	Simsbury	946 HOPMEADOW STREET			
WESTMINSTER SCHOOL	Simsbury	995 HOPMEADOW STREET			X
THE COBB SCHOOL MONTESSORI	Simsbury	112 SAND HILL RD			
SIMSBURY HIGH SCHOOL	Simsbury	34 FARMS VILLAGE RD.			
CENTRAL SCHOOL	Simsbury	29 MASSACO ST.			
HENRY JAMES MEMORIAL SCHOOL	Simsbury	155 FIRETOWN RD.			
SQUADRON LINE SCHOOL	Simsbury	44 SQUADRON LINE RD.			
Simsbury Volunteer Fire Department	Simsbury	871 Hopmeadow ST			
TARIFFVILLE SCHOOL	Simsbury	42 WINTHROP ST.			
LATIMER LANE SCHOOL	Simsbury	33 MOUNTAIN VIEW RD.			
THE MASTER S SCHOOL	Simsbury	WESTLEDGE RD			
TOOTIN' HILLS SCHOOL	Simsbury	25 NIMROD RD.			
Public Works	Somers	93 Egypt Rd			
Police Department	Somers	451 Main St			
Kibbe Fuller Community Center	Somers	619 Main St			
Senior Center	Somers	19 Battle St			
Town Hall	Somers	600 Main St			
Woodcrest Senior Housing	Somers	71 Battle St #101			
Somers Group Home	Somers	14 Plymouth Rd			
Somers Public Library	Somers	2 Vision Blvd			
Osborn Correctional Institution	Somers	100 Bilton Rd			
Northern Correctional Institute	Somers	287 Bilton Rd	X		
Cybulski Correctional Institute	Somers	264 Bilton Rd			
Geissler's Supermarket	Somers	95 S Rd			
SOMERS	Somers	33 Quality Ave	X		
CONN DEPT OF CORRECTION'S HOSP	Somers	100 BILTON ROAD			
CCI/SOMERS - OSBORNE	Somers	100 BILTON ROAD			
SOMERS ELEMENTARY SCHOOL	Somers	NINTH DISTRICT RD.	X		

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
MABELLE B. AVERY MIDDLE SCHOOL	Somers	NINTH DISTRICT RD.	X		
SOMERS HIGH SCHOOL	Somers	NINTH DISTRICT RD.	X		
Somers Fire Department	Somers	400 Main ST			
THE GRAMMER SCHOOL	Somers	41 SCHOOL STREET			
EOC	South Windsor	1530 Sullivan Ave			
South Windsor Public Library	South Windsor	1550 Sullivan Ave			
BAL WINDSOR	South Windsor	432 BUCKLAND RD			
BROOKDALE SOUTH WINDSOR	South Windsor	1715 ELLINGTON RD			
RESIDENCE AT SOUTH WINDSOR FARMS, THE	South Windsor	200 DEMING ST			
UTC- Hydrogen Fuel Cell	South Windsor	195 Governors Highway			
Fire/EMS	South Windsor	232 West Road			
Community Center	South Windsor	105 Nevers Road			
Animal Control Shelter	South Windsor	124 Sullivan Avenue			
SOUTH WINDSOR	South Windsor	1 Vibert Road		X	
South Windsor Records/Criminal Recreation/Public Buildings Maintenance Headquarters	South Windsor	151 Sand Hill Rd			
ELI TERRY SCHOOL	South Windsor	91 AYERS RD.			
SOUTH WINDSOR HIGH SCHOOL	South Windsor	569 GRIFFIN RD.			
PHILIP R. SMITH SCHOOL	South Windsor	161 NEVERS RD.			
ORCHARD HILL SCHOOL	South Windsor	949 AVERY ST.			
TIMOTHY EDWARDS SCHOOL	South Windsor	350 FOSTER ST.			
PLEASANT VALLEY SCHOOL	South Windsor	100 ARNOLD WAY			
CENTRAL CT ADVENTIST VIRTUAL S	South Windsor	591 ELLINGTON RD.			
TRUTH BAPTIST ACADEMY	South Windsor	354 FOSTER ROAD			
KINDER CARE LEARNING CENTER	South Windsor	60 BURNHAM ST			
South Windsor Fire Department	South Windsor	494 CHAPEL ROAD			
Town Hall	South Windsor	1175 Ellington RD			
CREC School	South Windsor	1540 Sullivan Ave			
Town Garage	South Windsor	625 Chapel Rd			
Fire Department	South Windsor	157 Burgess Rd			
Engine Company 2	South Windsor	2379 Ellington Rd			
SOUTH END SCHOOL	Southington	128 W Main St		X	
JOHN F. KENNEDY MIDDLE SCHOOL	Southington	514 SOUTH END RD.			
STRONG SCHOOL	Southington	1071 SOUTH MAIN ST.			
PLANTSVILLE SCHOOL	Southington	820 MARION AVE.			
	Southington	70 CHURCH ST.			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
Senior Center/calendar house	Southington	388 Pleasant St			
SOUTHINGTON CARE CENTER	Southington	45 MERIDEN AVE			
ORCHARDS AT SOUTHINGTON, INC. THE	Southington	34 HOBART ST			
Water department	Southington	605 W Queen St			
SOUTHINGTON	Southington	12 Maxwell Noble Drive			
Southington Civil Defense	Southington	351 Main St			
BRADLEY MEM HOSP & HLTH CENTER	Southington	81 MERIDEN AVENUE			
Southington Police Dept	Southington	351 Main St			
ST THOMAS SCHOOL	Southington	133 BRISTOL STREET			
ST DOMINIC SCHOOL	Southington	1050 FLANDERS ROAD			
CENTRAL CHRISTIAN ACADEMY	Southington	1505 WEST ST			
DERYNOSKI ELEMENTARY SCHOOL	Southington	240 MAIN ST.			
THALBERG SCHOOL	Southington	145 DUNHAM RD.			
FLANDERS SCHOOL	Southington	100 VICTORIA DR.			
JOSEPH A. DEPAOLO MIDDLE SCHOOL	Southington	385 PLEASANT ST.			
HATTON SCHOOL	Southington	50 SPRING LAKE RD.			
SOUTHINGTON HIGH SCHOOL	Southington	720 PLEASANT ST.			
URBIN T. KELLEY SCHOOL	Southington	501 RIDGEWOOD RD.			
Southington Fire Department	Southington	310 N Main ST			
Stafford WPCA	Stafford	50 River Road	X		X
STAFFORDVILLE SCHOOL	Stafford	21 LYONS ROAD	X		
STAFFORD FIRE DEPT NO.1 INC	Stafford	9 COLBURN RD			
STAFFORD MIDDLE SCHOOL	Stafford	21 LEVINTHAL RUN			
BOROUGH ELEMENTARY SCHOOL	Stafford	36 PROSPECT ST.			
STAFFORD HIGH SCHOOL	Stafford	145 ORCUTTVILLE ROAD			
EARL M. WITT INTERMEDIATE SCHOOL	Stafford	20 HYDE PARK RD.			
WEST STAFFORD SCHOOL	Stafford	153 WEST STAFFORD RD.			
JOHNSON MEMORIAL HOSPITAL	Stafford	201 CHESTNUT HILL ROAD			
Stafford Police Dept	Stafford	21 Hyde Park Rd	X		
ALDEN BROOK SCHOOL INC.	Stafford	165 LEONARD RD			
ST EDWARD SCHOOL	Stafford	25 CHURCH ST			
West Stafford Fire Department	Stafford	49 Handel RD			
Hatheway House	Suffield	55 S Main St			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
Town Hall	Suffield	83 Mountain Rd			
Suffield Fire Department	Suffield	776 Thompsonville Rd			
Suffield Fire Company 2	Suffield	9 Ratley Rd			
Suffield Fire Company 3	Suffield	3 Copper Hill Rd			
Ambulance Building	Suffield	205 Bridge St			
Municipal Offices	Suffield	230C Mountain Road			
Senior Center	Suffield	145 Bridge St			
Suffield by the River	Suffield	7 CANAL RD			
Suffield House	Suffield	1 CANAL RD			
Bridge Street Elderly Housing	Suffield	44 Bridge Street			
Bridge Street Elderly Housing	Suffield	125 Bridge Street			
Bridge Street Elderly Housing	Suffield	133 Bridge Street			
King House Museum	Suffield	232 S Main St			
1st Baptist Church	Suffield	100 N Main St			
Hilltop Farm	Suffield	1616 Mapleton Ave			
EAGLE POINTE	Suffield	1 CANAL RD			
SUFFIELD	Suffield	844 East Street South			
Suffield Police Dept Dog Pound	Suffield	44 Ffyer PI			
PREKINDERGARTEN PROGRAM	Suffield	260 MOUNTAIN ROAD			
SUFFIELD MIDDLE SCHOOL	Suffield	350 MOUNTAIN RD.			
A. WARD SPAULDING SCHOOL	Suffield	945 MOUNTAIN RD.			
SUFFIELD HIGH SCHOOL	Suffield	350 MOUNTAIN RD.			
MCALISTER INTERMEDIATE SCHOOL	Suffield	260 MOUNTAIN ROAD			
SUFFIELD ACADEMY	Suffield	185 NORTH MAIN STREET			
WALKER/MACDOUGALL CORRECTIONAL INSTITUTE	Suffield	1153 EAST ST. SOUTH			
Suffield Fire Department	Suffield	73 Mountain Rd			
Suffield Police Dept	Suffield	911 Mountain Rd			
State Police	Tolland	21 Tolland Green			
State Police - Troop C	Tolland	1320 Tolland Stage Rd			
911 Center	Tolland	56 Tolland Stage Road			
Woodlake at Tolland	Tolland	26 SHENIPSIT LAKE RD			
Highway Garage	Tolland	118 Old Post Rd			
Senior Center	Tolland	674 Tolland Stage Rd			
Fire Training Center/EOC	Tolland	191 Merrow Rd			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
Old Post Village Elderly Housing	Tolland	763 Tolland Stage Rd			
Winding River Elderly Housing	Tolland	1127 Tolland Stage Rd			
Group Home	Tolland	59 Dunn Hill Rd			
Group Home	Tolland	295 Old Stafford Rd			
Group Home	Tolland	68 Susan Dr			
Tolland Town Law Enforcement	Tolland	21 Tolland Grn			
PRESCHOOL OF THE ARTS-TOLLAND	Tolland	684 TOLLAND STAGE RD			
PARKER MEMORIAL SCHOOL	Tolland	104 OLD POST RD.			
TOLLAND HIGH SCHOOL	Tolland	1 EAGLE HILL RD.			
TOLLAND MIDDLE SCHOOL	Tolland	96 OLD POST RD.			
BIRCH GROVE PRIMARY SCHOOL	Tolland	247 RHODES RD.			
Tolland Fire Department	Tolland	21 Tolland Green			
Tolland County Mutual Aid	Tolland	56 Tolland Grn			
NORTHEAST SCHOOL	Vernon	69 EAST ST.			
MAPLE STREET SCHOOL	Vernon	20 MAPLE ST.			
ROCKVILLE HIGH SCHOOL	Vernon	70 LOVELAND HILL			
ST JOSEPH	Vernon	41 WEST STREET			X
Bolton Road Senior Center	Vernon	135 Bolton Rd			
Town Hall Annex	Vernon	5-8 Park Place			
Parks and Recreation facility	Vernon	120 South St			
VERNON MANOR HEALTH CARE CENTER, LLC	Vernon	180 REGAN RD			
FOX HILL CENTER	Vernon	1253 HARTFORD TPKE			
VERNON	Vernon	100 Windsorville Road			X
SKINNER ROAD SCHOOL	Vernon	90 SKINNER RD.			
CENTER ROAD SCHOOL	Vernon	20 CENTER RD.			
VERNON CENTER MIDDLE SCHOOL	Vernon	777 HARTFORD TPKE.			
LAKE STREET SCHOOL	Vernon	201 LAKE ST.			
Vernon Fire Department	Vernon	15 Prospect ST			
Vernon Fire Department	Vernon	25 Nye ST			
Vernon Fire Department	Vernon	720 Hartford TPKE			
Vernon Fire Department	Vernon	Birch RD			
Vernon Fire Department	Vernon	100 Hartford TPKE			
Vernon Civil Defense	Vernon	725 Hartford Tpke			
ROCKVILLE GENERAL HOSPITAL	Vernon	31 UNION STREET			
Tolland County Sheriff	Vernon	69 Brooklyn St			X

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
Vernon Police Dept	Vernon	725 Hartford Tpke			
ST BERNARD SCHOOL	Vernon	20 SCHOOL ST			
Elmwood Community Center	West Hartford	1106 New Britain Ave			
Public Works	West Hartford	17 Brixton St			
HEBREW CENTER FOR HEALTH AND REHABILITATION	West Hartford	1 ABRAHMS BOULEVARD			
WEST HARTFORD HEALTH AND REHABILITATION CENTER	West Hartford	130 LOOMIS DR			
ST. MARY HOME	West Hartford	2021 ALBANY AVE			
THE RESERVOIR	West Hartford	1 EMILY WAY			
HUGHES HEALTH AND REHABILITATION, INC.	West Hartford	29 HIGHLAND ST			
BROOKDALE WEST HARTFORD	West Hartford	22 SIMSBURY RD			
HEBREW HEALTH CARE ASSISTED LIVING SERVICE AGENCY	West Hartford	1 ABRAHMS BLVD			
MCAULEY CENTER, INC.	West Hartford	275 STEELE RD			
BROOKDALE CHATFIELD	West Hartford	1 CHATFIELD DR			
Town Hall	West Hartford	50 South Main St			
HEBREW HOME AND HOSPITAL	West Hartford	1 ABRAHMS BOULEVARD			
West Hartford Police Dept	West Hartford	103 Raymond Rd			
DUFFY SCHOOL	West Hartford	95 WESTMINSTER ST.			
GENGRAS CENTER/ST JOSEPH COLLE	West Hartford	1678 ASYLUM AVE			
HEBREW HIGH SCH OF NEW ENGLAND	West Hartford	1244 N MAIN STREET			
INTENSIVE EDUCATION ACADEMY IN	West Hartford	840 NORTH MAIN STREET			
ST BRIGID SCHOOL	West Hartford	100 MAYFLOWER STREET			
ST THOMAS THE APOSTLE	West Hartford	25 DOVER ROAD			
ST TIMOTHY MIDDLE SCHOOL	West Hartford	225 KING PHILIP DRIVE			
NORTHWEST CATHOLIC HIGH SCHOOL	West Hartford	29 WAMPANOAG DRIVE			
AMERICAN SCHOOL FOR THE DEAF	West Hartford	139 NORTH MAIN STREET			
SOLOMON SCHECHTER	West Hartford	26 BUENA VISTA RD.			
MONTESSORI SCHOOL GREATER HART	West Hartford	141 NORTH MAIN ST		X	
BEN BRONZ ACADEMY	West Hartford	139 N MAIN ST BOATNER BLDG		X	
WEBB SCHOOL @ WEST HARTFORD	West Hartford	11 WAMPANOAG DR			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
KINGSWOOD-OXFORD SCHOOL	West Hartford	170 KINGSWOOD ROAD			
WOLCOTT SCHOOL	West Hartford	71 WOLCOTT RD.			
WEBSTER HILL SCHOOL	West Hartford	125 WEBSTER HILL BLVD.			
CONARD HIGH SCHOOL	West Hartford	110 BERKSHIRE RD.			
SEDGWICK MIDDLE SCHOOL	West Hartford	128 SEDGWICK RD.			
SMITH SCHOOL	West Hartford	64 ST. JAMES ST.			
CHARTER OAK SCHOOL	West Hartford	425 OAKWOOD AVENUE			
WHITING LANE SCHOOL	West Hartford	47 WHITING LN.			
MORLEY SCHOOL	West Hartford	77 BRETTON RD.			
BRISTOW MIDDLE SCHOOL	West Hartford	34 HIGHLAND STREET			
AIKEN SCHOOL	West Hartford	212 KING PHILIP DR.			
KING PHILIP MIDDLE SCHOOL	West Hartford	100 KING PHILIP DR.			
BUGBEE SCHOOL	West Hartford	1943 ASYLUM AVE.			
HALL HIGH SCHOOL	West Hartford	975 NORTH MAIN ST.			
NORFELDT SCHOOL	West Hartford	35 BARKSDALE RD.			
BRAEBURN SCHOOL	West Hartford	45 BRAEBURN RD.			
THE CEDAR COURT SCHOOL	West Hartford	27 PARK RD			
UNIVERSITY OF HARTFORD MULTIPLE INTELLIG	West Hartford	196 BLOOMFIELD AVE.			
West Hartford Fire Department	West Hartford	50 S Main ST			
Town Hall	Wethersfield	505 Silas Deane Hwy			
Community Center	Wethersfield	30 Greenfield St			
Ambulance Facility	Wethersfield	206 Prospect St			
Eleanor Buck Wolf Nature Center	Wethersfield	156 Prospect St			
Public Works	Wethersfield	100 Marsh St	X		
Wethersfield Police Dept	Wethersfield	505 Silas Deane Hwy			
ALFRED W. HANMER SCHOOL	Wethersfield	50 FRANCIS ST.			
SILAS DEANE MIDDLE SCHOOL	Wethersfield	551 SILAS DEANE HWY.			
WETHERSFIELD HIGH SCHOOL	Wethersfield	411 WOLCOTT HILL RD.			
CCMC SCHOOL	Wethersfield	170 RIDGE ROAD			
CORPUS CHRISTI SCHOOL	Wethersfield	581 SILAS DEANE HWY			
CHARLES WRIGHT SCHOOL	Wethersfield	186 NOTT ST.			
EMERSON-WILLIAMS SCHOOL	Wethersfield	461 WELLS RD.			
SAMUEL B. WEBB ELEMENTARY SCHOOL	Wethersfield	51 WILLOW ST.			
HIGHCREST SCHOOL	Wethersfield	95 HIGHCREST RD.			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
Wethersfield VFD	Wethersfield	171 Main ST			
Wethersfield VFD	Wethersfield	505 Silas Deane HWY			
Wethersfield VFD	Wethersfield	Keleher CT			
Wethersfield VFD	Wethersfield	188 Griswold RD			
CENTER SCHOOL	Willington	12 OLD FARMS RD.			
HALL MEMORIAL SCHOOL	Willington	111 RIVER RD.			
Town Hall	Willington	40 Old Farms Rd			
FD 2	Willington	143 River Rd			
FD 3	Willington	24 Old Farms Rd			
Kids Kingdom LLC	Willington	330 River Rd			
Kids Express Learning Center & Daycare	Willington	215 River Rd			
Willington Veterinary Clinic	Willington	195 River Rd			
Dog Pound	Willington	53 Hancock Rd			
Willington Senior Center & Senior Housing	Willington	60 Old Farms Rd			
Lyon Manor	Willington	140 River Rd			
Moos Meadow Camp Resort	Willington	28 Kechkes Rd			
Wilderness Lake Campground	Willington	150 Village Hill Rd			
Willington Public Library	Willington	7 Ruby Rd			
Willington Fire Department Inc. #1	Willington	426 River RD			
Town Hall	Windsor	275 Broad Street			
Windsor Volunteer Fire Department	Windsor	275 Broad Street			
Windsor Station	Windsor	340 Bloomfield Avenue			
Wilson Station	Windsor	50 Pine Lane			
Station 800	Windsor	1497 Poquonock Ave			
Station 850	Windsor	750 Rainbow Rd			
Station 900	Windsor	54 Basswood Rd			
Department of Public Works	Windsor	99 Dayhill Road			
LP Wilson Community Center	Windsor	330 Windsor Avenue			
Academy of Aerospace and Engineering	Windsor	1101 Kennedy Rd			
River Street School	Windsor	601 River St			
Windsor Animal Shelter	Windsor	970 Marshall Phelps Rd			
WINDSOR HEALTH AND REHABILITATION CENTER, LLC	Windsor	581 POQUONOCK AVE			
KIMBERLY HALL SOUTH	Windsor	1 EMERSON DR			
Ambulance Facility	Windsor	20 William St			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
THE METROPOLITAN DISTRICT - POQUONNOCK	Windsor	1222 Poquonock Ave			
Civil Defense	Windsor	275 Broad St			
Windsor Police Dept	Windsor	340 Bloomfield Ave			
WINDSOR HIGH SCHOOL	Windsor	50 SAGE PARK RD.			
ROGER WOLCOTT EARLY CHILD CENTER	Windsor	57 EAST WOLCOTT AVE.			
ST GABRIEL SCHOOL	Windsor	77 BLOOMFIELD AVENUE			
THE LOOMIS CHAFFEE SCHOOL	Windsor	4 BATCHELDER ROAD			X
MADINA ACADEMY	Windsor	1 MADINA DR			
WINDSOR MONTESSORI SCHOOL	Windsor	114 PALISADO AVE			
PRAISE, POWER ,-PRAYER CHR. SCH	Windsor	209 KENNEDY ROAD			
BRIGHT HORIZONS FAMILY SOLUTIO	Windsor	1045 DAY HILL RD			
TRINITY CHRISTIAN SCHOOL	Windsor	180 PARK AVE			
JOHN F. KENNEDY SCHOOL	Windsor	530 PARK AVE.			
POQUONOCK ELEMENTARY SCHOOL	Windsor	1760 POQUONOCK AVE.			
OLIVER ELLSWORTH SCHOOL	Windsor	730 KENNEDY AVE.			
CLOVER STREET SCHOOL	Windsor	57 CLOVER ST.			
SAGE PARK MIDDLE SCHOOL	Windsor	25 SAGE PARK RD.			
Windsor Volunteer Fire Department	Windsor	275 Broad ST			
Town Hall	Windsor Locks	50 Church St			
Safety Complex	Windsor Locks	4 Volunteer Drive			
Senior Center	Windsor Locks	41 Oak St			
Public Works	Windsor Locks	6 Stanton Rd	X		
Communication Tower	Windsor Locks	4 Volunteer Drive			
Windsor Locks Housing Authority	Windsor Locks	120 Southwest Ave			
Bickford Health Care Center	Windsor Locks	14 Main Street		X	
STONEBROOK VILLAGE AT WINDSOR LOCKS	Windsor Locks	550 OLD COUNTY RD			
WINDSOR LOCKS	Windsor Locks	1 Stanton Road			
Windsor Locks Police Dept	Windsor Locks	4 Volunteer Dr			
WINDSOR LOCKS MIDDLE SCHOOL	Windsor Locks	7 CENTER ST.			
NORTH STREET SCHOOL	Windsor Locks	325 NORTH ST.			
SOUTH ELEMENTARY SCHOOL	Windsor Locks	87 SOUTH ST.			
WINDSOR LOCKS HIGH SCHOOL	Windsor Locks	58 SOUTH ELM ST.			

Facility Name	Town	Address	100-Year Flood Zone	500-Year Flood Zone	Dam Breach Inundation Area
NEW ENGLAND PRESCH ACAD INC	Windsor Locks	1 FOX WOODS DRIVE			
CALVARY CHRISTIAN SCHOOL	Windsor Locks	470 ELM STREET			
Windsor Locks Fire Department	Windsor Locks	2 Volunteer DR			
Bradley International Airport Fire Dept	Windsor Locks	Bradley Intl Airport			

Appendix B

Historic Resources of the Capitol Region

Historic Resources Throughout the Capitol Region

Historic Sites within CROG Region	Town
White's Tavern	Andover
Avon Congregational Church	Avon
Hooker, Henry, House	Berlin
Kensington Grammar School--Jean E. Hooker High School	Berlin
Old Farm Schoolhouse	Bloomfield
Beardsley--Mix House	Bloomfield
Gillette, Francis, House	Bloomfield
Southwest District School	Bloomfield
Cone, Jared, House	Bolton
Oliver White Tavern	Bolton
Willimantic Elks Club	Columbia
Capron-Phillips House	Coventry
Parker-Hutchinson Farm	Coventry
Hale, Nathan, Homestead	Coventry
Brigham's Tavern	Coventry
Sprague, Elias, House	Coventry
Strong House	Coventry
Loomis--Pomeroy House	Coventry
Phelps, Ezekiel, House	East Granby
Viets' Tavern	East Granby
Gilman-Hayden House	East Hartford
St. John's Episcopal Church	East Hartford
Brewer, Selden, House	East Hartford
Bemont, Makens, House	East Hartford
First Congregational Church of East Hartford and Parsonage	East Hartford
St. John's Episcopal Church	East Windsor
East Windsor Academy	East Windsor
Kneseth Israel Synagogue	Ellington
Enfield Town Meetinghouse	Enfield
Stanley-Whitman House	Farmington
First Church of Christ	Farmington
Shade Swamp Shelter	Farmington
Tunxis Hose Firehouse	Farmington
Williams, Austin F., Carriagehouse and House	Farmington
West End Library	Farmington
Hollister, John, House	Glastonbury

Historic Sites within CROG Region	Town
Welles-Shipman-Ward House	Glastonbury
Welles, Gideon, House	Glastonbury
Kimberly Mansion	Glastonbury
Hale, Dr. Elizur, House	Glastonbury
Rowe and Weed Houses	Granby
Holcomb, Nathaniel, III, House	Granby
Holcomb, Judah, House	Granby
Cossitt, Frederick H., Library	Granby
Allen's Cider Mill	Granby
Hayes, Samuel II, House	Granby
Widows' Home	Hartford
Sts. Cyril and Methodius Church	Hartford
Polish National Home	Hartford
St. Paul's Methodist Episcopal Church	Hartford
Wethersfield Avenue Car Barn	Hartford
B.P.O. Elks Lodge	Hartford
Second Church of Christ	Hartford
Barbour, Lucius, House	Hartford
Union Baptist Church	Hartford
Fourth Congregational Church	Hartford
House at 140 and 144 Retreat Avenue	Hartford
Northam Memorial Chapel and Gallup Memorial Gateway	Hartford
Pomeroy, Arthur G., House	Hartford
Church of the Good Shepherd and Parish House	Hartford
Day House	Hartford
Hartford Union Station	Hartford
Lyman House	Hartford
Perkins-Clark House	Hartford
Keney Tower	Hartford
Charter Oak Bank Building	Hartford
James Pratt Funeral Service	Hartford
Hooker, John and Isabella, House	Hartford
Building at 83-85 Sigourney Street	Hartford
Building at 142 Collins Street	Hartford
Butler-McCook Homestead	Hartford
Day-Taylor House	Hartford
Wadsworth Atheneum	Hartford

Historic Sites within CROG Region	Town
Cheney Building	Hartford
Hyde-St. John House	Hartford
Stackpole, Moore, and Tryon Building	Hartford
Temple Beth Israel	Hartford
Connecticut State Capitol	Hartford
Armsmear	Hartford
Connecticut Statehouse	Hartford
Twain, Mark, House	Hartford
Saint Anthony Hall	Hartford
Webster Memorial Building	Hartford
Building at 136-138 Collins Street	Hartford
Day, Calvin, House	Hartford
Barnard, Henry, House	Hartford
Connecticut State Library and Supreme Court Building	Hartford
Dillon Building	Hartford
Apartment at 49-51 Spring Street	Hartford
House at 36 Forest Street	Hartford
Batterson Block	Hartford
Myers and Gross Building	Hartford
Isham-Terry House	Hartford
Mather Homestead	Hartford
Judd and Root Building	Hartford
Hartford Club	Hartford
Footguard Hall	Hartford
First National Bank Building	Hartford
Christ Church	Hartford
Colt, James B., House	Hartford
First Church of Christ and the Ancient Burying Ground	Hartford
Linke, William L., House	Hartford
Spencer House	Hartford
U. S. Post Office and Federal Building	Hartford
Kellogg, Gen. Martin, House	Hartford
Engine Company 2 Fire Station	Hartford
Engine Company 6 Fire Station	Hartford
Engine Company 9 Fire Station	Hartford
Engine Company 15 Fire Station	Hartford
Engine Company 16 Fire Station	Hartford

Historic Sites within CROG Region	Town
Royal Typewriter Company Building	Hartford
Stowe, Harriet Beecher, House	Hartford
Congress Street Historic District (Boundary Increase)	Hartford
Windsor Avenue Congregational Church	Hartford
Simpson, Dr. Frank T., House	Hartford
Metropolitan African Methodist Episcopal Zion Church	Hartford
Johnson, Wilfred X., House	Hartford
Barlow, Boce W., Jr., House	Hartford
Austin, A. Everett, House	Hartford
Chevy Lomday Mishnayes Synagogue	Hartford
Beth Hamedrash Hagodol Synagogue	Hartford
State Arsenal and Armory	Hartford
Butler, Roger, House	Hartford
Hartford Electric Light Company Maple Avenue Sub-Station	Hartford
Canty, Marietta, House	Hartford
Southern New England Telephone Company Building	Hartford
Phoenix Life Insurance Company Building	Hartford
Ambassador Apartments	Hartford
North-West School	Hartford
Underwood Computing Machine Company Factory	Hartford
Sigourney Square Historic District (Boundary Increase II)	Hartford
Hotel America	Hartford
Post, Augustus, House	Hebron
US Post Office--Manchester Main	Manchester
Woodbridge Farmstead	Manchester
Williams, Eleazer, House	Mansfield
Marlborough Tavern	Marlborough
Marlborough Congregational Church	Marlborough
Burritt Hotel	New Britain
Holmes, Francis H., House	New Britain
Washington School	New Britain
New Britain Opera House	New Britain
South Congregational Church	New Britain

Historic Sites within CROG Region	Town
St. Mary's Parochial School	New Britain
Tephereth Israel Synagogue	New Britain
Masonic Temple	New Britain
Sloper--Wesoly House	New Britain
Commercial Trust Company Building	New Britain
Erwin Home for Worthy and Indigent Women	New Britain
Trinity Methodist Episcopal Church	New Britain
First Lutheran Church of the Reformation	New Britain
Commercial Trust Company Building	New Britain
Kelsey, Enoch, House	Newington
Willard Homestead	Newington
Newington Junction Railroad Depot	Newington
Robbins, Unni II, House	Newington
Norton, Charles H., House	Plainville
Congregational Church of Plainville	Plainville
Academy Hall	Rocky Hill
Rocky Hill Congregational Church	Rocky Hill
Robbins, John, House	Rocky Hill
Simsbury Bank and Trust Company Building	Simsbury
Simsbury Railroad Depot	Simsbury
Massacoe Forest Pavilion	Simsbury
Phelps, Capt. Elisha, House	Simsbury
Humphrey, John, House	Simsbury
Darling, Robert and Julia, House	Simsbury
Simsbury Townhouse	Simsbury
Eno Memorial Hall	Simsbury
Grant, Ebenezer, House	South Windsor
Elmore Houses	South Windsor
Elmore Houses	South Windsor
Webster, Horace, Farmhouse	Southington
Frost, Levi B., House	Southington
West Street School	Southington
Blakeslee Forging Company	Southington
Pultz & Walkley Company	Southington
Clark Brothers Factory No. 1	Southington
Clark Brothers Factory No. 2	Southington
Hurwood Company	Southington

Historic Sites within CROG Region	Town
Peck, Stow & Wilcox Factory	Southington
Moore, Roswell, II, House	Southington
Andrews, Luman, House	Southington
Barnes--Frost House	Southington
Barnes, Selah, House	Southington
Clark, Avery, House	Southington
Cowles, Capt. Josiah, House	Southington
Evans, Ebenezer, House	Southington
Grannis, Stephen, House	Southington
Hart, Timothy, House	Southington
Porter, Dr. J., House	Southington
Skelton, Dr. Henry, House	Southington
Wightman, Rev. John, House	Southington
Wightman, Valentine, House	Southington
Woodruff House	Southington
Woodruff, Ezekiel, House	Southington
Woodruff, Urbana, House	Southington
Southington Public Library	Southington
House at 590 West Street	Southington
House at 1010 Shuttle Meadow Road	Southington
Root, Jonathan, House	Southington
Woodruff, Jotham, House	Southington
Atwater Manufacturing Company	Southington
Woodruff, Capt. Samuel, House	Southington
Bradley, Icabod, House	Southington
Smith, H. D., Company Building	Southington
King, Alexander, House	Suffield
Hatheway House	Suffield
Fuller, John, House	Suffield
King's Field House	Suffield
Lewis--Zukowski House	Suffield
Cady, John, House	Tolland
Tolland County Courthouse	Tolland
Saxony Mill	Vernon
Old Rockville High School and East School	Vernon
Florence Mill	Vernon
Webster, Noah, Memorial Library	West Hartford
Spanish House, The	West Hartford
Morley, Edward W., House	West Hartford

Historic Sites within CROG Region	Town
Webster, Noah, Birthplace	West Hartford
Butler, James, House	West Hartford
Colton, Benjamin, House	West Hartford
Gillett, Asa, House	West Hartford
Seymour, Elisha, Jr., House	West Hartford
Stanley--Woodruff--Allen House	West Hartford
Steele, Allyn, House	West Hartford
Wells, John, Jr., House	West Hartford
Farnsworth, Samuel, House	West Hartford
Whitman House	West Hartford
House at 847 Main Street, North	West Hartford
Goodman, Timothy, House	West Hartford
Hooker, Sarah Whitman, House	West Hartford
Brace, Moses--Uriah Cadwell House	West Hartford
Whiting Homestead	West Hartford
Hosmer, Daniel, House	West Hartford
Beach, Charles E., House	West Hartford
Temple Beth Israel	West Hartford
Buttolph-Williams House	Wethersfield
Webb, Joseph, House	Wethersfield
Deane, Silas, House	Wethersfield
Moore, Deacon John, House	Windsor
Bissell Tavern-Bissell's Stage House	Windsor
Fitch, John, School	Windsor
Former Fire Station	Windsor
Case, Benomi, House	Windsor
Barber, Giles, House	Windsor
House at 736 Palisado Avenue	Windsor
House at 44 Court Street	Windsor
House at 130 Hayden Station Road	Windsor
House at 111 Maple Avenue	Windsor
Hathaways Store	Windsor
Payne, Daniel, House	Windsor
Moore, Edward and Ann, House	Windsor
Mills, Timothy Dwight, House	Windsor
Loomis, Ira, Jr., House	Windsor
Loomis, Gordon, House	Windsor
Loomis, George G., House	Windsor
Loomis, Col. James, House	Windsor

Historic Sites within CROG Region	Town
Loomis, Capt. James, House	Windsor
Harvey, William H., House	Windsor
Hartford & New Haven Railroad--Freight Depot	Windsor
Hartford & New Haven Railroad Depot	Windsor
Sweetland, Sophia, House	Windsor
Stony Hill School	Windsor
Phelps, Eli, House	Windsor
Shelton, William, House	Windsor
Murphy, Patrick, House	Windsor
Magill, Henry, House	Windsor
Chapman, Taylor, House	Windsor
Ellsworth, Horace H., House	Windsor
Hayden, Capt. Nathaniel, House	Windsor
Allyn, Capt. Benjamin, II, House	Windsor
Mills, Elijah, House	Windsor
Mills, Oliver W., House	Windsor
Chaffee, Hezekiah, House	Windsor
First Church Parsonage	Windsor
Grace Church Rectory	Windsor
Ellsworth, Oliver, Homestead	Windsor
Windsor Locks Passenger Station	Windsor Locks
Memorial Hall	Windsor Locks
Pinney, David, House and Barn	Windsor Locks

Historic Sites within 100 Year Flood Zone	Town
Willimantic Elks Club	Columbia
Capron-Phillips House	Coventry
Gilman-Hayden House	East Hartford
Hollister, John, House	Glastonbury
Congregational Church of Plainville	Plainville
Robbins, John, House	Rocky Hill
Massacoe Forest Pavilion	Simsbury
Clark Brothers Factory No. 2	Southington
Hurwood Company	Southington
Peck, Stow & Wilcox Factory	Southington
Woodruff, Jotham, House	Southington
Hathaways Store	Windsor

Historic Sites within 100 Year Flood Zone	Town
Hayden, Capt. Nathaniel, House	Windsor

Historic Sites within 500 Year Flood Zone	Town
Ellsworth, Oliver, Homestead	Windsor
First Church Parsonage	Windsor
Windsor Locks Passenger Station	Windsor Locks

Historic Sites within Dam Breach Inundation Area	Town
Southwest District School	Bloomfield
Tunxis Hose Firehouse	Farmington
West End Library	Farmington
Congregational Church of Plainville	Plainville
Simsbury Railroad Depot	Simsbury
Frost, Levi B., House	Southington
Saxony Mill	Vernon
Florence Mill	Vernon
Case, Benomi, House	Windsor

Cultural Resource Structures within the CRCOG Region	Town
Enfield Canal	East Windsor
Enfield Canal	Enfield
Mansfield Hollow Dam	Mansfield
Enfield Canal	Suffield
Enfield Canal	Windsor Locks

Cultural Resource Structures Partially in FEMA Flood Zone	Town
Enfield Canal	East Windsor
Enfield Canal	Enfield
Mansfield Hollow Dam	Mansfield
Enfield Canal	Suffield
Enfield Canal	Windsor Locks

Cultural Resource Sites within the CROG Region	Town
Hubbard Park	Berlin
Bushnell Park	Hartford
Elizabeth Park	Hartford
Old North Cemetery	Hartford
Mansfield Center Cemetery	Mansfield
Walnut Hill Park	New Britain
Hubbard Park	Southington
Elizabeth Park	West Hartford

Cultural Resource Sites that Partially intersect the FEMA Flood Zone	Town
Hubbard Park	Berlin
Elizabeth Park	Hartford
Hubbard Park	Southington
Elizabeth Park	West Hartford

Cultural Resource Sites that Partially Intersect CT Dam Breach Area	Town
Hubbard Park	Berlin

NHRP Districts within the CROG Region	Town
Heublein Tower	Avon
Kelsey, Ezekiel, House	Berlin
Connecticut General Life Insurance Company Headquarters	Bloomfield
Filley, Capt. Oliver, House	Bloomfield
Heublein Tower	Bloomfield
Thompson, William H., Farmstead	East Windsor
Bigelow-Hartford Carpet Mills	Enfield
Cowles, Gen. George, House	Farmington
Hill--Stead	Farmington
Coult, Abraham, House	Glastonbury
Bull, Amos, House	Hartford
Capewell Horse Nail Company	Hartford

NHRP Districts within the CROG Region	Town
Children's Village of the Hartford Orphan Asylum	Hartford
Engine Company 1 Fire Station	Hartford
Hartford Seminary Foundation	Hartford
Municipal Building	Hartford
Swift, M. and Sons Company	Hartford
Washington Street School	Hartford
Burnham, Edward L., Farm	Manchester
Farwell Barn	Mansfield
Newington Junction West Historic District	Newington
Belden, Horace, School and Central Grammar School	Simsbury
Eno, Amos, House	Simsbury
Heublein Tower	Simsbury
Babb's Beach	Suffield
Gothic Cottage	Suffield
Mount St. Joseph Academy	West Hartford
Pinney, David, House and Barn (Boundary Increase)	Windsor Locks

NHRP Districts that Partially Intersect the FEMA Flood Zone	Town
Children's Village of the Hartford Orphan Asylum	Hartford
Coult, Abraham, House	Glastonbury
Hartford Seminary Foundation	Hartford
Newington Junction West Historic District	Newington
Thompson, William H., Farmstead	East Windsor

NHRP Districts that Minimally Intersect the FEMA Flood Zone	Town
Bigelow-Hartford Carpet Mills	Enfield
Filley, Capt. Oliver, House	Bloomfield

CT Local Historic Districts within the CROG Region	Town
Berlin Historic District	Berlin
Canton Center Historic District	Canton
Collinsville Historic District	Canton
Naubuc Avenue Historic District	East Hartford
Enfield Historic District	Enfield
Unionville Historic District	Farmington
Avenue Historic District	Farmington
Clover Pinney Park Historic District	Farmington
Main Street Historic District	Farmington
Merriman Street Historic District	Farmington
Farmington Main Street Historic District	Farmington
School Street Historic District	Farmington
Lovely-Main Street Historic District	Farmington
Glastonbury Historic District	Glastonbury
Grandview Terrace Boulevard Historic District	Hartford
George Keller Historic District	Hartford
Ridgefield Street Historic District	Hartford
Spring Hill Historic District	Mansfield
Mansfield Hollow Historic District	Mansfield
Mansfield Center Historic District	Mansfield
East Weatogue Historic District	Simsbury
South Windsor Historic District	South Windsor
Main Street Historic District	Suffield
Hastings Hill Historic District	Suffield
Tolland Green Historic District	Tolland
Talcottville Historic District	Vernon
West Hill Drive Historic District	West Hartford
Buena Vista Historic District	West Hartford
Boulevard-Raymond Road Historic District	West Hartford
Old Wethersfield Historic District	Wethersfield
Willington Common Historic District	Willington
Palisado Historic District	Windsor

CT Local Historic Districts that Partially Intersect the Dam Breach Inundation Area	Town
Berlin Historic District	Berlin
Collinsville Historic District	Canton
Unionville Historic District	Farmington
Avenue Historic District	Farmington
Clover Pinney Park Historic District	Farmington
Main Street Historic District	Farmington
Farmington Main Street Historic District	Farmington
School Street Historic District	Farmington
Lovely-Main Street Historic District	Farmington
East Weatogue Historic District	Simsbury
Palisado Historic District	Windsor

CT Local Historic Districts that Partially Intersect the FEMA Flood Zones	Town
Main Street Historic District	Suffield
Naubuc Avenue Historic District	East Hartford
Unionville Historic District	Farmington
Avenue Historic District	Farmington
Old Wethersfield Historic District	Wethersfield
Canton Center Historic District	Canton
Collinsville Historic District	Canton
South Windsor Historic District	South Windsor
Glastonbury Historic District	Glastonbury
Palisado Historic District	Windsor
Talcottville Historic District	Vernon
Farmington Main Street Historic District	Farmington
Mansfield Hollow Historic District	Mansfield
Mansfield Center Historic District	Mansfield
East Weatogue Historic District	Simsbury
Buena Vista Historic District	West Hartford
Boulevard-Raymond Road Historic District	West Hartford

Appendix C

HAZUS-HM Documentation

Hazus-MH: Flood Global Risk Report

Region Name: HrtfrdCTv4_100yrDG

Flood Scenario: InterpShape100yrDG

Print Date: Monday, October 01, 2018

Disclaimer:

This version of Hazus utilizes 2010 Census Data.

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.



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General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- Connecticut

Note:

Appendix A contains a complete listing of the counties contained in the region .

The geographical size of the region is 751 square miles and contains 14,111 census blocks. The region contains over 351 thousand households and has a total population of 894,014 people (2010 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B .

There are an estimated 291,318 buildings in the region with a total building replacement value (excluding contents) of 120,075 million dollars (2010 dollars). Approximately 89.99% of the buildings (and 70.68% of the building value) are associated with residential housing.



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Building Inventory

General Building Stock

Hazus estimates that there are 291,318 buildings in the region which have an aggregate total replacement value of 120,075 million (2014 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure (\$1000)	Percent of Total
Residential	84,874,742	70.7%
Commercial	23,971,060	20.0%
Industrial	6,495,523	5.4%
Agricultural	336,949	0.3%
Religion	1,748,402	1.5%
Government	940,267	0.8%
Education	1,707,949	1.4%
Total	120,074,892	100.0%

Building Exposure by Occupancy Type for the Study Region
(\$1000's)

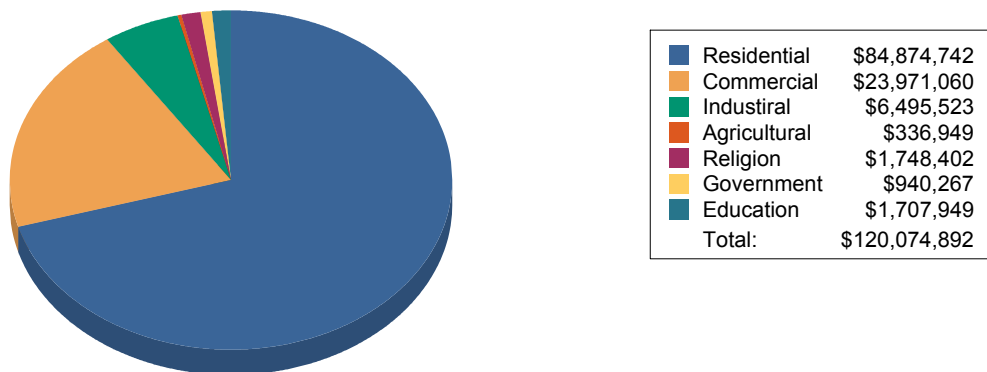
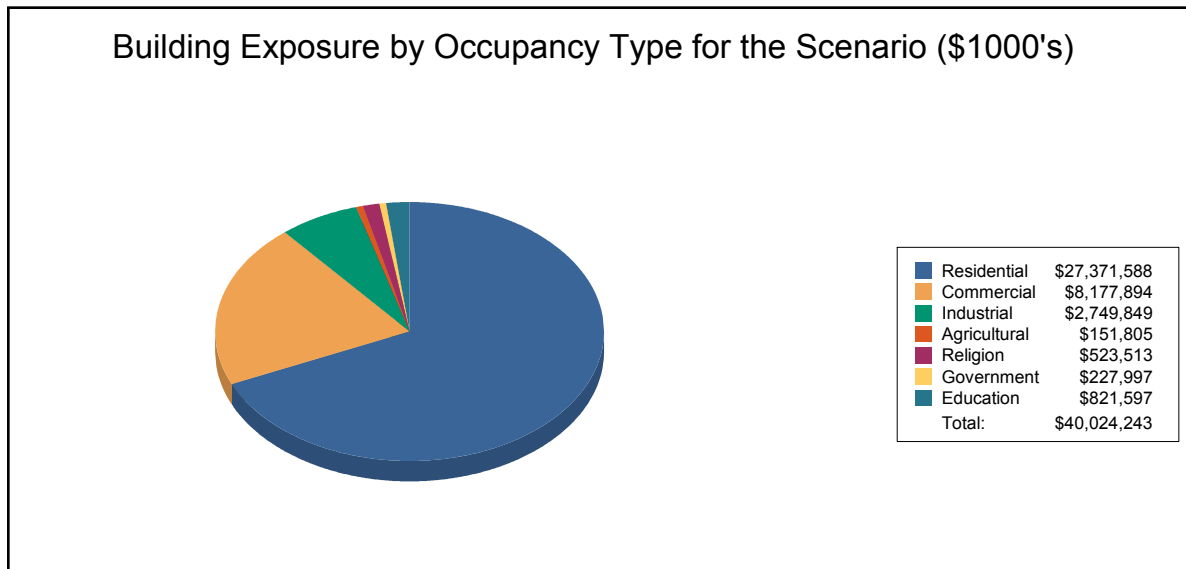


Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure (\$1000)	Percent of Total
Residential	27,371,588	68.4%
Commercial	8,177,894	20.4%
Industrial	2,749,849	6.9%
Agricultural	151,805	0.4%
Religion	523,513	1.3%
Government	227,997	0.6%
Education	821,597	2.1%
Total	40,024,243	100.0%



Essential Facility Inventory

For essential facilities, there are 12 hospitals in the region with a total bed capacity of 3,036 beds. There are 362 schools, 51 fire stations, 37 police stations and 8 emergency operation center.

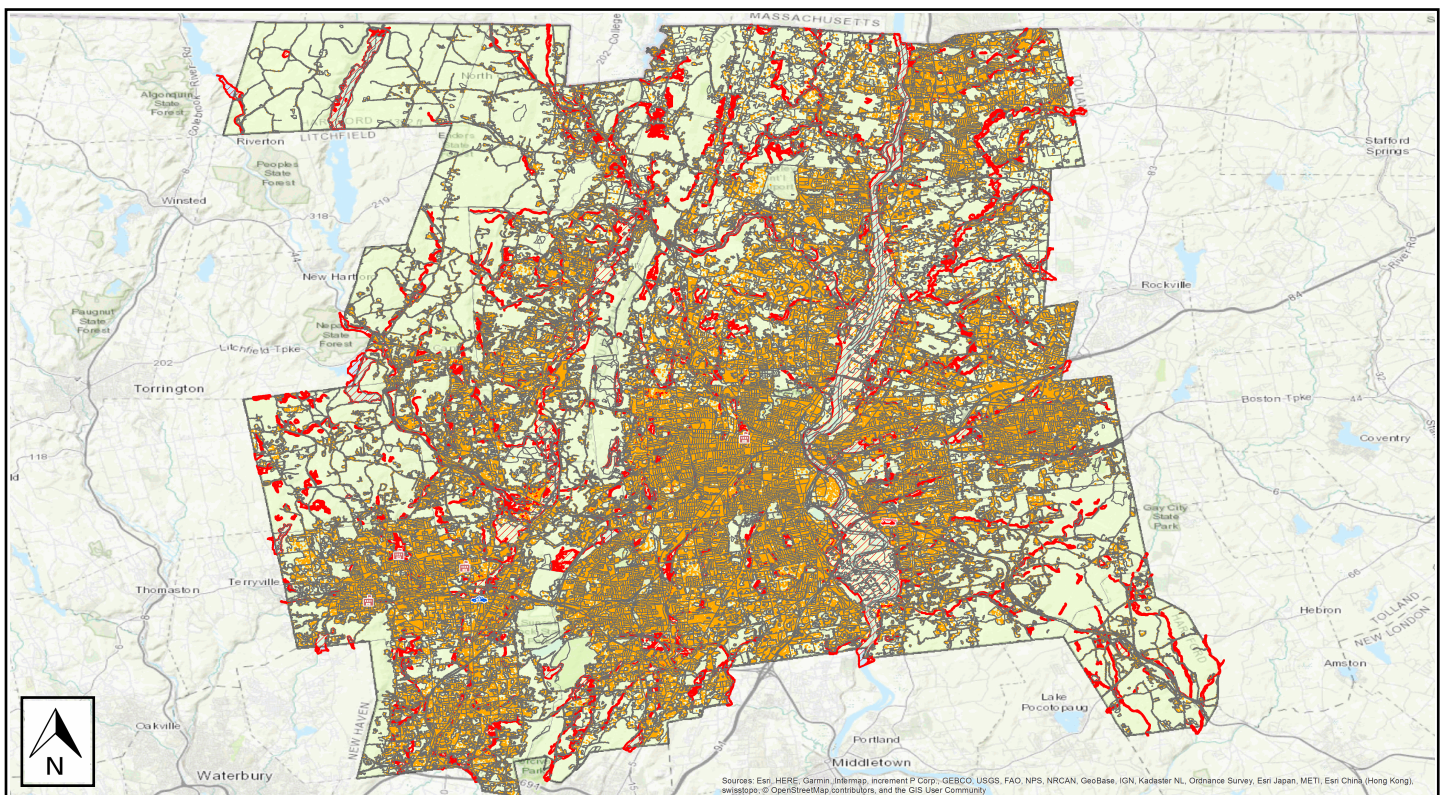
Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	HrtfrdCTv4_100yrDG
Scenario Name:	InterpShape100yrDG
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

Study Region Overview Map

Illustrating scenario flood extent, as well as exposed essential facilities and total exposure



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Building Damage

General Building Stock Damage

Hazus estimates that about 1,701 buildings will be at least moderately damaged. This is over 72% of the total number of buildings in the scenario. There are an estimated 382 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Total Economic Loss (1 dot = \$300K) Overview Map

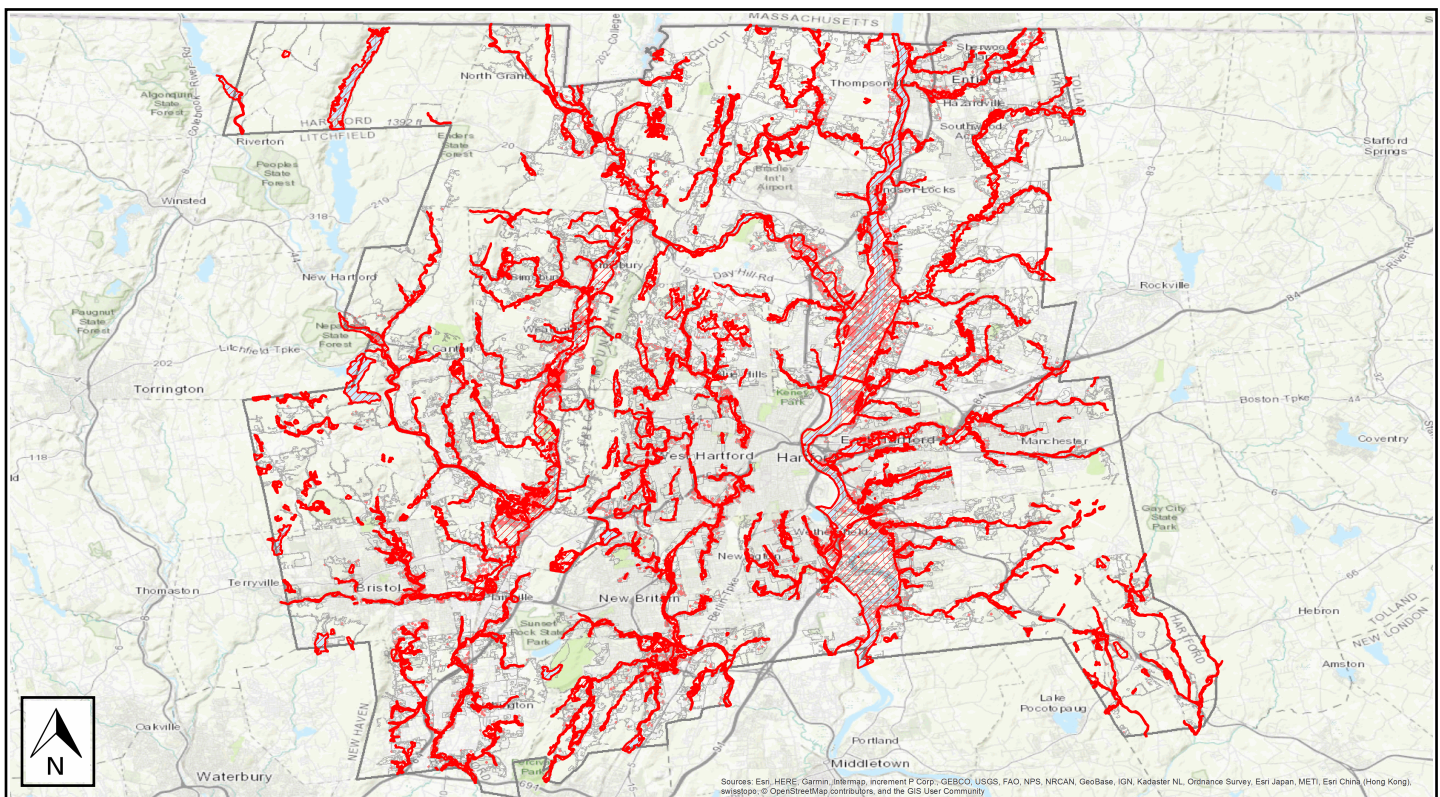


Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	2	22.22	7	77.78	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	1,090	39.17	771	27.70	293	10.53	142	5.10	105	3.77	382	13.73
Total	1,092		779		293		142		105		382	

Counts By Damage Level

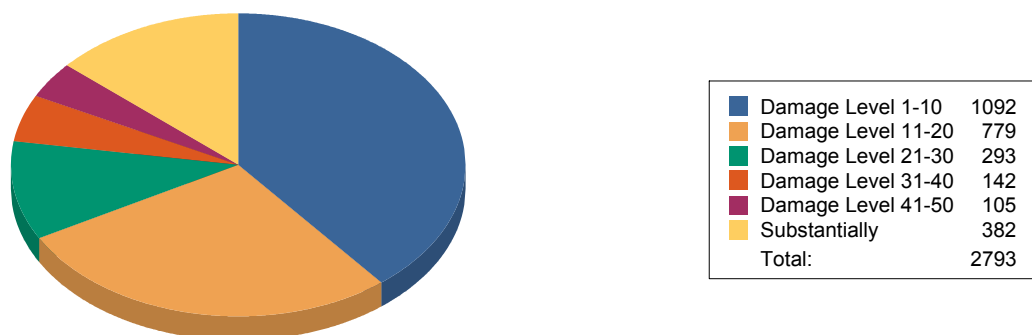


Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0	0	0	0	0	0	0	0	0	0	0
ManufHousing	0	0	0	0	0	0	0	0	0	0	75	100
Masonry	5	42	4	33	1	8	0	0	0	0	2	17
Steel	2	33	4	67	0	0	0	0	0	0	0	0
Wood	1,082	40	766	28	292	11	142	5	105	4	304	11



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Essential Facility Damage

Before the flood analyzed in this scenario, the region had 3,036 hospital beds available for use. On the day of the scenario flood event, the model estimates that 3,036 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	51	1	0	1
Hospitals	12	0	0	0
Police Stations	37	1	0	1
Schools	362	4	0	3

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.



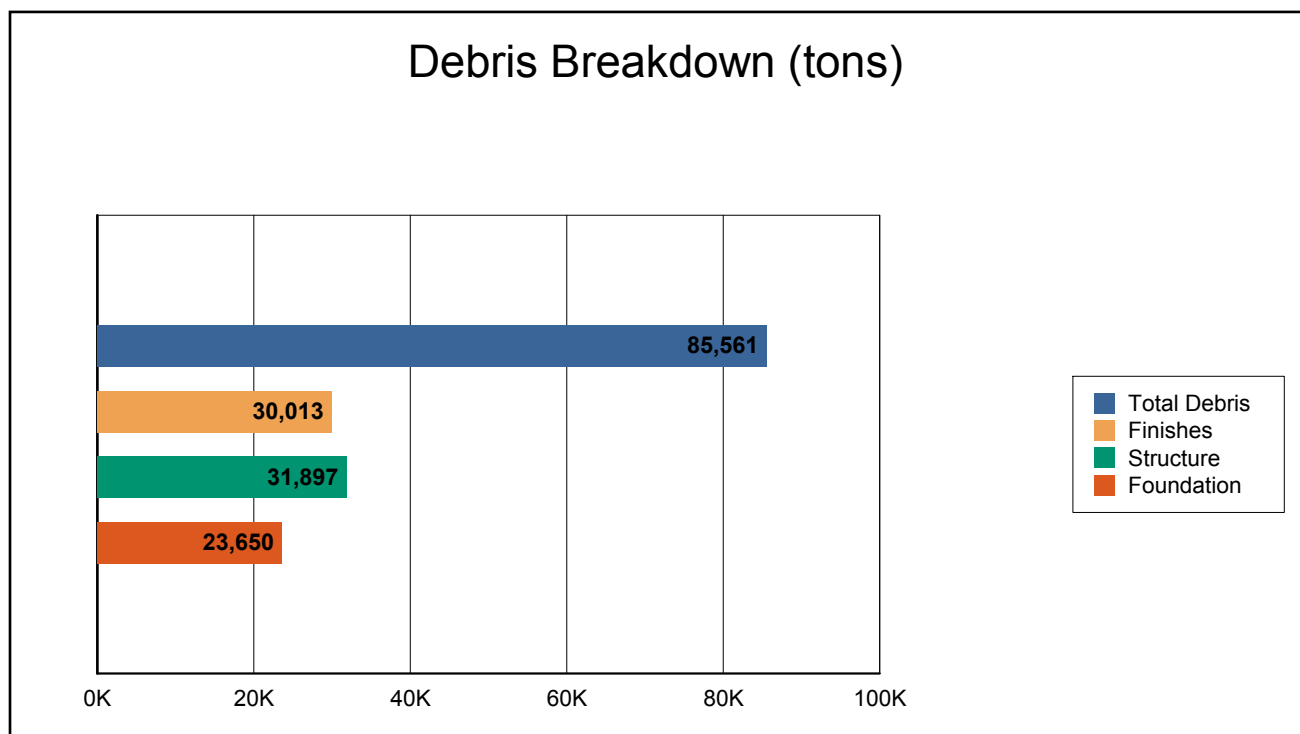
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Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

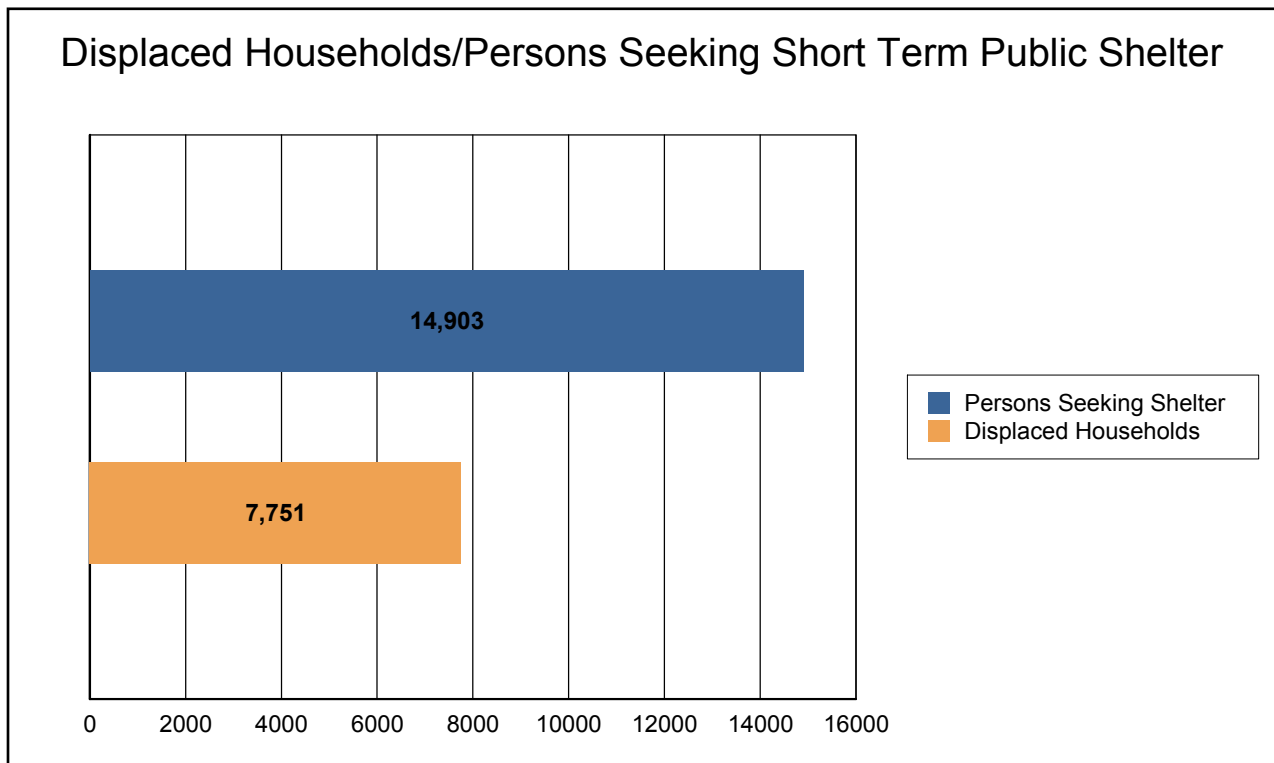


The model estimates that a total of 85,561 tons of debris will be generated. Of the total amount, Finishes comprises 35% of the total, Structure comprises 37% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 3,422 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 7,751 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 14,903 people (out of a total population of 894,014) will seek temporary shelter in public shelters.



Economic Loss

The total economic loss estimated for the flood is 1,447.30 million dollars, which represents 3.62 % of the total replacement value of the scenario buildings.

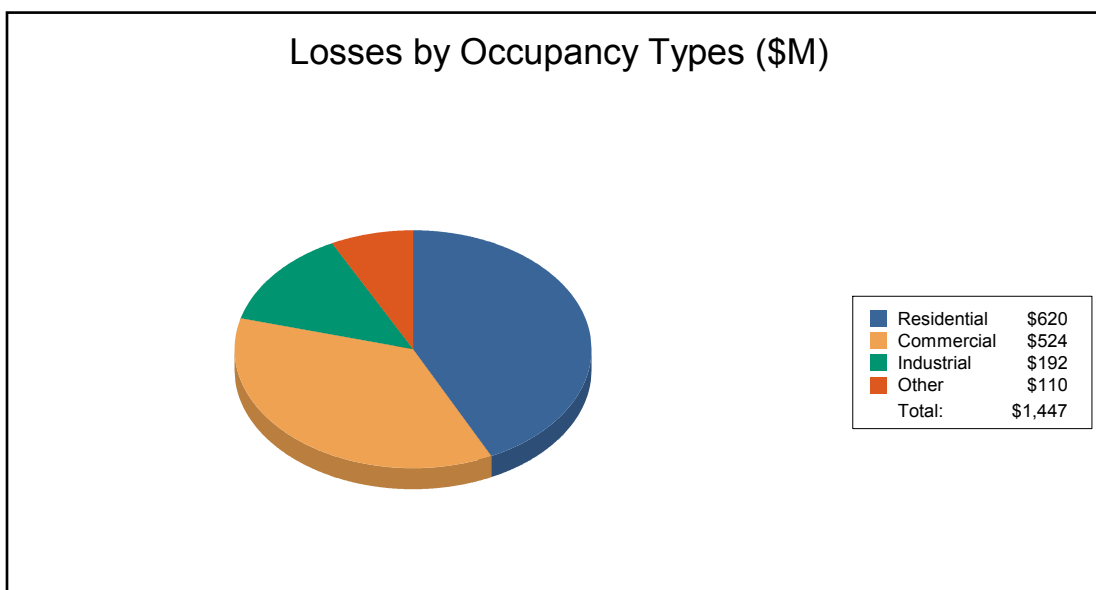
Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 1,441.12 million dollars. 0% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 42.86% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates
(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	411.06	151.14	52.96	20.60	635.75
	Content	208.67	363.44	122.85	86.90	781.85
	Inventory	0.00	5.90	16.64	0.98	23.52
	Subtotal	619.73	520.48	192.44	108.47	1,441.12
Business Interruption						
	Income	0.02	1.70	0.02	0.17	1.90
	Relocation	0.42	0.26	0.01	0.06	0.74
	Rental Income	0.10	0.13	0.00	0.01	0.24
	Wage	0.07	1.72	0.01	1.50	3.30
	Subtotal	0.61	3.81	0.04	1.73	6.18
ALL	Total	620.34	524.29	192.48	110.20	1,447.30





Appendix A: County Listing for the Region

- Connecticut
- Hartford



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Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
Connecticut				
Hartford	894,014	84,874,742	35,200,150	120,074,892
Total	894,014	84,874,742	35,200,150	120,074,892
Total Study Region	894,014	84,874,742	35,200,150	120,074,892



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Hazus-MH: Flood Global Risk Report

Region Name: CTTIndV4100yrOldDG

Flood Scenario: YR100DGRun

Print Date: Monday, October 01, 2018

Disclaimer:

This version of Hazus utilizes 2010 Census Data.

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.



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General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- Connecticut

Note:

Appendix A contains a complete listing of the counties contained in the region .

The geographical size of the region is 417 square miles and contains 3,226 census blocks. The region contains over 54 thousand households and has a total population of 152,691 people (2010 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B .

There are an estimated 51,295 buildings in the region with a total building replacement value (excluding contents) of 18,429 million dollars (2010 dollars). Approximately 91.58% of the buildings (and 82.14% of the building value) are associated with residential housing.



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Building Inventory

General Building Stock

Hazus estimates that there are 51,295 buildings in the region which have an aggregate total replacement value of 18,429 million (2014 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure (\$1000)	Percent of Total
Residential	15,136,568	82.1%
Commercial	1,984,893	10.8%
Industrial	606,700	3.3%
Agricultural	94,839	0.5%
Religion	198,207	1.1%
Government	94,655	0.5%
Education	312,753	1.7%
Total	18,428,615	100.0%

Building Exposure by Occupancy Type for the Study Region
(\$1000's)

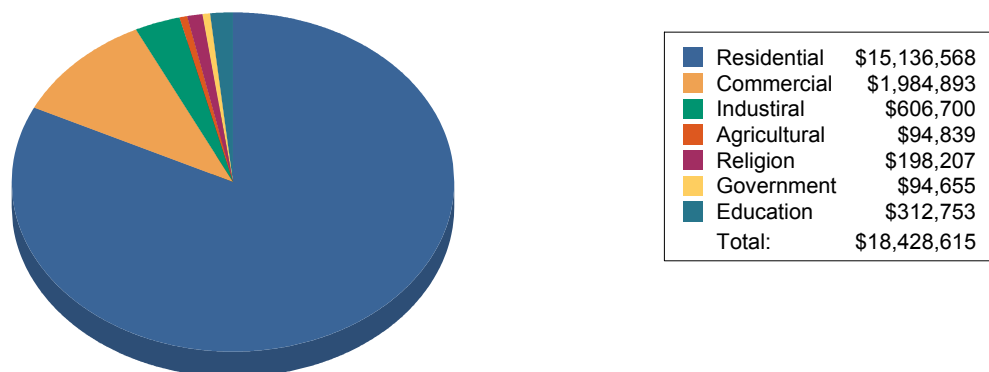
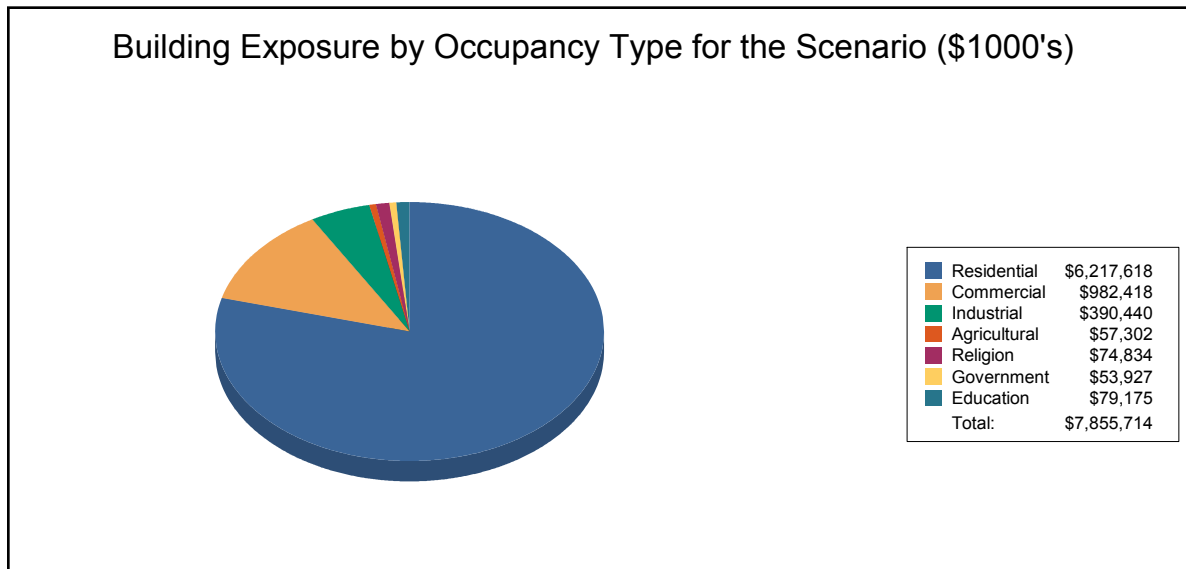


Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure (\$1000)	Percent of Total
Residential	6,217,618	79.1%
Commercial	982,418	12.5%
Industrial	390,440	5.0%
Agricultural	57,302	0.7%
Religion	74,834	1.0%
Government	53,927	0.7%
Education	79,175	1.0%
Total	7,855,714	100.0%



Essential Facility Inventory

For essential facilities, there are 4 hospitals in the region with a total bed capacity of 224 beds. There are 66 schools, 22 fire stations, 10 police stations and 3 emergency operation center.

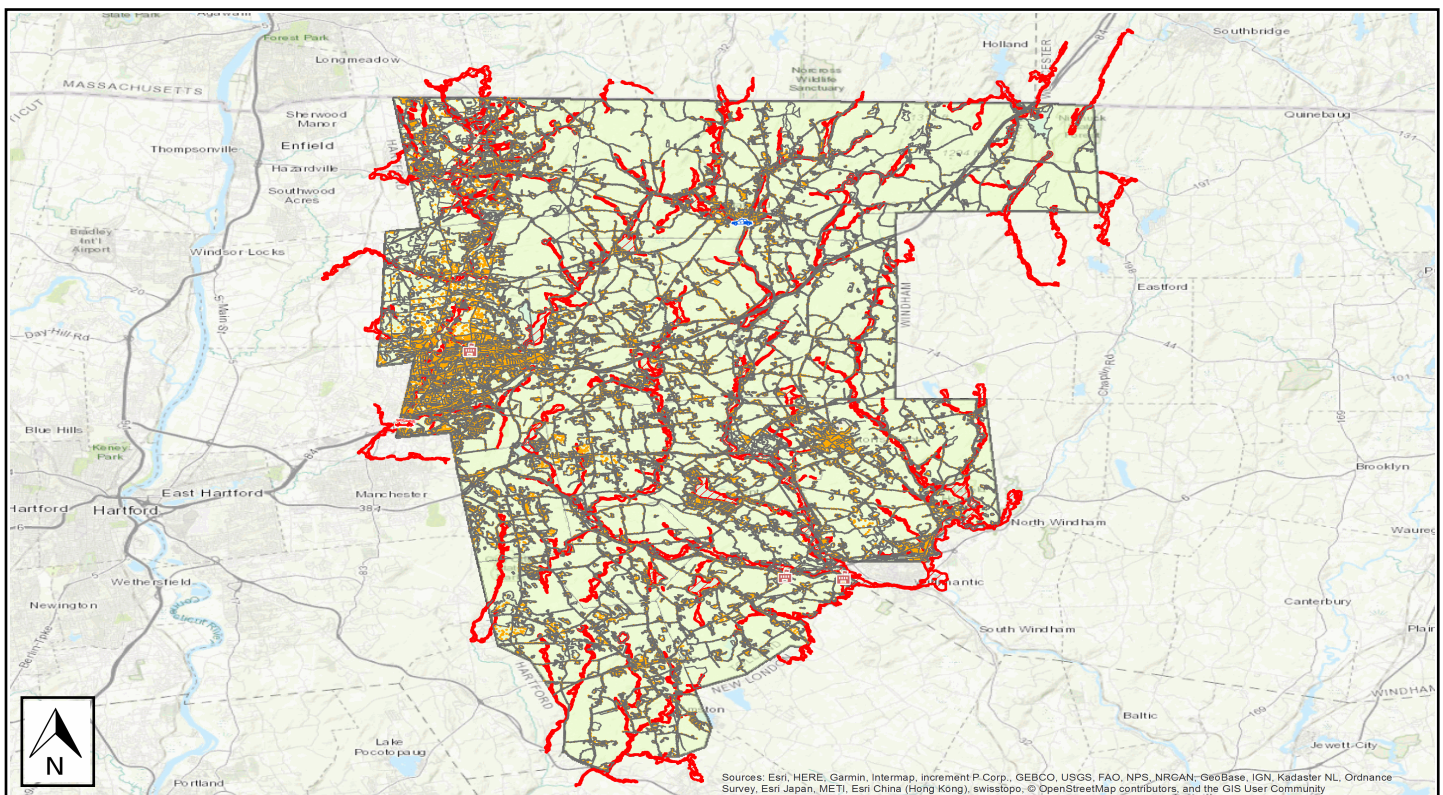
Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	CTTIndV4100yrOldDG
Scenario Name:	YR100DGRun
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

Study Region Overview Map

Illustrating scenario flood extent, as well as exposed essential facilities and total exposure



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Building Damage

General Building Stock Damage

Hazus estimates that about 221 buildings will be at least moderately damaged. This is over 86% of the total number of buildings in the scenario. There are an estimated 5 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Total Economic Loss (1 dot = \$300K) Overview Map

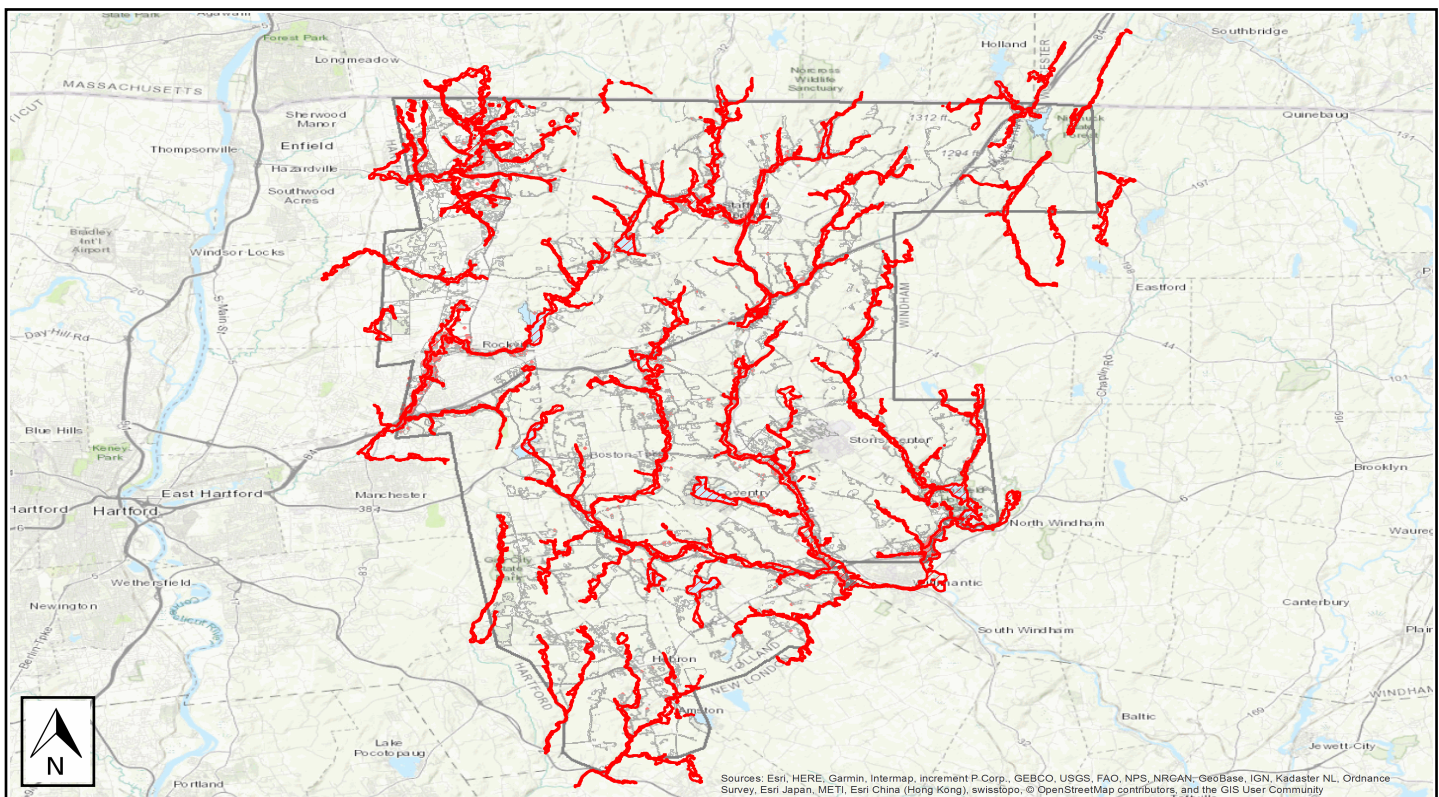


Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	1	16.67	5	83.33	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	1	25.00	1	25.00	0	0.00	0	0.00	2	50.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	140	39.77	139	39.49	45	12.78	18	5.11	7	1.99	3	0.85
Total	141		145		46		18		7		5	

Counts By Damage Level

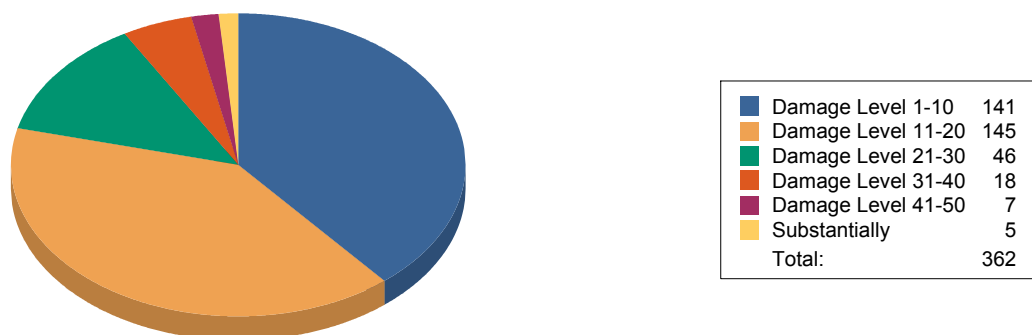


Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0	0	0	0	0	0	0	0	0	0	0
ManufHousing	0	0	0	0	0	0	0	0	0	0	1	100
Masonry	2	29	4	57	1	14	0	0	0	0	0	0
Steel	1	17	3	50	1	17	0	0	0	0	1	17
Wood	138	40	137	40	44	13	18	5	7	2	2	1



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Essential Facility Damage

Before the flood analyzed in this scenario, the region had 224 hospital beds available for use. On the day of the scenario flood event, the model estimates that 224 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	22	1	0	1
Hospitals	4	0	0	0
Police Stations	10	1	0	1
Schools	66	2	1	2

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.



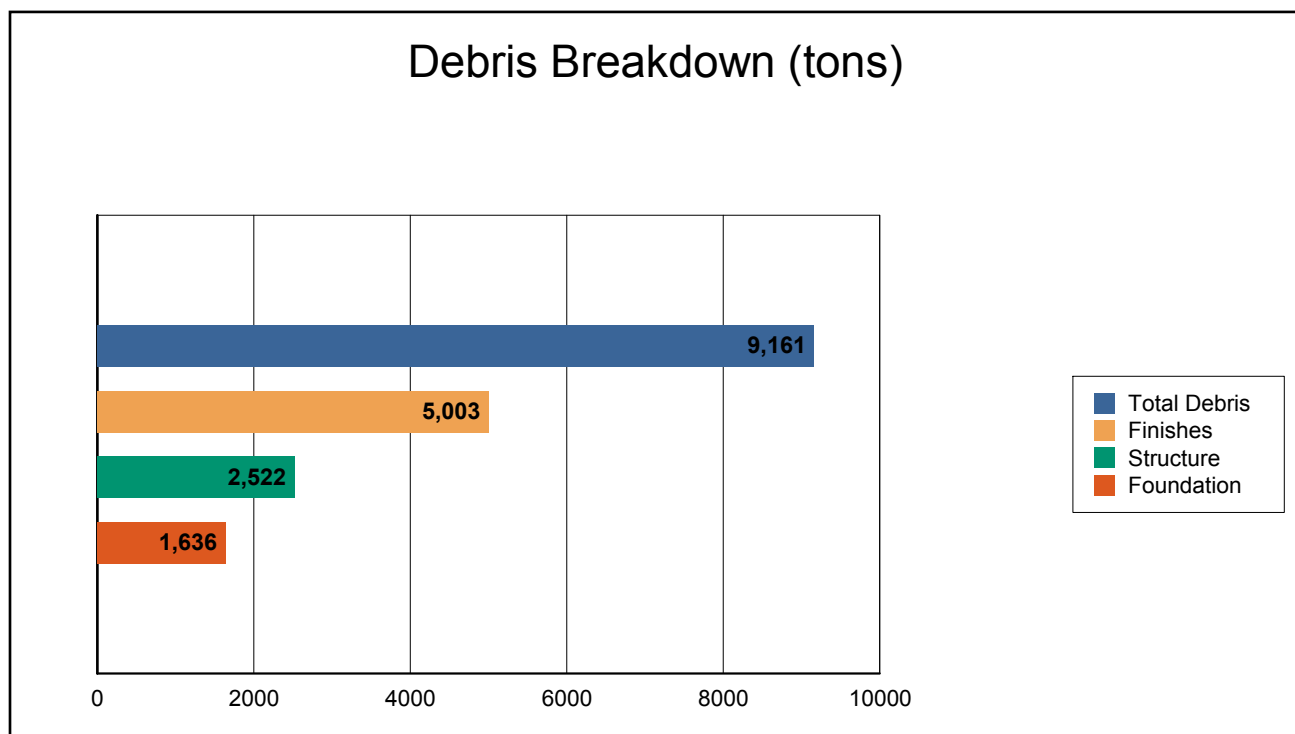
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Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

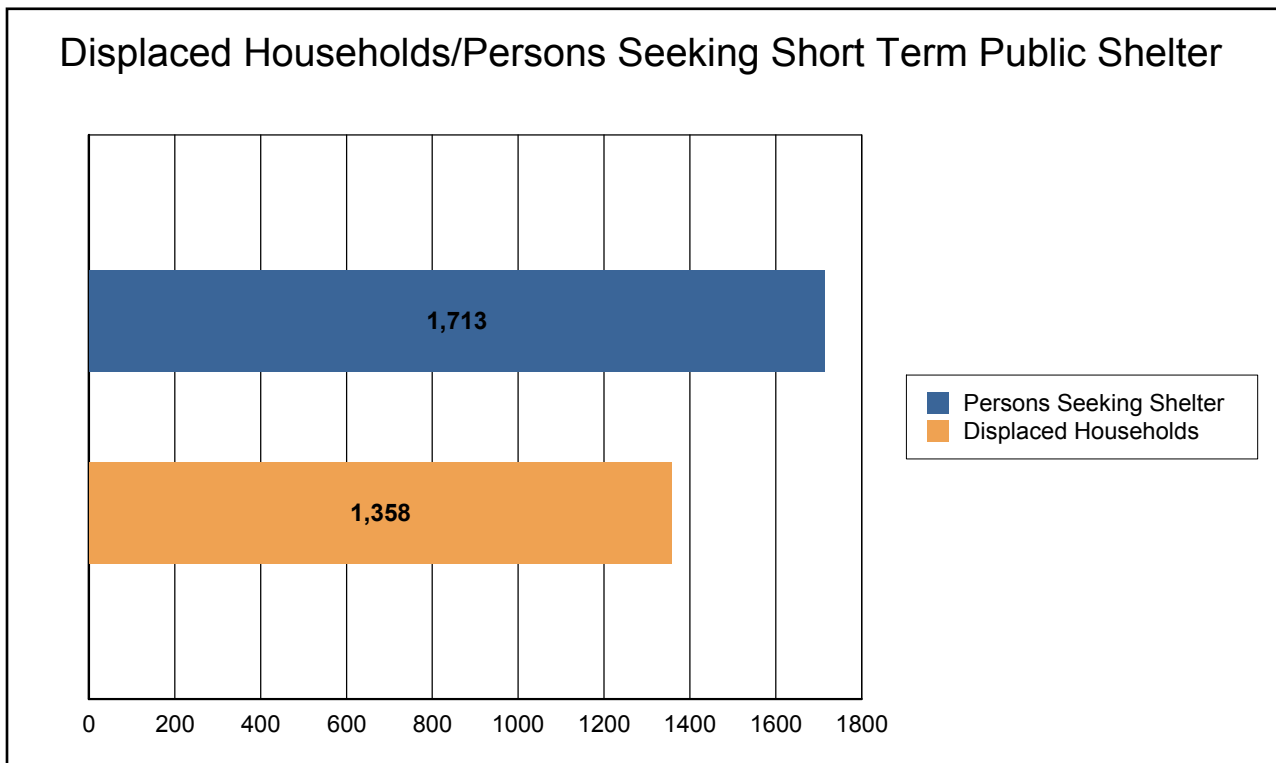


The model estimates that a total of 9,161 tons of debris will be generated. Of the total amount, Finishes comprises 55% of the total, Structure comprises 28% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 366 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 1,358 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 1,713 people (out of a total population of 152,691) will seek temporary shelter in public shelters.



Economic Loss

The total economic loss estimated for the flood is 304.14 million dollars, which represents 3.87 % of the total replacement value of the scenario buildings.

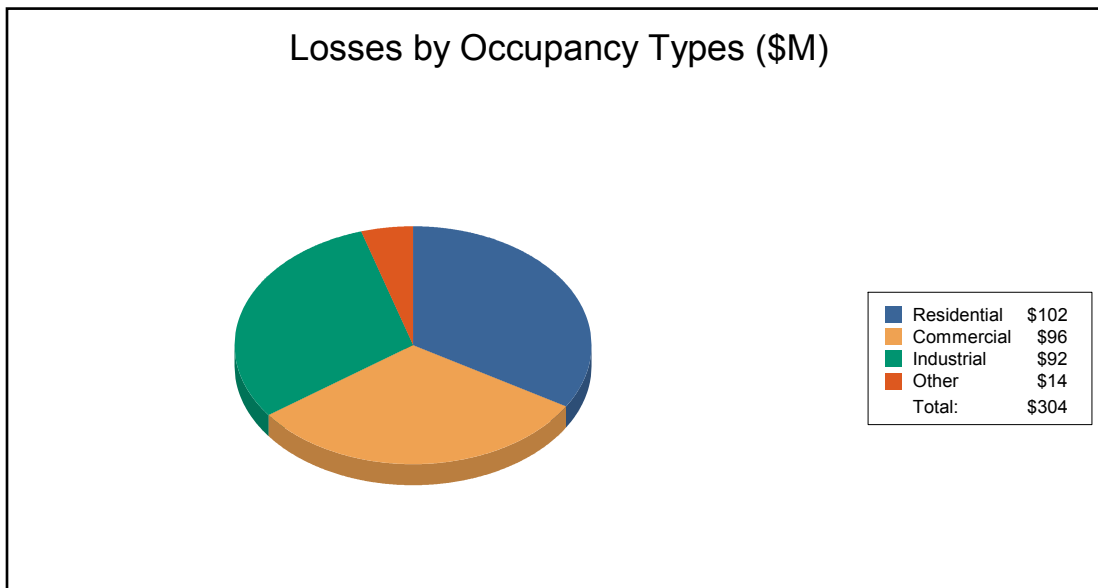
Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 302.90 million dollars. 0% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 33.51% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates
(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	68.11	24.49	25.36	2.10	120.06
	Content	33.65	69.94	57.95	11.39	172.93
	Inventory	0.00	1.01	8.79	0.11	9.91
	Subtotal	101.75	95.45	92.10	13.60	302.90
Business Interruption						
	Income	0.02	0.29	0.00	0.01	0.33
	Relocation	0.04	0.04	0.00	0.01	0.09
	Rental Income	0.04	0.02	0.00	0.00	0.06
	Wage	0.06	0.29	0.01	0.40	0.76
	Subtotal	0.16	0.64	0.02	0.42	1.24
ALL	Total	101.92	96.09	92.12	14.02	304.14





Appendix A: County Listing for the Region

Connecticut

- Tolland



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Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
Connecticut				
Tolland	152,691	15,136,568	3,292,047	18,428,615
Total	152,691	15,136,568	3,292,047	18,428,615
Total Study Region	152,691	15,136,568	3,292,047	18,428,615

Hazus-MH: Flood Global Risk Report

Region Name: CT_Wndhm_FLD_100YR

Flood Scenario: Old100YrDG

Print Date: Tuesday, October 02, 2018

Disclaimer:

This version of Hazus utilizes 2010 Census Data.

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.



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General Description of the Region

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The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- Connecticut

Note:

Appendix A contains a complete listing of the counties contained in the region .

The geographical size of the region is 521 square miles and contains 3,727 census blocks. The region contains over 45 thousand households and has a total population of 118,428 people (2010 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B .

There are an estimated 43,914 buildings in the region with a total building replacement value (excluding contents) of 14,032 million dollars (2010 dollars). Approximately 90.24% of the buildings (and 74.89% of the building value) are associated with residential housing.



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Building Inventory

General Building Stock

Hazus estimates that there are 43,914 buildings in the region which have an aggregate total replacement value of 14,032 million (2014 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure (\$1000)	Percent of Total
Residential	10,508,194	74.9%
Commercial	1,907,736	13.6%
Industrial	950,115	6.8%
Agricultural	128,998	0.9%
Religion	204,545	1.5%
Government	133,498	1.0%
Education	198,503	1.4%
Total	14,031,589	100.0%

Building Exposure by Occupancy Type for the Study Region
(\$1000's)

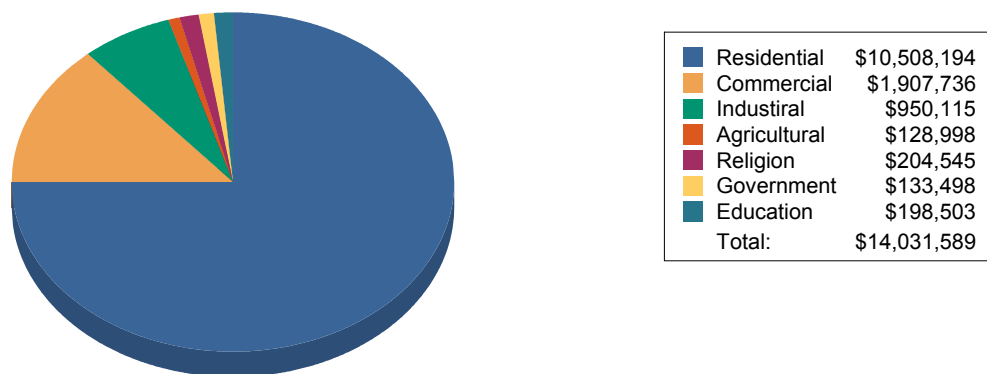
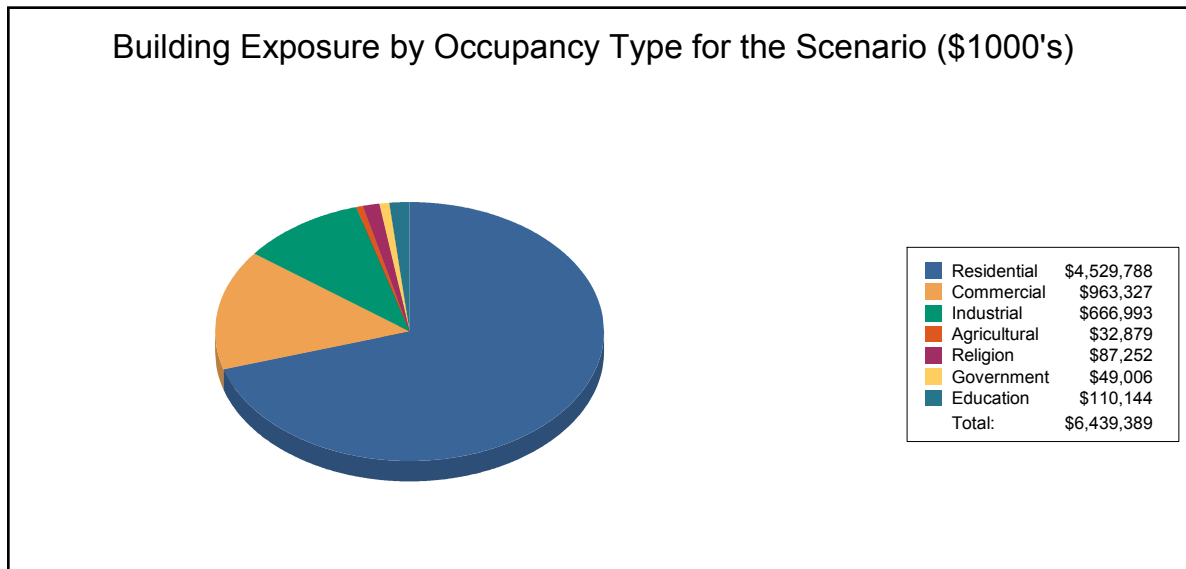


Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure (\$1000)	Percent of Total
Residential	4,529,788	70.3%
Commercial	963,327	15.0%
Industrial	666,993	10.4%
Agricultural	32,879	0.5%
Religion	87,252	1.4%
Government	49,006	0.8%
Education	110,144	1.7%
Total	6,439,389	100.0%



Essential Facility Inventory

For essential facilities, there are 2 hospitals in the region with a total bed capacity of 148 beds. There are 56 schools, 27 fire stations, 10 police stations and no emergency operation centers.

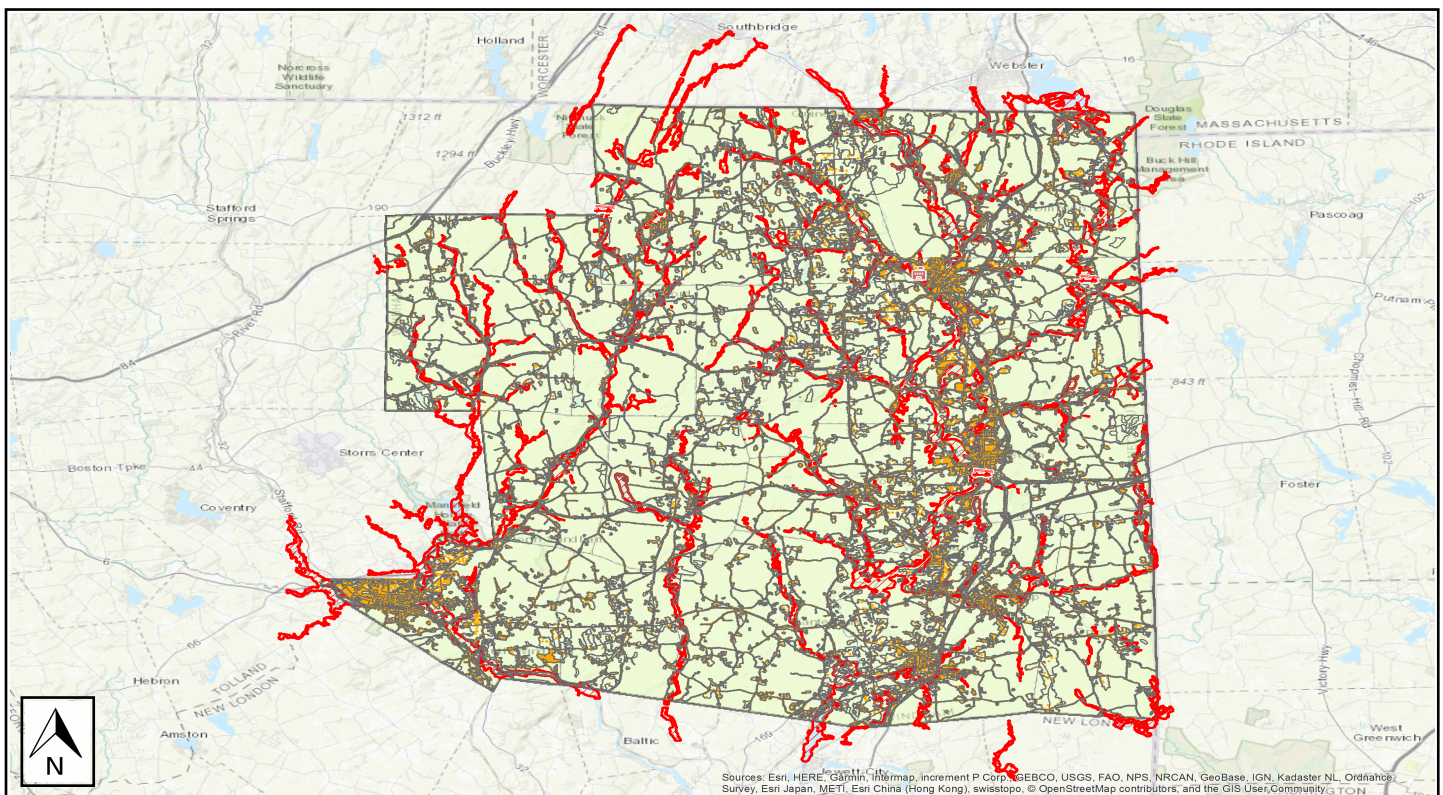
Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	CT_Wndhm_FLD_100YR
Scenario Name:	Old100YrDG
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

Study Region Overview Map

Illustrating scenario flood extent, as well as exposed essential facilities and total exposure



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Building Damage

General Building Stock Damage

Hazus estimates that about 343 buildings will be at least moderately damaged. This is over 68% of the total number of buildings in the scenario. There are an estimated 41 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Total Economic Loss (1 dot = \$300K) Overview Map

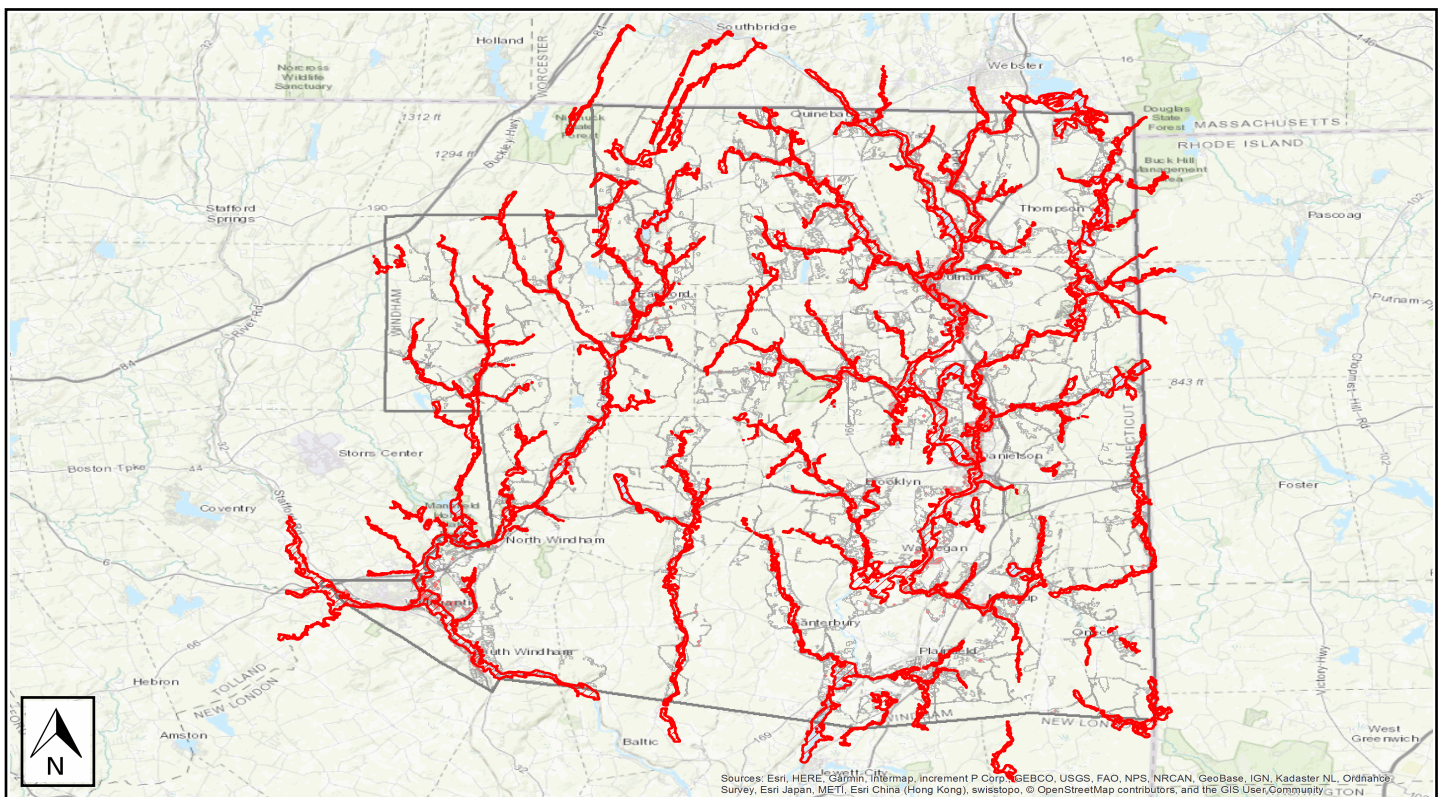


Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	1	50.00	0	0.00	0	0.00	1	50.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	67	16.46	111	27.27	112	27.52	51	12.53	25	6.14	41	10.07
Total	67		113		112		51		26		41	

Counts By Damage Level

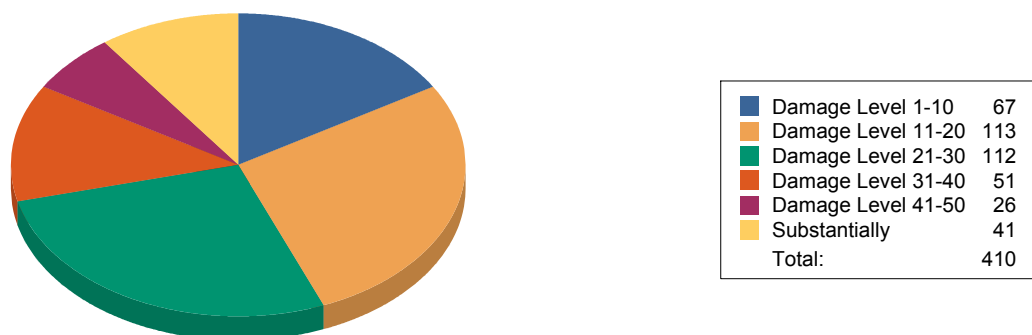


Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0	0	0	0	0	0	0	0	0	0	0
ManufHousing	0	0	0	0	0	0	0	0	0	0	3	100
Masonry	1	33	1	33	1	33	0	0	0	0	0	0
Steel	0	0	2	67	0	0	0	0	1	33	0	0
Wood	66	17	109	27	111	28	51	13	25	6	38	10



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Essential Facility Damage

Before the flood analyzed in this scenario, the region had 148 hospital beds available for use. On the day of the scenario flood event, the model estimates that 148 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	27	3	0	2
Hospitals	2	0	0	0
Police Stations	10	0	0	0
Schools	56	2	0	2

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.



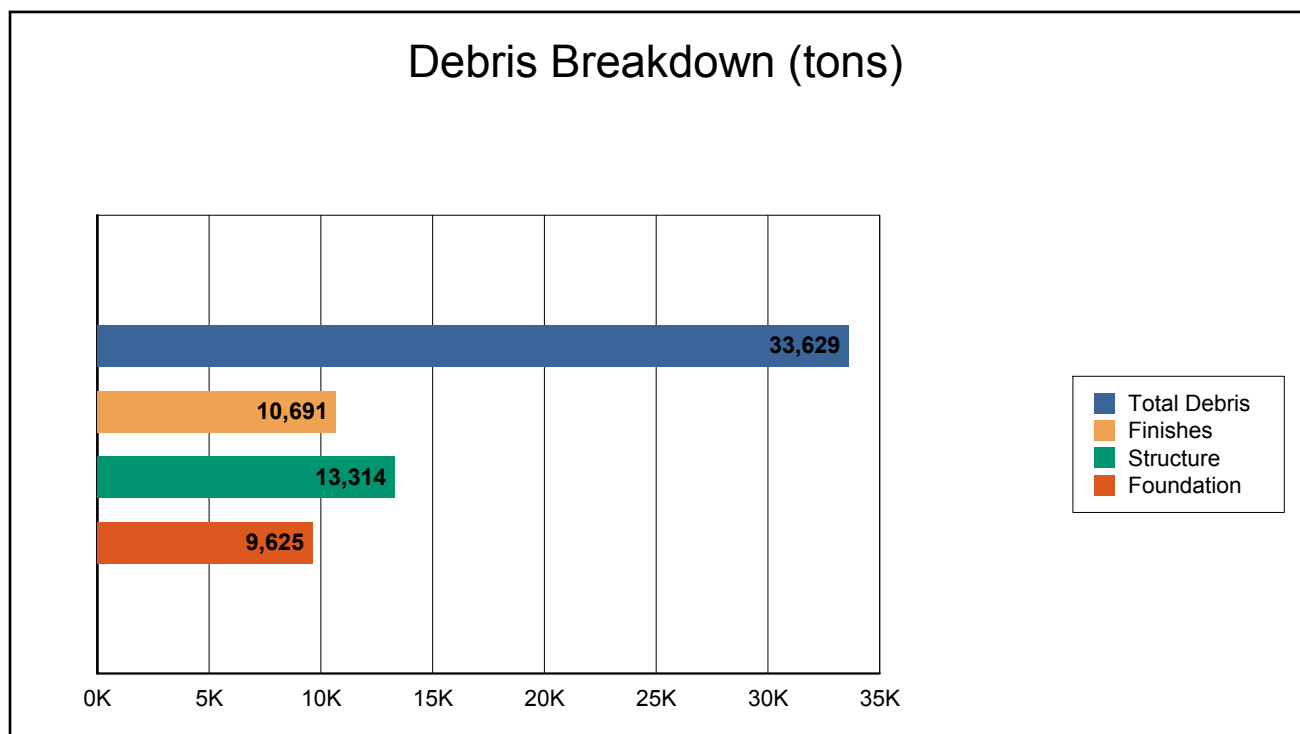
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Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

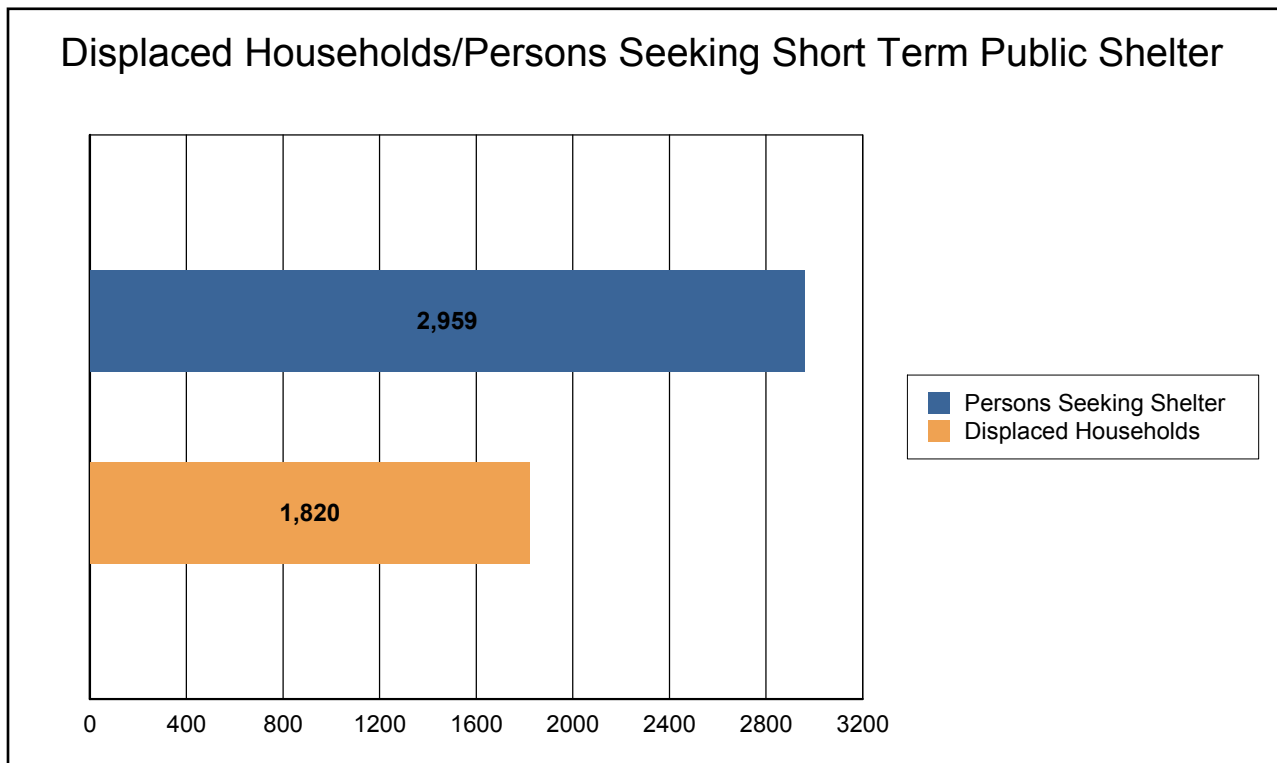


The model estimates that a total of 33,629 tons of debris will be generated. Of the total amount, Finishes comprises 32% of the total, Structure comprises 40% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 1,345 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 1,820 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 2,959 people (out of a total population of 118,428) will seek temporary shelter in public shelters.



Economic Loss

The total economic loss estimated for the flood is 461.43 million dollars, which represents 7.17 % of the total replacement value of the scenario buildings.

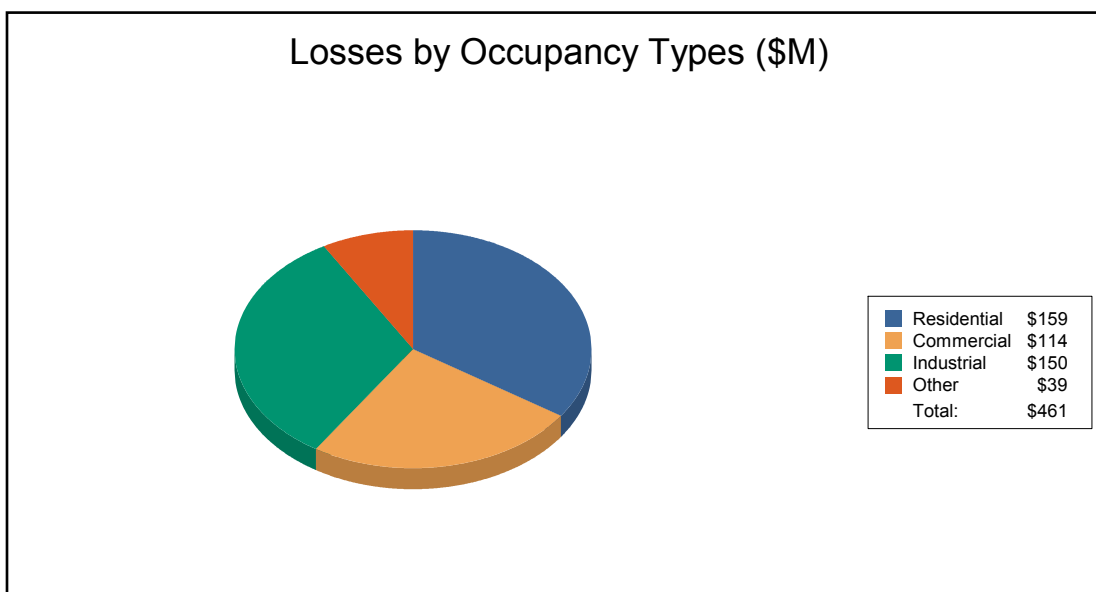
Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 459.62 million dollars. 0% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 34.50% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates
(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	104.66	30.09	40.84	6.64	182.23
	Content	54.47	80.94	97.89	30.80	264.10
	Inventory	0.00	2.20	10.94	0.17	13.30
	Subtotal	159.13	113.23	149.66	37.61	459.62
Business Interruption						
	Income	0.00	0.19	0.01	0.03	0.23
	Relocation	0.05	0.03	0.01	0.02	0.11
	Rental Income	0.02	0.02	0.00	0.00	0.04
	Wage	0.00	0.26	0.01	1.16	1.43
	Subtotal	0.08	0.49	0.03	1.21	1.81
ALL	Total	159.21	113.72	149.69	38.82	461.43





Appendix A: County Listing for the Region

Connecticut

- Windham



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Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
Connecticut				
Windham	118,428	10,508,194	3,523,395	14,031,589
Total	118,428	10,508,194	3,523,395	14,031,589
Total Study Region	118,428	10,508,194	3,523,395	14,031,589



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TOWN	SUM_r_Households	Displaced	SUM_r_People Needing Shelter	SUM_r_Bldg ModDmg	SUM_r_BL_RES	SUM_r_CL_RES	RES BLDG & CNTNT LOSS	SUM_r_BUS_DIS RPT	SUM_r_OTHER_BldgLoss	SUM_r_OTHER_ContLoss	OTH BLDG & CNTNT LOSS
Andover	50		51	0	\$3,047,678	\$1,315,212	\$4,362,890	\$125,027	\$849,313	\$2,504,413	\$3,353,726
Avon	219		300	13	\$17,606,790	\$8,186,803	\$25,793,594	\$1,305,069	\$12,283,242	\$31,015,257	\$43,298,499
Berlin	327		421	0	\$11,805,350	\$5,217,829	\$17,023,179	\$2,800,644	\$12,309,410	\$33,196,310	\$45,505,720
Bloomfield	335		544	6	\$19,037,524	\$10,093,485	\$29,131,009	\$920,031	\$5,408,911	\$16,712,206	\$22,121,116
Bolton	22		3	0	\$670,470	\$273,118	\$943,588	\$1,995	\$64,673	\$186,972	\$251,645
Canton	113		124	0	\$6,904,749	\$2,985,550	\$9,890,298	\$1,203,110	\$7,215,104	\$15,951,844	\$23,166,948
Columbia	49		26	0	\$2,305,975	\$974,225	\$3,280,201	\$1,779,558	\$5,148,910	\$12,894,455	\$18,043,365
Coventry	147		101	0	\$9,189,275	\$3,995,153	\$13,184,428	\$276,509	\$2,000,953	\$4,894,632	\$6,895,584
East Granb	49		24	0	\$1,633,363	\$697,259	\$2,330,622	\$216,909	\$1,451,151	\$3,938,989	\$5,390,141
East Hartfc	1442		2940	23	\$52,116,011	\$26,118,990	\$78,235,001	\$2,623,480	\$19,999,572	\$41,960,516	\$61,960,088
East Winds	212		383	10	\$12,368,186	\$5,737,546	\$18,105,732	\$655,803	\$4,901,014	\$12,534,183	\$17,435,197
Ellington	210		306	0	\$4,075,615	\$1,825,198	\$5,900,814	\$470,916	\$2,521,235	\$5,725,693	\$8,246,928
Enfield	368		502	0	\$11,160,845	\$5,527,900	\$16,688,745	\$2,231,189	\$8,746,151	\$29,851,403	\$38,597,555
Farmington	247		367	0	\$14,008,366	\$6,651,682	\$20,660,048	\$2,325,028	\$17,887,620	\$38,327,499	\$56,215,119
Glastonbur	441		658	2	\$30,229,673	\$14,016,686	\$44,246,359	\$1,772,302	\$15,519,362	\$33,386,534	\$48,905,896
Granby	126		89	0	\$5,387,871	\$2,510,396	\$7,898,266	\$150,109	\$791,445	\$2,915,934	\$3,707,379
Hartford	441		984	1	\$14,875,072	\$15,437,606	\$30,312,678	\$1,435,037	\$6,284,328	\$23,597,457	\$29,881,786
Hebron	68		29	0	\$2,105,057	\$887,898	\$2,992,955	\$12,169	\$164,765	\$564,727	\$729,492
Mancheste	219		277	0	\$5,669,100	\$3,061,709	\$8,730,809	\$1,465,406	\$6,228,671	\$16,729,812	\$22,958,483
Mansfield	135		92	0	\$7,562,874	\$3,749,487	\$11,312,361	\$669,311	\$4,427,870	\$14,115,604	\$18,543,474
Marlborou	102		91	0	\$4,134,729	\$1,884,298	\$6,019,027	\$112,827	\$1,047,023	\$2,391,734	\$3,438,757
New Britai	500		826	0	\$11,388,211	\$6,954,794	\$18,343,005	\$1,111,270	\$3,355,828	\$10,777,123	\$14,132,951
Newington	318		534	0	\$11,047,462	\$5,762,742	\$16,810,204	\$1,188,814	\$7,908,260	\$17,958,005	\$25,866,265
Plainville	257		352	0	\$10,211,676	\$5,270,509	\$15,482,185	\$1,888,879	\$7,620,960	\$19,777,401	\$27,398,361
Rocky Hill	52		35	0	\$1,918,204	\$1,008,484	\$2,926,688	\$238,720	\$1,815,886	\$4,158,645	\$5,974,531
Simsbury	281		314	0	\$18,425,282	\$8,133,014	\$26,558,296	\$749,528	\$5,591,549	\$15,479,938	\$21,071,488
Somers	139		46	0	\$3,503,025	\$1,406,869	\$4,909,894	\$220,000	\$1,004,422	\$3,806,573	\$4,810,995
Southingto	469		632	0	\$13,861,508	\$6,339,676	\$20,201,183	\$2,511,753	\$10,006,743	\$32,147,793	\$42,154,536
South Win	294		488	59	\$24,800,709	\$11,406,070	\$36,206,779	\$1,423,543	\$9,429,328	\$20,431,230	\$29,860,558
Stafford	266		233	0	\$11,771,383	\$5,800,777	\$17,572,160	\$2,476,404	\$10,264,642	\$29,045,916	\$39,310,558
Suffield	81		50	0	\$4,533,673	\$2,495,986	\$7,029,659	\$93,989	\$901,959	\$2,707,065	\$3,609,024
Tolland	105		122	0	\$3,995,588	\$1,664,400	\$5,659,988	\$266,211	\$768,796	\$2,522,681	\$3,291,478
Vernon	392		699	0	\$17,694,219	\$10,790,699	\$28,484,918	\$6,384,597	\$24,380,950	\$62,048,654	\$86,429,604
West Hartf	642		960	0	\$20,799,371	\$11,163,679	\$31,963,050	\$3,788,079	\$13,603,152	\$39,771,222	\$53,374,375
Wethersfie	670		1242	10	\$27,768,622	\$14,296,287	\$42,064,909	\$1,654,263	\$16,392,661	\$33,702,005	\$50,094,666
Willington	47		12	0	\$1,997,204	\$891,456	\$2,888,659	\$28,939	\$330,614	\$794,199	\$1,124,812
Windsor	469		847	19	\$36,902,646	\$16,811,366	\$53,714,012	\$1,592,762	\$10,489,401	\$24,603,263	\$35,092,664
Windsor Lc	16		7	0	\$1,239,200	\$557,952	\$1,797,152	\$485,244	\$2,123,989	\$4,339,475	\$6,463,464

Hazus-MH: Hurricane Global Risk Report

Region Name: CTCRCOGV4HUR

Hurricane Scenario: Probabilistic 100-year Return Period

Print Date: Friday, September 28, 2018

Disclaimer:

*This version of Hazus utilizes 2010 Census Data.
Totals only reflect data for those census tracts/blocks included in the user's study region.*

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Hurricane. These results can be improved by using enhanced inventory data.

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General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The hurricane loss estimates provided in this report are based on a region that includes 2 county(ies) from the following state(s):

- Connecticut

Note:

Appendix A contains a complete listing of the counties contained in the region .

The geographical size of the region is 1,167.66 square miles and contains 253 census tracts. There are over 405 thousand households in the region and has a total population of 1,046,705 people (2010 Census Bureau data). The distribution of population by State and County is provided in Appendix B .

There are an estimated 342 thousand buildings in the region with a total building replacement value (excluding contents) of 138,504 million dollars (2014 dollars). Approximately 90% of the buildings (and 72% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

Hazus estimates that there are 342,613 buildings in the region which have an aggregate total replacement value of 138,504 million (2014 dollars). Table 1 presents the relative distribution of the value with respect to the general occupancies. Appendix B provides a general distribution of the building value by State and County.

Building Exposure by Occupancy Type

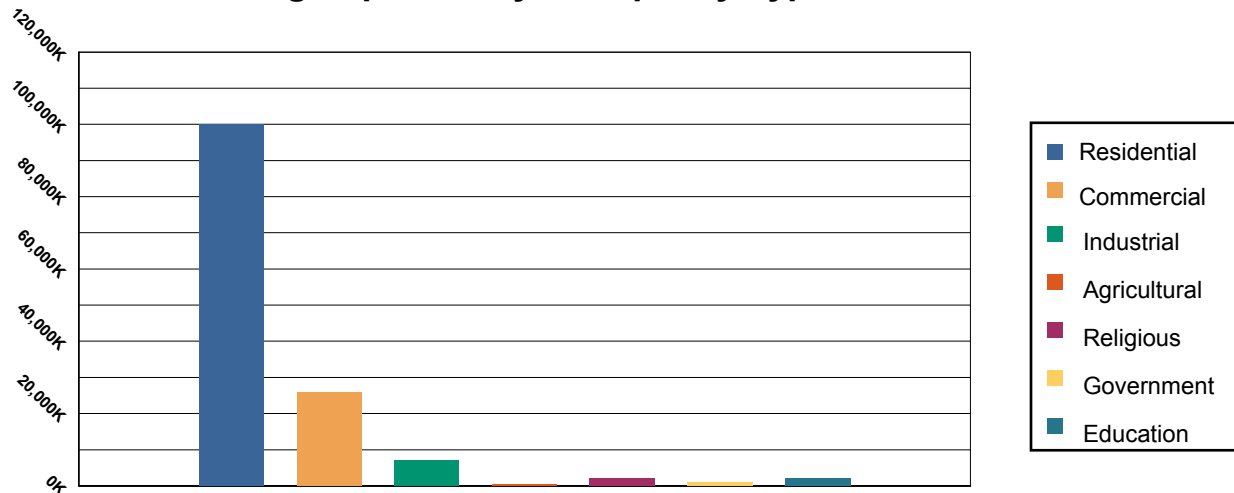


Table 1: Building Exposure by Occupancy Type

Occupancy	Exposure (\$1000)	Percent of Tot
Residential	100,011,310	72.21%
Commercial	25,955,953	18.74%
Industrial	7,102,223	5.13%
Agricultural	431,788	0.31%
Religious	1,946,609	1.41%
Government	1,034,922	0.75%
Education	2,020,702	1.46%
Total	138,503,507	100.00%

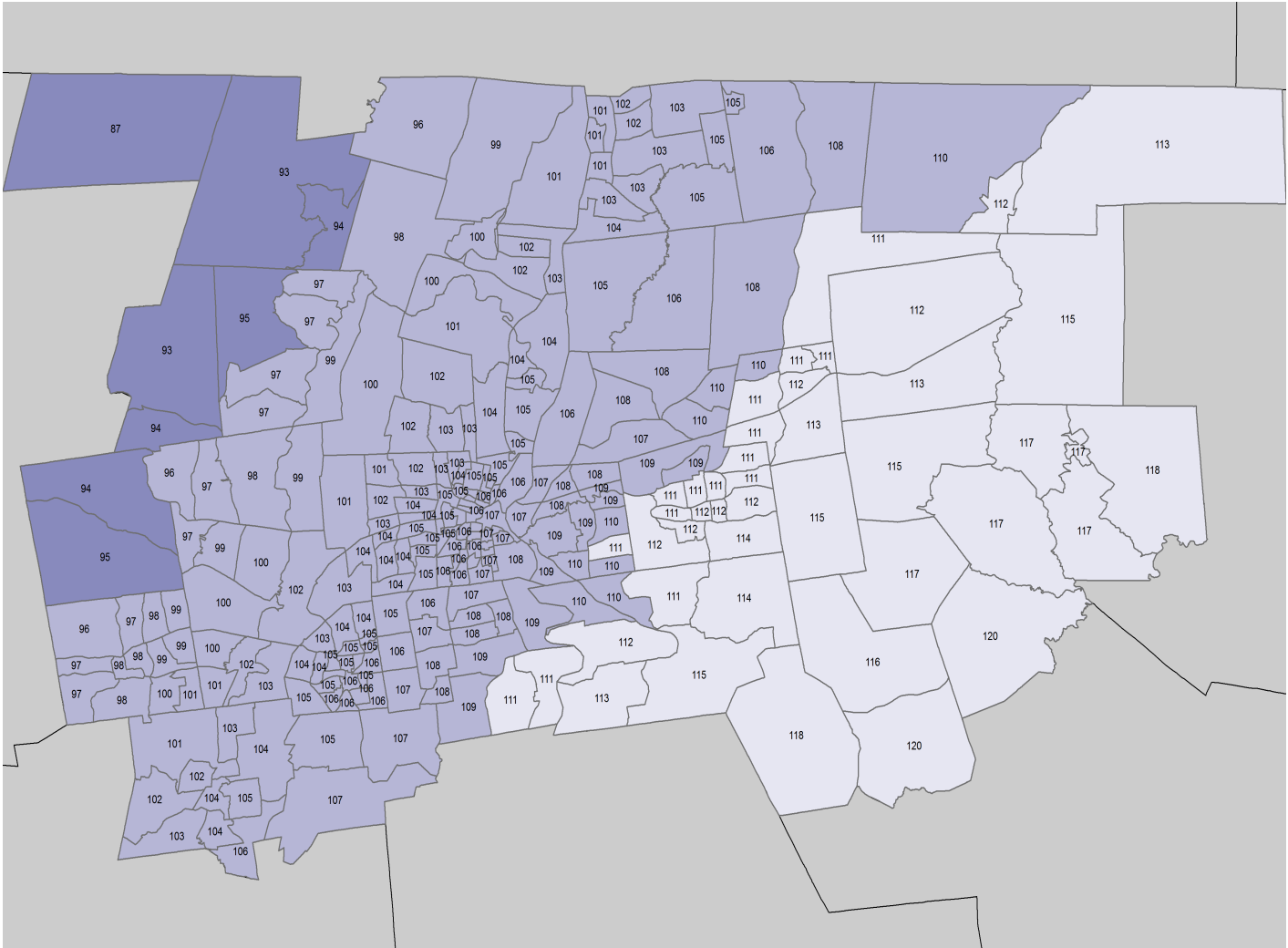
Essential Facility Inventory

For essential facilities, there are 16 hospitals in the region with a total bed capacity of 3,260 beds. There are 428 schools, 73 fire stations, 47 police stations and 11 emergency operation facilities.

Hurricane Scenario

Hazus used the following set of information to define the hurricane parameters for the hurricane loss estimate provided in this report.

Thematic Map with peak gust windfield and HU track



Scenario Name: Probabilistic

Type: Probabilistic

Building Damage

General Building Stock Damage

Hazus estimates that about 649 buildings will be at least moderately damaged. This is over 0% of the total number of buildings in the region. There are an estimated 0 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 6 of the Hazus Hurricane technical manual. Table 2 below summarizes the expected damage by general occupancy for the buildings in the region. Table 3 summarizes the expected damage by general building type.

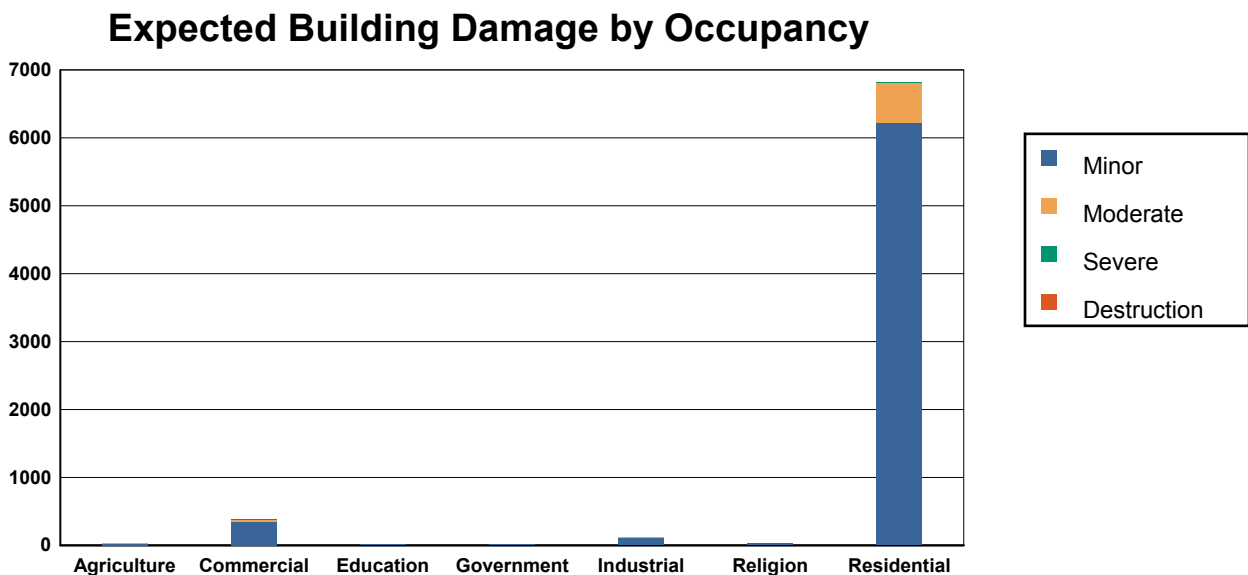


Table 2: Expected Building Damage by Occupancy : 100 - year Event

Occupancy	None		Minor		Moderate		Severe		Destruction	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	1,268	97.91	23	1.80	3	0.22	1	0.07	0	0.00
Commercial	21,416	98.27	344	1.58	32	0.15	2	0.01	0	0.00
Education	866	98.42	14	1.54	0	0.04	0	0.00	0	0.00
Government	768	98.24	13	1.72	0	0.04	0	0.00	0	0.00
Industrial	6,847	98.25	114	1.64	7	0.10	2	0.02	0	0.00
Religion	1,742	98.48	26	1.47	1	0.05	0	0.00	0	0.00
Residential	302,300	97.79	6,223	2.01	588	0.19	14	0.00	0	0.00
Total	335,207		6,757		630		19		0	

Table 3: Expected Building Damage by Building Type : 100 - year Event

Building Type	None		Minor		Moderate		Severe		Destruction	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	4,587	97.80	100	2.13	3	0.07	0	0.00	0	0.00
Masonry	29,167	96.31	888	2.93	223	0.74	7	0.02	0	0.00
MH	2,919	99.95	1	0.04	0	0.01	0	0.00	0	0.00
Steel	15,849	98.24	260	1.61	22	0.14	2	0.01	0	0.00
Wood	283,237	98.17	5,050	1.75	204	0.07	11	0.00	0	0.00

Essential Facility Damage

Before the hurricane, the region had 3,260 hospital beds available for use. On the day of the hurricane, the model estimates that 3260 hospital beds (only 100.00%) are available for use by patients already in the hospital and those injured by the hurricane. After one week, 100.00% of the beds will be in service. By 30 days, 100.00% will be operational.

Thematic Map of Essential Facilities with greater than 50% moderate

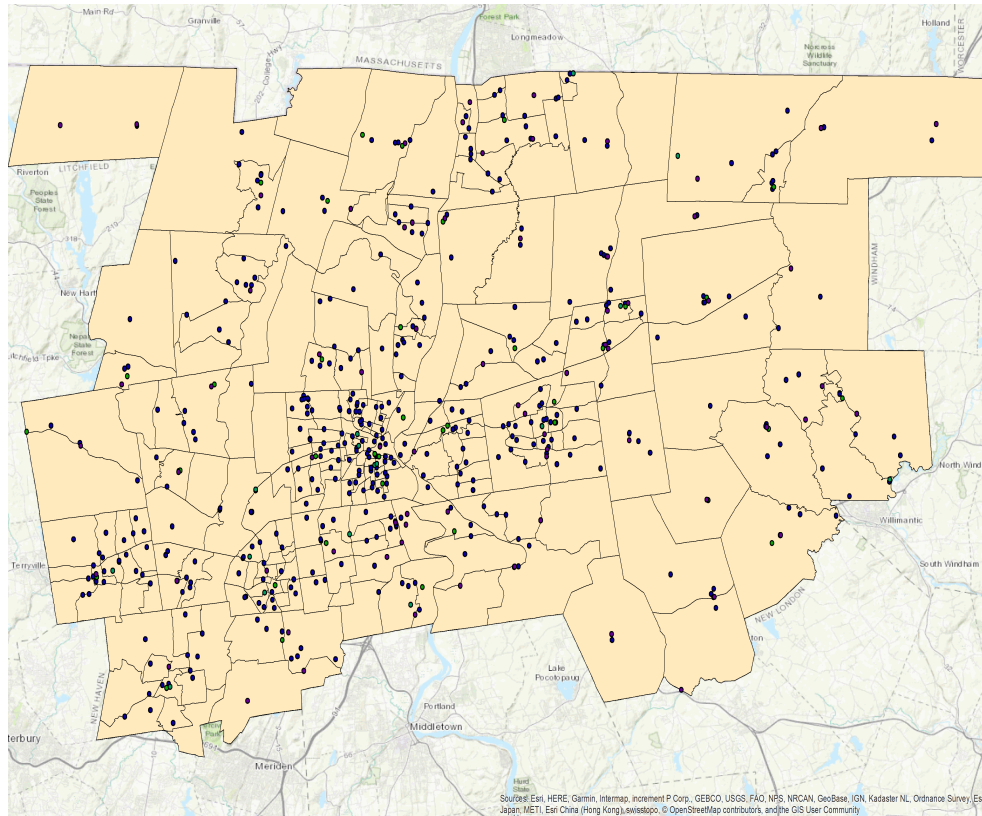
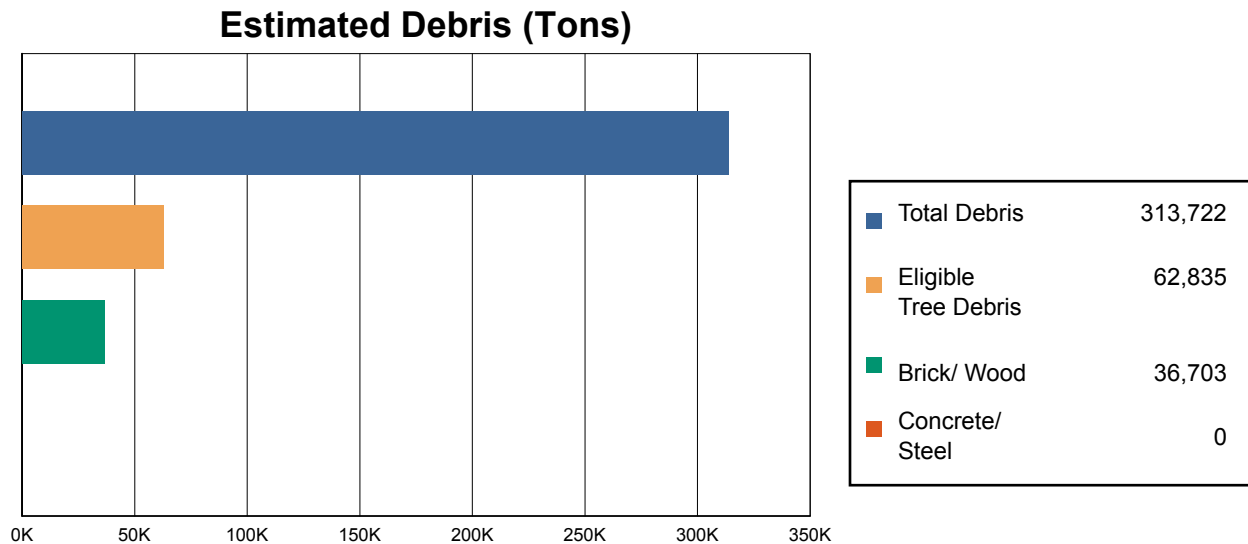


Table 4: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		Probability of at Least Moderate Damage > 50%	Probability of Complete Damage > 50%	Expected Loss of Use < 1 day
EOCs	11	0	0	11
Fire Stations	73	0	0	73
Hospitals	16	6	0	16
Police Stations	47	0	0	47
Schools	428	0	0	428

Induced Hurricane Damage

Debris Generation

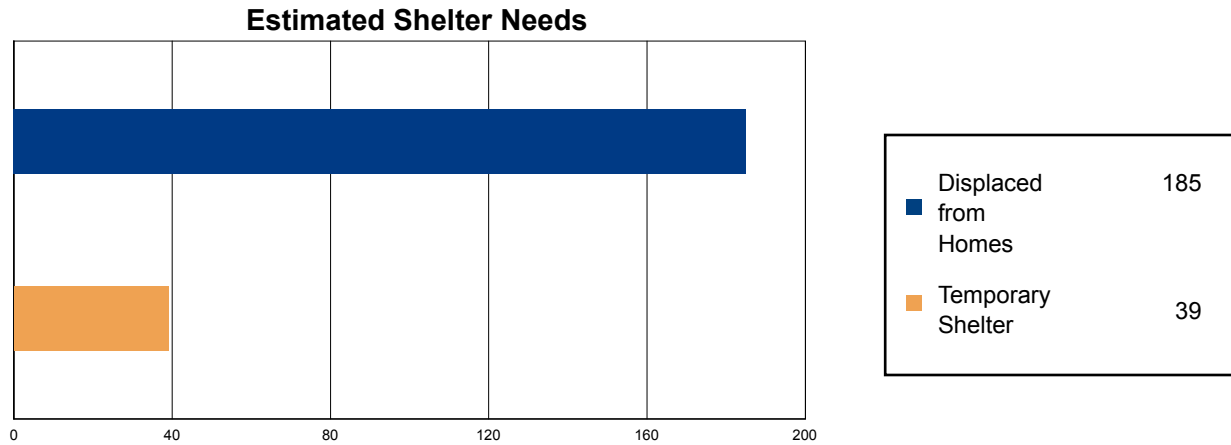


Hazus estimates the amount of debris that will be generated by the hurricane. The model breaks the debris into four general categories: a) Brick/Wood, b) Reinforced Concrete/Steel, c) Eligible Tree Debris, and d) Other Tree Debris. This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 313,722 tons of debris will be generated. Of the total amount, 214,525 tons (68%) is Other Tree Debris. Of the remaining 99,197 tons, Brick/Wood comprises 37% of the total, Reinforced Concrete/Steel comprises of 0% of the total, with the remainder being Eligible Tree Debris. If the building debris tonnage is converted to an estimated number of truckloads, it will require 1454 truckloads (@25 tons/truck) to remove the building debris generated by the hurricane. The number of Eligible Tree Debris truckloads will depend on how the 62,835 tons of Eligible Tree Debris are collected and processed. The volume of tree debris generally ranges from about 4 cubic yards per ton for chipped or compacted tree debris to about 10 cubic yards per ton for bulkier, uncompacted debris.

Social Impact

Shelter Requirement



Hazus estimates the number of households that are expected to be displaced from their homes due to the hurricane and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 185 households to be displaced due to the hurricane. Of these, 39 people (out of a total population of 1,046,705) will seek temporary shelter in public shelters.

Economic Loss

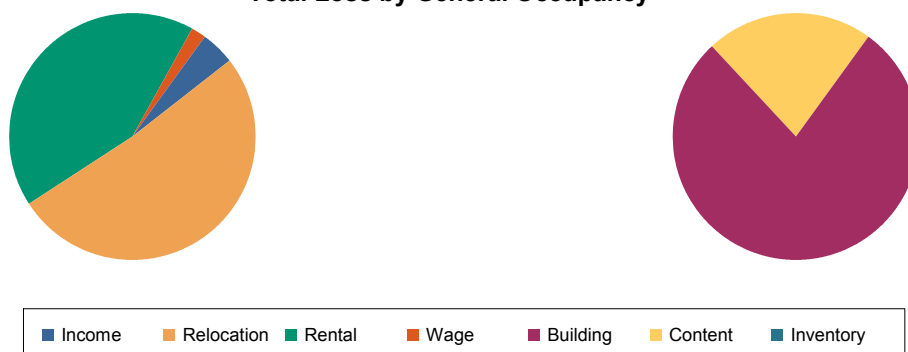
The total economic loss estimated for the hurricane is 517.0 million dollars, which represents 0.37 % of the total replacement value of the region's buildings.

Building-Related Losses

The building related losses are broken into two categories: direct property damage losses and business interruption losses. The direct property damage losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the hurricane. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the hurricane.

The total property damage losses were 517 million dollars. 1% of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 95% of the total loss. Table 5 below provides a summary of the losses associated with the building damage.

Total Loss by General Occupancy



Total Loss by Occupancy Type

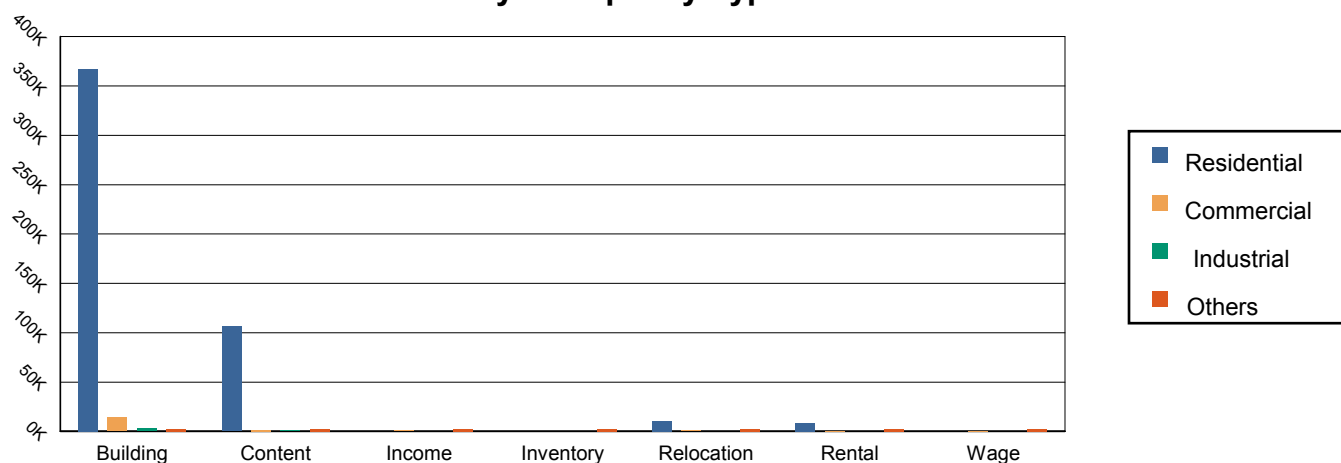


Table 5: Building-Related Economic Loss Estimates

(Thousands of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Property Damage						
	Building	367,099.65	13,842.38	2,987.91	2,352.61	386,282.56
	Content	106,560.63	1,405.51	672.74	116.05	108,754.92
	Inventory	0.00	30.23	103.82	6.51	140.56
	Subtotal	473,660.28	15,278.11	3,764.48	2,475.17	495,178.04
Business Interruption Loss						
	Income	0.00	919.67	2.32	44.28	966.27
	Relocation	10,442.66	723.09	23.91	48.20	11,237.87
	Rental	8,816.30	361.35	2.02	3.04	9,182.71
	Wage	0.00	329.43	3.84	103.99	437.26
	Subtotal	19,258.96	2,333.55	32.09	199.51	21,824.10
Total						
	Total	492,919.24	17,611.66	3,796.56	2,674.68	517,002.14

Appendix A: County Listing for the Region

Connecticut

- Hartford
- Tolland

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		Total
		Residential	Non-Residential	
Connecticut				
Hartford	894,014	84,874,742	35,200,150	120,074,892
Tolland	152,691	15,136,568	3,292,047	18,428,615
Total	1,046,705	100,011,310	38,492,197	138,503,507
Study Region Total	1,046,705	100,011,310	38,492,197	138,503,507

TOWN	SUM_r_At				SUM_r_RE			SUM_r_O		OTH BLDG			
	LeastMod	SUM_r_Complet	SUM_r_DebrisT	Truckloads	SUM_r_RES_	SUM_r_RES_	RES BLDG &	S_BusDisr	SUM_r_OTH	TH_BldgLo	SUM_r_OTH	& CONTNT	SUM_r_OTH_
	Dmg	eDmg	otal	(@25 tons per)	BldgLoss	ContLoss	CONTNT LOSS	ptn	_TotalLoss	ss	_ContLoss	LOSS	BusDisrptn
Andover	1	0	5625	225	1357333	75584	1432917	67489	74535	52000	7433	59433	15102
Avon	1	0	1540	62	3196729	1629024	4825753	24428	147172	146599	0	146599	572
Berlin	1	0	1743	70	4134925	1120557	5255482	36184	247601	244210	44	244254	3347
Bloomfield	2	0	4139	166	6269060	2292527	8561587	152174	422882	398774	14253	413027	9855
Bolton	1	1	4909	196	2005185	116003	2121188	113086	163492	116513	16374	132887	30605
Canton	1	0	336	13	803258	276898	1080156	5414	32034	31925	0	31925	109
Columbia	1	0	7180	287	2250421	123201	2373622	115282	144718	99758	15606	115364	29354
Coventry	1	0	12654	506	4880877	291670	5172547	268890	204229	143291	21205	164496	39732
East Granby	1	1	2947	118	1741402	922842	2664244	15478	90446	88305	977	89282	1164
East Hartford	14	1	7673	307	20994673	4941321	25935994	1493716	1754733	1246866	201350	1448216	306516
East Windsor	1	1	9567	383	6609695	2442912	9052607	352972	512969	375850	66847	442697	70272
Ellington	1	0	9198	368	7478788	488770	7967558	504357	407365	310917	56263	367180	40184
Enfield	4	1	12272	491	21754703	6729627	28484330	1090129	1627531	1235727	175078	1410805	216726
Farmington	1	0	2408	96	4185644	1890623	6076267	46189	236547	234949	0	234949	1598
Glastonbury	1	0	17411	696	17374440	3624997	20999437	826972	1758188	1425352	182636	1607988	150200
Granby	1	0	594	24	1689596	558757	2248353	2777	32663	32515	0	32515	148
Hartford	7	1	11487	459	38474974	4833825	43308799	3788730	4695763	3544868	378551	3923419	772345
Hebron	1	0	14963	599	5774580	2248817	8023397	195947	209540	144870	17696	162566	46974
Manchester	4	1	13094	524	34812217	9814770	44626987	2203110	2629086	1960482	322234	2282716	346370
Mansfield	1	0	19261	770	10971379	3947660	14919039	562973	415229	380670	19374	400044	15185
Marlborough	1	0	8450	338	2685623	152070	2837693	135882	158933	108252	15906	124158	34775
New Britain	3	0	3049	122	11272831	1602872	12875703	868420	539687	495488	34865	530353	9335
Newington	3	0	2802	112	9919538	4099278	14018816	262060	450878	408924	33845	442769	8110
Plainville	1	0	787	31	2440913	849716	3290629	17387	112374	111815	0	111815	559
Rocky Hill	1	0	3115	125	7788670	1037400	8826070	443250	486265	441281	34634	475915	10350
Simsbury	1	0	3679	147	5726322	3347681	9074003	15872	128400	127735	0	127735	665
Somers	1	1	9939	398	5360902	1692142	7053044	189524	216026	188205	22364	210569	5457
Southington	1	0	1238	50	4990221	1553541	6543762	17463	147529	146542	0	146542	987
South Windsor	6	0	10085	403	15089394	5138055	20227449	604900	1016101	858743	109481	968224	47877
Stafford	1	0	25876	1035	6623182	3335306	9958488	271306	304925	252706	44283	296989	7936
Suffield	1	1	8970	359	6355153	1931687	8286840	252860	251892	204857	19676	224533	27359
Tolland	6	0	18461	738	11067778	6071648	17139426	301705	389935	248673	39459	288132	101803
Vernon	2	1	8585	343	18630105	4567105	23197210	1289173	1001767	707060	116506	823566	178202
West Hartford	1	0	4483	179	21525226	8461967	29987193	1055596	994026	892268	87301	979569	14457
Wethersfield	1	0	4047	162	11599998	4274090	15874088	507000	499310	403985	40846	444831	54478
Willington	1	0	15242	610	3556732	1718954	5275686	168803	68541	61098	5581	66679	1861
Windsor	6	0	7968	319	13905865	5794852	19700717	511752	735370	670266	42053	712319	23051
Windsor Locks	1	0	2247	90	4765035	1047053	5812088	302210	523707	393054	49961	443015	80691

Hazus-MH: Earthquake Global Risk Report

Region Name: E_Haddam_64

Earthquake Scenario: RERUN_E_Haddam_6.4

Print Date: January 19, 2018

Disclaimer:

*This version of Hazus utilizes 2010 Census Data.
Totals only reflect data for those census tracts/blocks included in the user's study region.*

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geotechnical, and observed ground motion data.

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General Description of the Region

Hazus is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop earthquake losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from earthquakes and to prepare for emergency response and recovery.

The earthquake loss estimates provided in this report was based on a region that includes 8 county(ies) from the following state(s):

Connecticut

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 4,965.43 square miles and contains 829 census tracts. There are over 1,371 thousand households in the region which has a total population of 3,574,097 people (2010 Census Bureau data). The distribution of population by State and County is provided in Appendix B.

There are an estimated 1,218 thousand buildings in the region with a total building replacement value (excluding contents) of 488,242 (millions of dollars). Approximately 90.00 % of the buildings (and 72.00% of the building value) are associated with residential housing.

The replacement value of the transportation and utility lifeline systems is estimated to be 87,750 and 16,026 (millions of dollars) , respectively.

Building and Lifeline Inventory

Building Inventory

Hazus estimates that there are 1,218 thousand buildings in the region which have an aggregate total replacement value of 488,242 (millions of dollars). Appendix B provides a general distribution of the building value by State and County.

In terms of building construction types found in the region, wood frame construction makes up 84% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

Hazus breaks critical facilities into two (2) groups: essential facilities and high potential loss facilities (HPL). Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 49 hospitals in the region with a total bed capacity of 9,422 beds. There are 1,501 schools, 301 fire stations, 199 police stations and 43 emergency operation facilities. With respect to high potential loss facilities (HPL), there are 0 dams identified within the inventory. Of these, 0 of the dams are classified as 'high hazard'. The inventory also includes 905 hazardous material sites, 0 military installations and 2 nuclear power plants.

Transportation and Utility Lifeline Inventory

Within Hazus, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail, bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data are provided in Tables 1 and 2.

The total value of the lifeline inventory is over 103,776.00 (millions of dollars). This inventory includes over 4,431 kilometers of highways, 3,818 bridges, 283,121 kilometers of pipes.

Table 1: Transportation System Lifeline Inventory

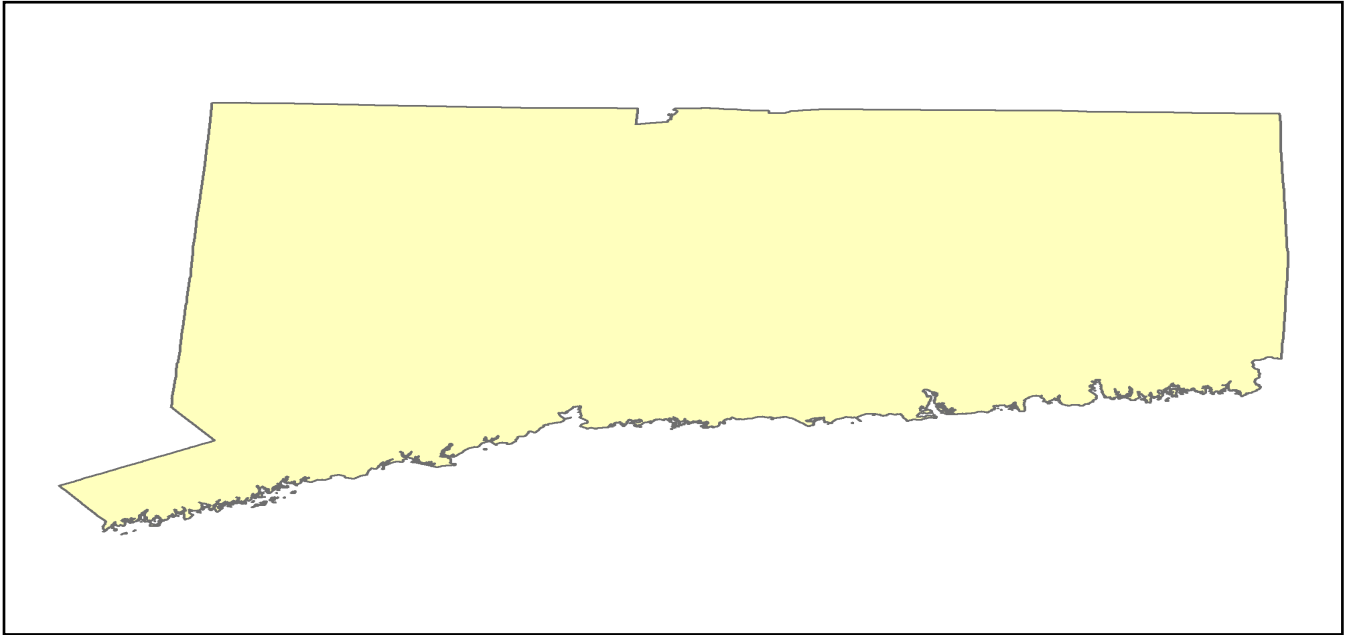
System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
Highway	Bridges	3,818	57,716.30
	Segments	2,070	27,492.50
	Tunnels	1	0.30
	Subtotal		85,209.10
Railways	Bridges	63	7.60
	Facilities	20	53.30
	Segments	440	1,034.70
	Tunnels	0	0.00
	Subtotal		1,095.60
Light Rail	Bridges	0	0.00
	Facilities	9	24.00
	Segments	17	204.40
	Tunnels	0	0.00
	Subtotal		228.40
Bus	Facilities	61	76.50
	Subtotal		76.50
Ferry	Facilities	10	13.30
	Subtotal		13.30
Port	Facilities	96	191.70
	Subtotal		191.70
Airport	Facilities	13	138.50
	Runways	21	797.20
	Subtotal		935.70
		Total	87,750.30

Table 2: Utility System Lifeline Inventory

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	2,831.20
	Facilities	11	421.20
	Pipelines	0	0.00
	Subtotal		3,252.50
Waste Water	Distribution Lines	NA	1,698.70
	Facilities	85	6,510.20
	Pipelines	0	0.00
	Subtotal		8,208.90
Natural Gas	Distribution Lines	NA	1,132.50
	Facilities	3	3.80
	Pipelines	0	0.00
	Subtotal		1,136.20
Oil Systems	Facilities	1	0.10
	Pipelines	0	0.00
	Subtotal		0.10
Electrical Power	Facilities	27	3,415.50
	Subtotal		3,415.50
Communication	Facilities	113	13.00
	Subtotal		13.00
	Total		16,026.20

Earthquake Scenario

Hazus uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.



Scenario Name	RERUN_E_Haddam_6.4
Type of Earthquake	Arbitrary
Fault Name	NA
Historical Epicenter ID #	NA
Probabilistic Return Period	NA
Longitude of Epicenter	-72.40
Latitude of Epicenter	41.50
Earthquake Magnitude	6.40
Depth (km)	10.00
Rupture Length (Km)	NA
Rupture Orientation (degrees)	NA
Attenuation Function	Central & East US (CEUS 2008)

Building Damage

Building Damage

Hazus estimates that about 142,175 buildings will be at least moderately damaged. This is over 12.00 % of the buildings in the region. There are an estimated 14,830 buildings that will be damaged beyond repair. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 below summarizes the expected damage by general building type.

Damage categories by General Occupancy Type

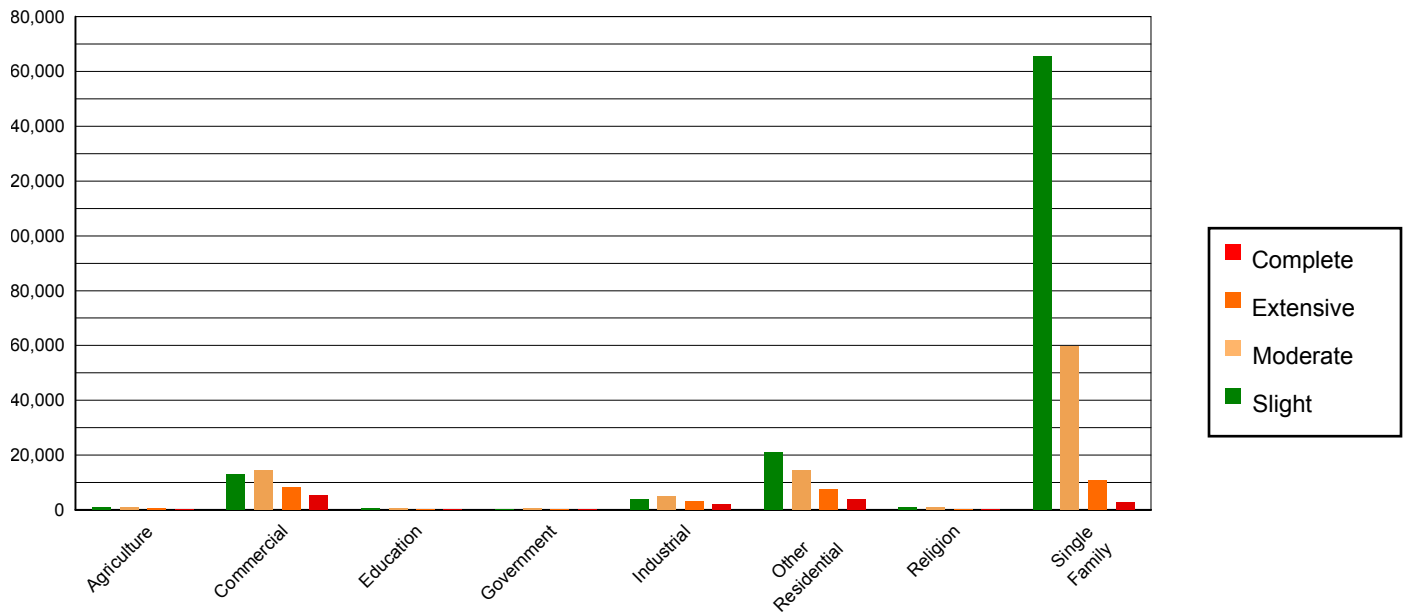


Table 3: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	2,453	0.28	838	0.41	824	0.86	454	1.46	328	2.21
Commercial	39,405	4.53	12,937	6.28	14,303	14.86	8,257	26.57	5,241	35.34
Education	1,642	0.19	536	0.26	629	0.65	362	1.17	227	1.53
Government	944	0.11	344	0.17	481	0.50	330	1.06	210	1.42
Industrial	12,407	1.42	3,908	1.90	4,861	5.05	3,082	9.91	2,115	14.26
Other Residential	81,028	9.31	20,938	10.16	14,551	15.12	7,374	23.73	3,832	25.84
Religion	3,955	0.45	1,047	0.51	831	0.86	406	1.31	222	1.49
Single Family	728,846	83.71	165,563	80.33	59,785	62.11	10,815	34.80	2,656	17.91
Total	870,681		206,112		96,265		31,080		14,831	

Table 4: Expected Building Damage by Building Type (All Design Levels)

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Wood	775,455	89.06	174,692	84.76	60,266	62.60	9,412	30.28	1,450	9.77
Steel	24,909	2.86	8,054	3.91	12,116	12.59	8,487	27.31	5,834	39.34
Concrete	5,400	0.62	1,750	0.85	2,692	2.80	1,793	5.77	1,110	7.49
Precast	1,943	0.22	496	0.24	783	0.81	587	1.89	333	2.25
RM	11,964	1.37	2,254	1.09	3,108	3.23	1,926	6.20	770	5.19
URM	47,640	5.47	16,927	8.21	14,203	14.75	6,080	19.56	3,433	23.15
MH	3,371	0.39	1,940	0.94	3,097	3.22	2,797	9.00	1,900	12.81
Total	870,681		206,112		96,265		31,080		14,831	

*Note:

RM Reinforced Masonry
URM Unreinforced Masonry
MH Manufactured Housing

Essential Facility Damage

Before the earthquake, the region had 9,422 hospital beds available for use. On the day of the earthquake, the model estimates that only 4,552 hospital beds (48.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 68.00% of the beds will be back in service. By 30 days, 87.00% will be operational.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on day 1
Hospitals	49	7	0	24
Schools	1,501	189	27	861
EOCs	43	11	1	17
PoliceStations	199	31	7	117
FireStations	301	49	11	167

Transportation Lifeline Damage

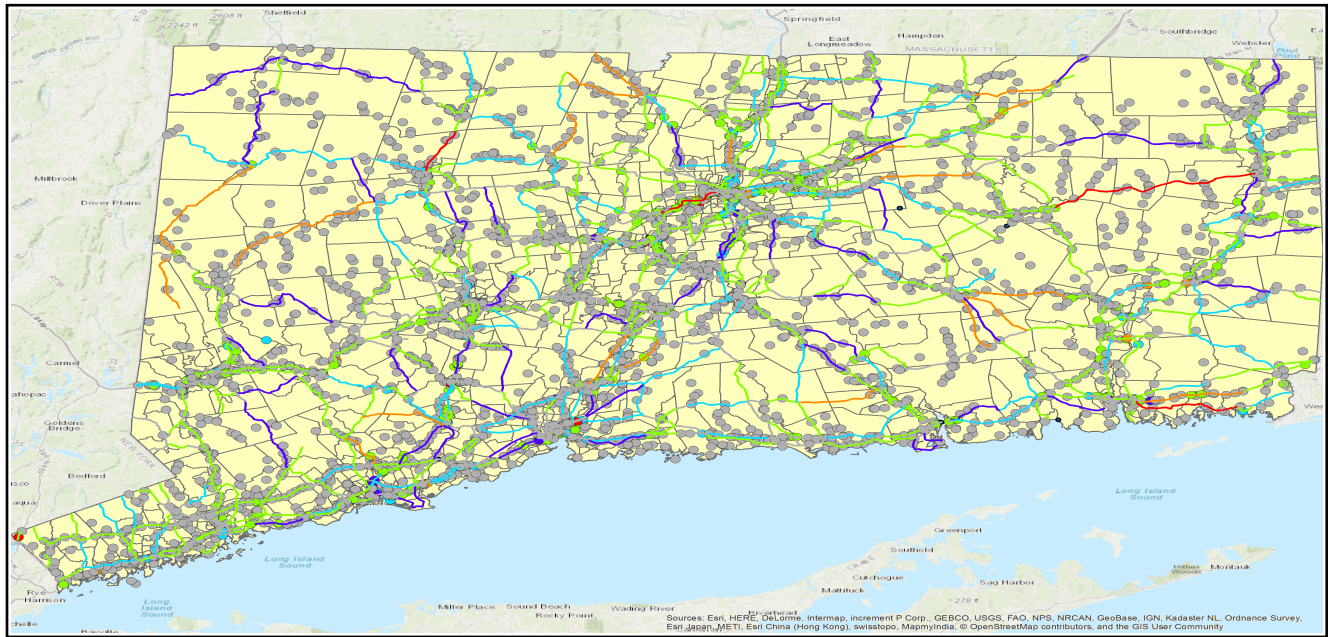


Table 6: Expected Damage to the Transportation Systems

System	Component	Number of Locations_				
		Locations/ Segments	With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	2,070	0	0	2,070	2,070
	Bridges	3,818	369	47	3,472	3,654
	Tunnels	1	0	0	1	1
Railways	Segments	440	0	0	440	440
	Bridges	63	0	0	63	63
	Tunnels	0	0	0	0	0
	Facilities	20	0	0	20	20
Light Rail	Segments	17	0	0	17	17
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	9	0	0	9	9
Bus	Facilities	61	1	0	60	60
Ferry	Facilities	10	2	0	8	8
Port	Facilities	96	9	0	89	91
Airport	Facilities	13	1	0	13	13
	Runways	21	0	0	21	21

Table 6 provides damage estimates for the transportation system.

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 7-9 provide information on the damage to the utility lifeline systems. Table 7 provides damage to the utility system facilities. Table 8 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, Hazus performs a simplified system performance analysis. Table 9 provides a summary of the system performance information.

Table 7 : Expected Utility System Facility Damage

System	# of Locations				
	Total #	With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	11	0	0	11	11
Waste Water	85	6	0	57	84
Natural Gas	3	0	0	2	3
Oil Systems	1	1	0	0	1
Electrical Power	27	4	0	14	26
Communication	113	12	0	113	113

Table 8 : Expected Utility System Pipeline Damage (Site Specific)

System	Total Pipelines Length (kms)	Number of Leaks	Number of Breaks
Potable Water	141,561	16240	4060
Waste Water	84,936	11639	2910
Natural Gas	56,624	3338	835
Oil	0	0	0

Table 9: Expected Potable Water and Electric Power System Performance

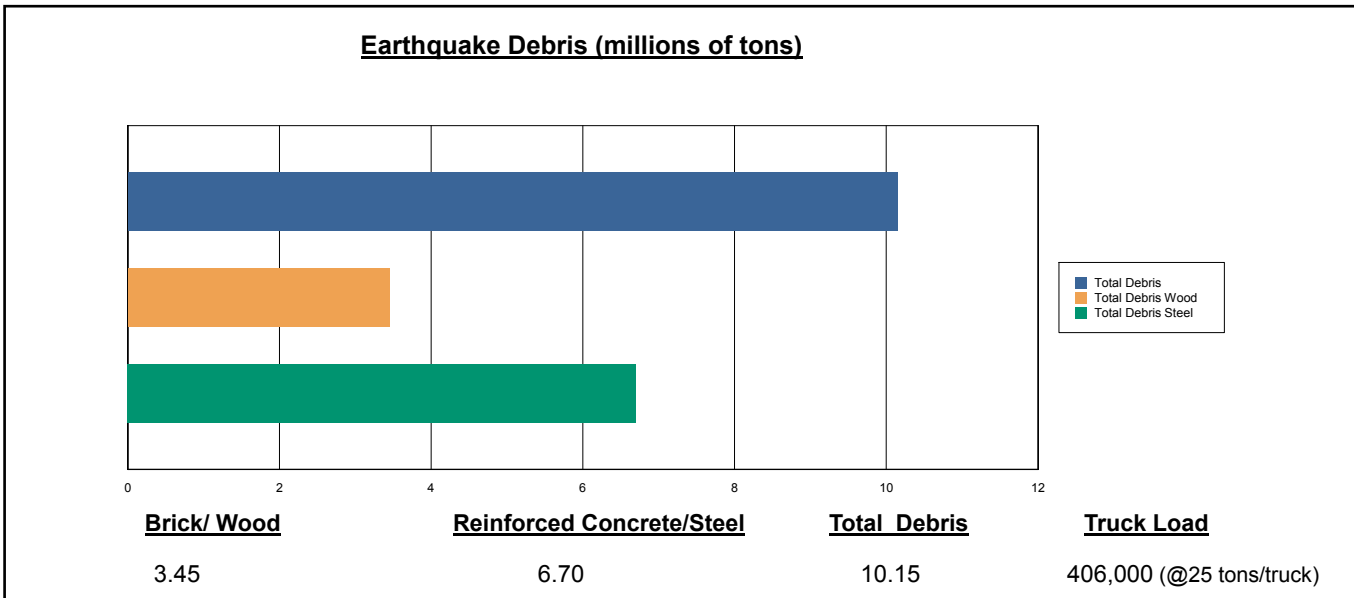
	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	1,371,087	117,678	103,618	80,818	1,123	0
Electric Power		94,676	57,716	23,813	5,189	123

Induced Earthquake Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

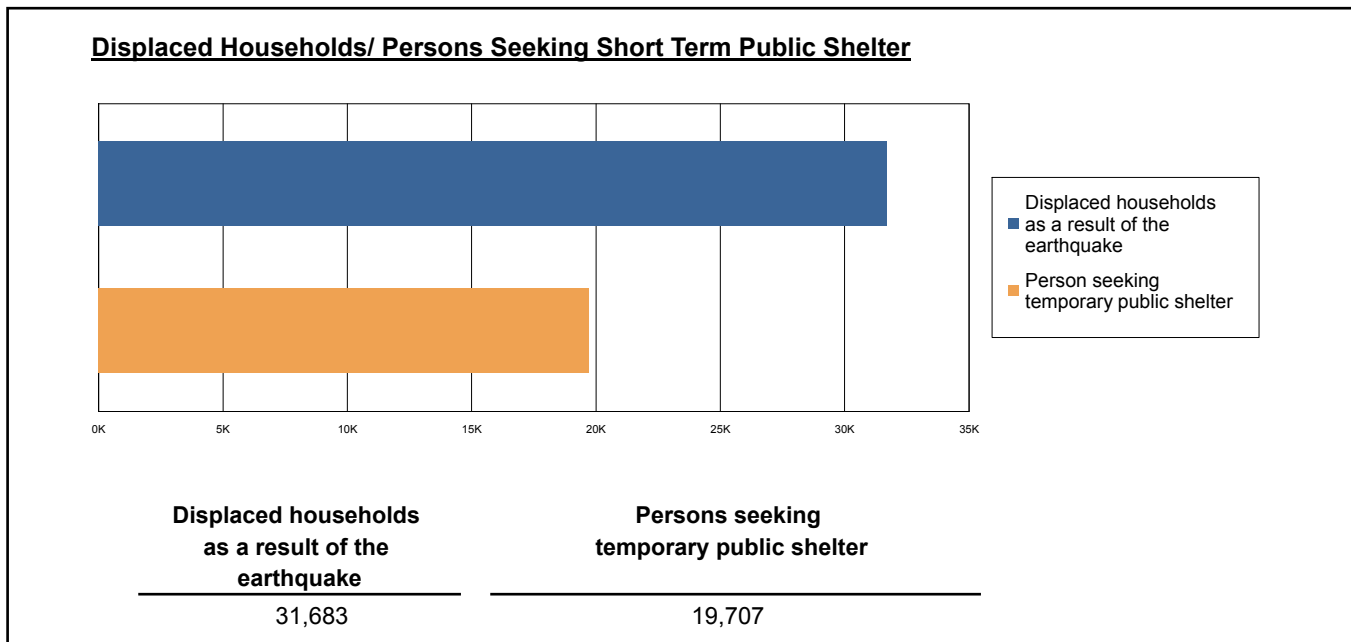
The model estimates that a total of 10.15 million tons of debris will be generated. Of the total amount, Brick/Wood comprises 34.00% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 406,000 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.



Social Impact

Shelter Requirement

Hazus estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 31,683 households to be displaced due to the earthquake. Of these, 19,707 people (out of a total population of 3,574,097) will seek temporary shelter in public shelters.



Casualties

Hazus estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening if not promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 10 provides a summary of the casualties estimated for this earthquake

Table 10: Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Commercial	178	48	7	14
	Commuting	1	1	2	0
	Educational	0	0	0	0
	Hotels	0	0	0	0
	Industrial	295	82	12	24
	Other-Residential	3,396	881	132	259
	Single Family	1,607	303	34	67
	Total	5,477	1,315	187	364
2 PM	Commercial	10,094	2,728	398	777
	Commuting	7	9	15	3
	Educational	4,527	1,274	201	391
	Hotels	0	0	0	0
	Industrial	2,183	609	92	179
	Other-Residential	666	172	26	49
	Single Family	306	59	7	13
	Total	17,782	4,852	740	1,412
5 PM	Commercial	7,163	1,939	286	549
	Commuting	135	184	306	60
	Educational	551	154	24	47
	Hotels	0	0	0	0
	Industrial	1,364	381	57	112
	Other-Residential	1,326	345	53	100
	Single Family	634	124	15	28
	Total	11,173	3,127	742	895

Economic Loss

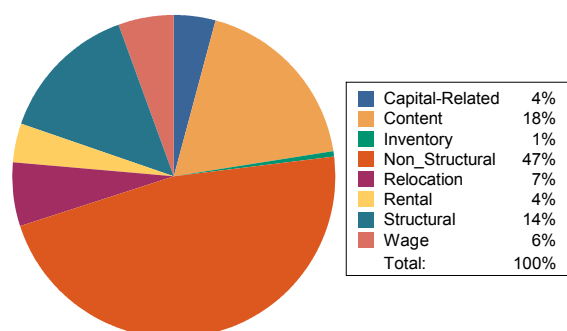
The total economic loss estimated for the earthquake is 44,065.32 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 39,426.62 (millions of dollars); 20 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 39 % of the total loss. Table 11 below provides a summary of the losses associated with the building damage.

Earthquake Losses by Loss Type (\$ millions)



Earthquake Losses by Occupancy Type (\$ millions)

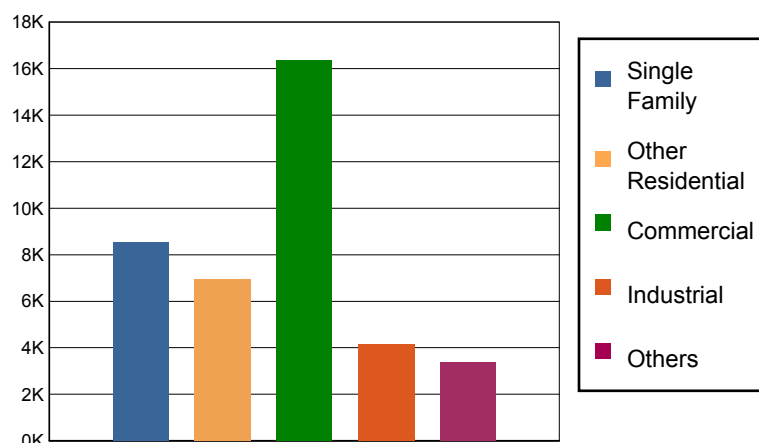


Table 11: Building-Related Economic Loss Estimates
(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.00	257.36	1,700.21	86.15	129.80	2,173.52
	Capital-Related	0.00	109.70	1,461.00	53.22	30.67	1,654.58
	Rental	159.00	499.28	721.31	29.76	55.03	1,464.37
	Relocation	554.08	272.34	1,184.14	144.91	427.50	2,582.97
	Subtotal	713.08	1,138.68	5,066.66	314.03	643.00	7,875.45
Capital Stock Losses							
	Structural	1,075.95	986.34	2,386.11	629.11	565.75	5,643.26
	Non_Structural	5,025.48	3,935.66	6,135.60	1,879.73	1,498.69	18,475.17
	Content	1,741.30	878.60	2,727.48	1,156.17	673.67	7,177.21
	Inventory	0.00	0.00	59.22	185.68	10.63	255.53
	Subtotal	7,842.72	5,800.59	11,308.41	3,850.69	2,748.75	31,551.17
	Total	8,555.80	6,939.27	16,375.08	4,164.72	3,391.75	39,426.62

Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, Hazus computes the direct repair cost for each component only. There are no losses computed by Hazus for business interruption due to lifeline outages. Tables 12 & 13 provide a detailed breakdown in the expected lifeline losses.

Table 12: Transportation System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	27,492.45	\$0.00	0.00
	Bridges	57,716.28	\$3630.55	6.29
	Tunnels	0.34	\$0.00	0.24
	Subtotal	85,209	3,630.50	
Railways	Segments	1,034.75	\$0.00	0.00
	Bridges	7.62	\$0.12	1.57
	Tunnels	0.00	\$0.00	0.00
	Facilities	53.26	\$7.79	14.63
	Subtotal	1,096	7.90	
Light Rail	Segments	204.42	\$0.00	0.00
	Bridges	0.00	\$0.00	0.00
	Tunnels	0.00	\$0.00	0.00
	Facilities	23.97	\$4.88	20.37
	Subtotal	228	4.90	
Bus	Facilities	76.46	\$9.27	12.12
	Subtotal	76	9.30	
Ferry	Facilities	13.31	\$3.33	25.00
	Subtotal	13	3.30	
Port	Facilities	191.71	\$39.79	20.75
	Subtotal	192	39.80	
Airport	Facilities	138.46	\$20.72	14.97
	Runways	797.24	\$0.00	0.00
	Subtotal	936	20.70	
	Total	87,750.30	3,716.50	

Table 13: Utility System Economic Losses

(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.00	\$0.00	0.00
	Facilities	421.20	\$26.31	6.25
	Distribution Lines	2,831.20	\$73.08	2.58
	Subtotal	3,252.46	\$99.39	
Waste Water	Pipelines	0.00	\$0.00	0.00
	Facilities	6,510.20	\$405.05	6.22
	Distribution Lines	1,698.70	\$52.38	3.08
	Subtotal	8,208.88	\$457.43	
Natural Gas	Pipelines	0.00	\$0.00	0.00
	Facilities	3.80	\$0.41	10.88
	Distribution Lines	1,132.50	\$15.02	1.33
	Subtotal	1,136.25	\$15.43	
Oil Systems	Pipelines	0.00	\$0.00	0.00
	Facilities	0.10	\$0.03	21.74
	Subtotal	0.12	\$0.03	
Electrical Power	Facilities	3,415.50	\$349.04	10.22
	Subtotal	3,415.50	\$349.04	
Communication	Facilities	13.00	\$0.94	7.20
	Subtotal	13.00	\$0.94	
	Total	16,026.19	\$922.25	

Appendix A: County Listing for the Region

Fairfield,CT

Hartford,CT

Litchfield,CT

Middlesex,CT

New Haven,CT

New London,CT

Tolland,CT

Windham,CT

Appendix B: Regional Population and Building Value Data

State	County Name	Population	Building Value (millions of dollars)		
			Residential	Non-Residential	Total
Connecticut	Fairfield	916,829	92,896	38,506	131,402
	Hartford	894,014	84,874	35,200	120,074
	Litchfield	189,927	20,467	7,244	27,712
	Middlesex	165,676	18,596	6,503	25,099
	New Haven	862,477	79,934	34,971	114,905
	New London	274,055	28,202	8,383	36,586
	Tolland	152,691	15,136	3,292	18,428
	Windham	118,428	10,508	3,523	14,031
Total State		3,574,097	350,613	137,622	488,237
Total Region		3,574,097	350,613	137,622	488,237

Hazus-MH: Earthquake Global Risk Report

Region Name: Haddam_57

Earthquake Scenario: RERUN_Haddam_5.7

Print Date: January 19, 2018

Disclaimer:

*This version of Hazus utilizes 2010 Census Data.
Totals only reflect data for those census tracts/blocks included in the user's study region.*

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geotechnical, and observed ground motion data.

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General Description of the Region

Hazus is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop earthquake losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from earthquakes and to prepare for emergency response and recovery.

The earthquake loss estimates provided in this report was based on a region that includes 8 county(ies) from the following state(s):

Connecticut

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 4,965.43 square miles and contains 829 census tracts. There are over 1,371 thousand households in the region which has a total population of 3,574,097 people (2010 Census Bureau data). The distribution of population by State and County is provided in Appendix B.

There are an estimated 1,218 thousand buildings in the region with a total building replacement value (excluding contents) of 488,242 (millions of dollars). Approximately 90.00 % of the buildings (and 72.00% of the building value) are associated with residential housing.

The replacement value of the transportation and utility lifeline systems is estimated to be 87,750 and 16,026 (millions of dollars) , respectively.

Building and Lifeline Inventory

Building Inventory

Hazus estimates that there are 1,218 thousand buildings in the region which have an aggregate total replacement value of 488,242 (millions of dollars). Appendix B provides a general distribution of the building value by State and County.

In terms of building construction types found in the region, wood frame construction makes up 84% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

Hazus breaks critical facilities into two (2) groups: essential facilities and high potential loss facilities (HPL). Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 49 hospitals in the region with a total bed capacity of 9,422 beds. There are 1,501 schools, 301 fire stations, 199 police stations and 43 emergency operation facilities. With respect to high potential loss facilities (HPL), there are 0 dams identified within the inventory. Of these, 0 of the dams are classified as 'high hazard'. The inventory also includes 905 hazardous material sites, 0 military installations and 2 nuclear power plants.

Transportation and Utility Lifeline Inventory

Within Hazus, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail, bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data are provided in Tables 1 and 2.

The total value of the lifeline inventory is over 103,776.00 (millions of dollars). This inventory includes over 4,431 kilometers of highways, 3,818 bridges, 283,121 kilometers of pipes.

Table 1: Transportation System Lifeline Inventory

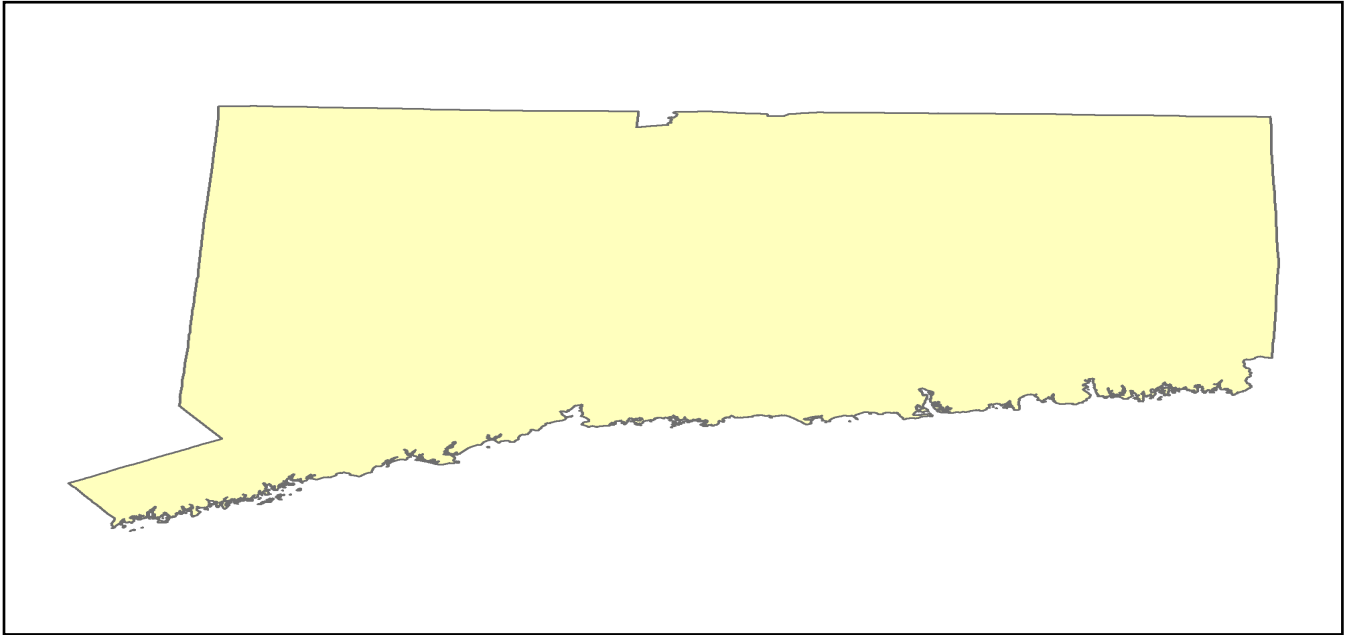
System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
Highway	Bridges	3,818	57,716.30
	Segments	2,070	27,492.50
	Tunnels	1	0.30
	Subtotal		85,209.10
Railways	Bridges	63	7.60
	Facilities	20	53.30
	Segments	440	1,034.70
	Tunnels	0	0.00
	Subtotal		1,095.60
Light Rail	Bridges	0	0.00
	Facilities	9	24.00
	Segments	17	204.40
	Tunnels	0	0.00
	Subtotal		228.40
Bus	Facilities	61	76.50
	Subtotal		76.50
Ferry	Facilities	10	13.30
	Subtotal		13.30
Port	Facilities	96	191.70
	Subtotal		191.70
Airport	Facilities	13	138.50
	Runways	21	797.20
	Subtotal		935.70
Total			87,750.30

Table 2: Utility System Lifeline Inventory

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	2,831.20
	Facilities	11	421.20
	Pipelines	0	0.00
	Subtotal		3,252.50
Waste Water	Distribution Lines	NA	1,698.70
	Facilities	85	6,510.20
	Pipelines	0	0.00
	Subtotal		8,208.90
Natural Gas	Distribution Lines	NA	1,132.50
	Facilities	3	3.80
	Pipelines	0	0.00
	Subtotal		1,136.20
Oil Systems	Facilities	1	0.10
	Pipelines	0	0.00
	Subtotal		0.10
Electrical Power	Facilities	27	3,415.50
	Subtotal		3,415.50
Communication	Facilities	113	13.00
	Subtotal		13.00
	Total		16,026.20

Earthquake Scenario

Hazus uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.



Scenario Name	RERUN_Haddam_5.7
Type of Earthquake	Arbitrary
Fault Name	NA
Historical Epicenter ID #	NA
Probabilistic Return Period	NA
Longitude of Epicenter	-72.50
Latitude of Epicenter	41.50
Earthquake Magnitude	5.70
Depth (km)	10.00
Rupture Length (Km)	NA
Rupture Orientation (degrees)	NA
Attenuation Function	Central & East US (CEUS 2008)

Building Damage

Building Damage

Hazus estimates that about 58,188 buildings will be at least moderately damaged. This is over 5.00 % of the buildings in the region. There are an estimated 3,587 buildings that will be damaged beyond repair. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 below summarizes the expected damage by general building type.

Damage categories by General Occupancy Type

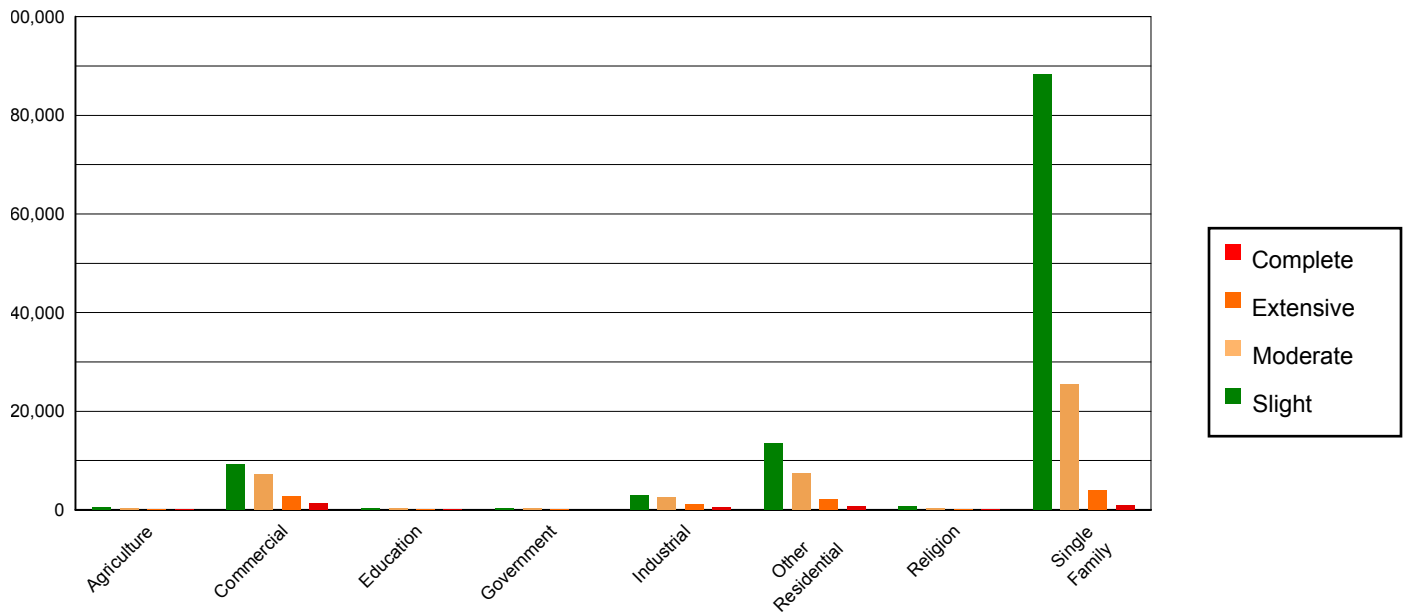


Table 3: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	3,667	0.35	585	0.50	411	0.93	161	1.54	74	2.05
Commercial	59,689	5.71	9,347	8.07	7,171	16.25	2,711	25.90	1,226	34.16
Education	2,533	0.24	390	0.34	304	0.69	112	1.07	57	1.58
Government	1,653	0.16	287	0.25	247	0.56	89	0.85	34	0.94
Industrial	19,361	1.85	2,914	2.52	2,519	5.71	1,047	10.01	532	14.82
Other Residential	103,816	9.93	13,368	11.54	7,525	17.05	2,236	21.37	779	21.71
Religion	5,143	0.49	684	0.59	428	0.97	146	1.40	60	1.68
Single Family	849,123	81.26	88,223	76.19	25,531	57.85	3,962	37.86	827	23.05
Total	1,044,983		115,797		44,136		10,465		3,588	

Table 4: Expected Building Damage by Building Type (All Design Levels)

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Wood	902,103	86.33	91494	79.01	24,314	55.09	3,043	29.08	318	8.88
Steel	42,767	4.09	6526	5.64	6,271	14.21	2,569	24.54	1,268	35.35
Concrete	9,258	0.89	1419	1.23	1,352	3.06	487	4.65	229	6.39
Precast	2,976	0.28	404	0.35	452	1.03	224	2.14	86	2.40
RM	16,237	1.55	1516	1.31	1,461	3.31	622	5.94	186	5.18
URM	63,866	6.11	12273	10.60	8,171	18.51	2,769	26.46	1,204	33.56
MH	7,776	0.74	2165	1.87	2,115	4.79	752	7.19	296	8.25
Total	1,044,983		115,797		44,136		10,465		3,588	

*Note:

RM Reinforced Masonry
URM Unreinforced Masonry
MH Manufactured Housing

Essential Facility Damage

Before the earthquake, the region had 9,422 hospital beds available for use. On the day of the earthquake, the model estimates that only 6,204 hospital beds (66.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 81.00% of the beds will be back in service. By 30 days, 92.00% will be operational.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on day 1
Hospitals	49	4	0	43
Schools	1,501	57	13	1,361
EOCs	43	4	0	36
PoliceStations	199	9	3	179
FireStations	301	14	2	264

Transportation Lifeline Damage

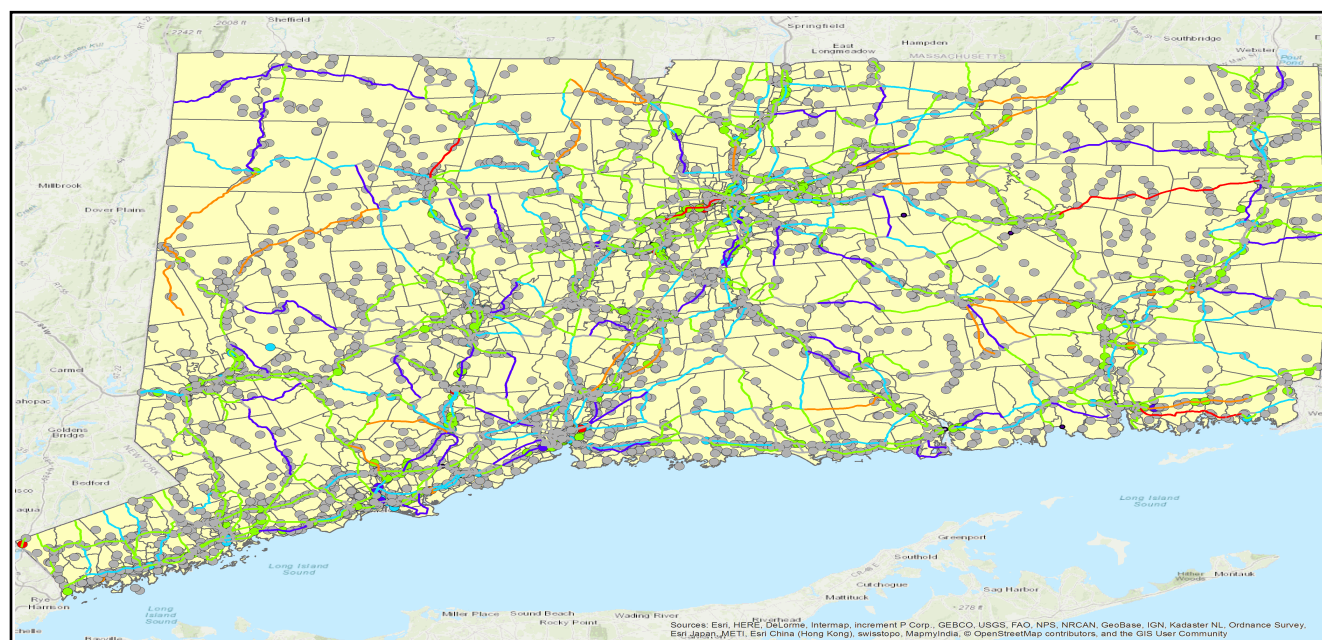


Table 6: Expected Damage to the Transportation Systems

System	Component	Number of Locations_				
		Locations/ Segments	With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	2,070	0	0	2,070	2,070
	Bridges	3,818	66	7	3,756	3,776
	Tunnels	1	0	0	1	1
Railways	Segments	440	0	0	440	440
	Bridges	63	0	0	63	63
	Tunnels	0	0	0	0	0
	Facilities	20	0	0	20	20
Light Rail	Segments	17	0	0	17	17
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	9	0	0	9	9
Bus	Facilities	61	2	0	61	61
Ferry	Facilities	10	2	0	8	10
Port	Facilities	96	13	0	89	96
Airport	Facilities	13	1	0	13	13
	Runways	21	0	0	21	21

Table 6 provides damage estimates for the transportation system.

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 7-9 provide information on the damage to the utility lifeline systems. Table 7 provides damage to the utility system facilities. Table 8 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, Hazus performs a simplified system performance analysis. Table 9 provides a summary of the system performance information.

Table 7 : Expected Utility System Facility Damage

System	# of Locations				
	Total #	With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	11	0	0	11	11
Waste Water	85	4	0	79	84
Natural Gas	3	0	0	3	3
Oil Systems	1	1	0	0	1
Electrical Power	27	2	0	25	27
Communication	113	3	0	112	113

Table 8 : Expected Utility System Pipeline Damage (Site Specific)

System	Total Pipelines Length (kms)	Number of Leaks	Number of Breaks
Potable Water	141,561	4677	1169
Waste Water	84,936	3352	838
Natural Gas	56,624	961	240
Oil	0	0	0

Table 9: Expected Potable Water and Electric Power System Performance

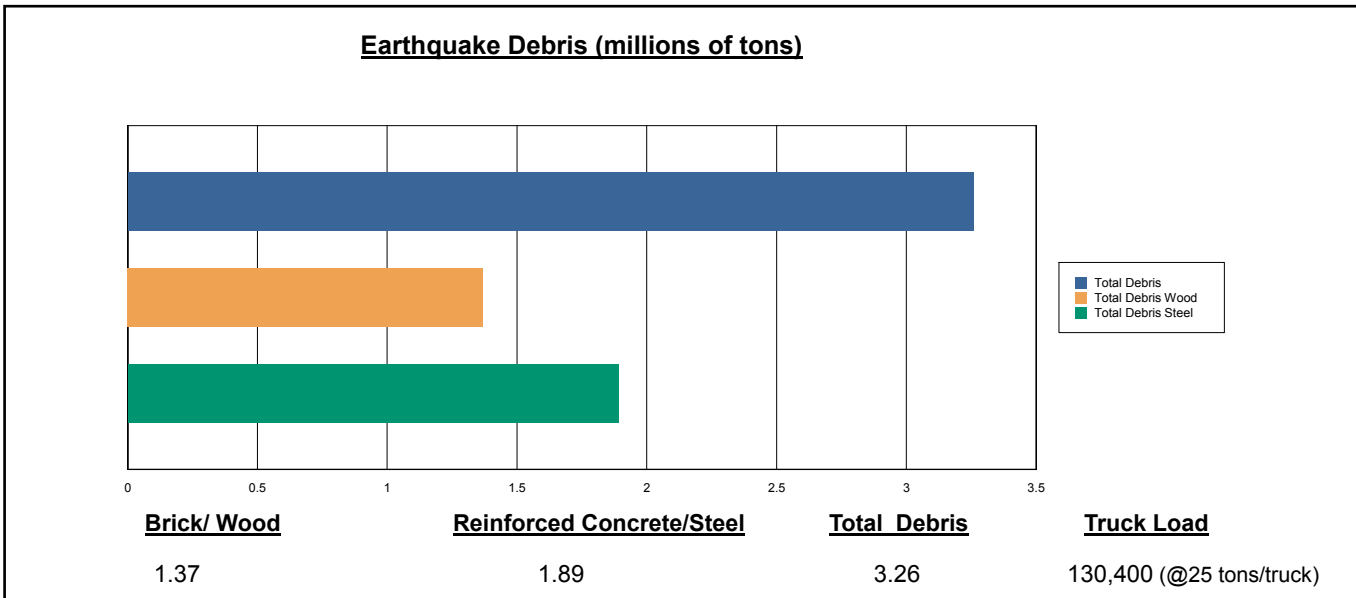
	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	1,371,087	16,100	11,908	4,909	0	0
Electric Power		42,077	26,693	11,037	2,123	52

Induced Earthquake Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

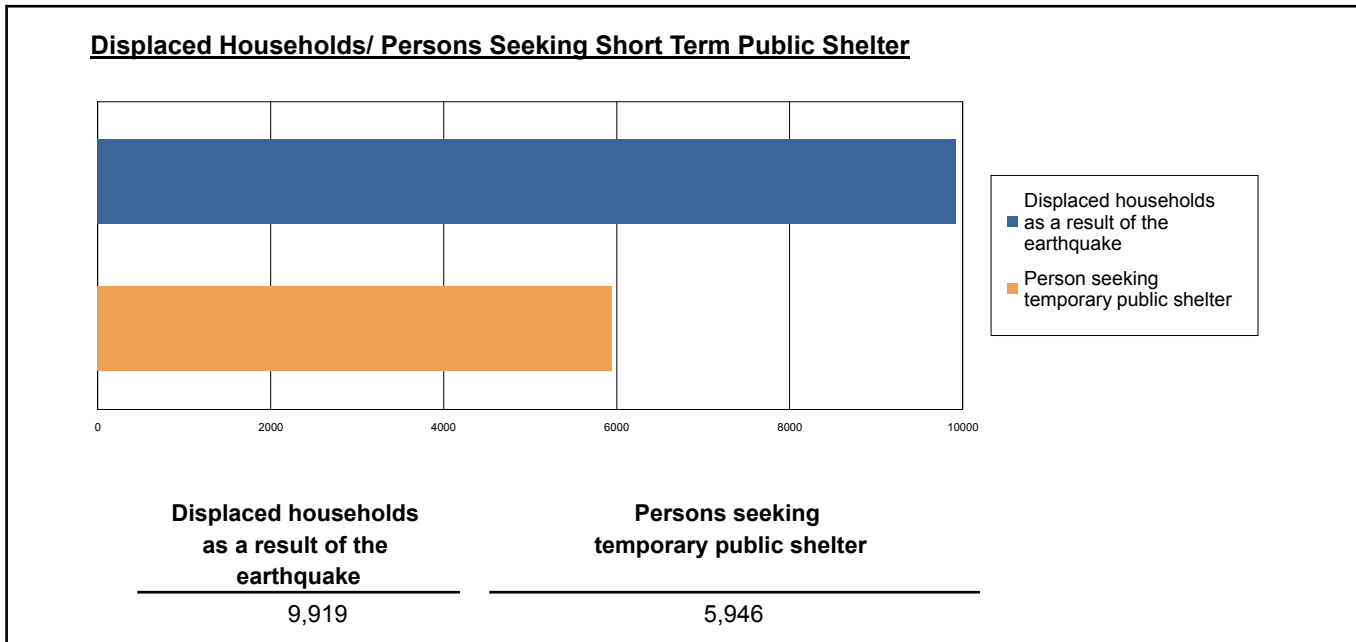
The model estimates that a total of 3.26 million tons of debris will be generated. Of the total amount, Brick/Wood comprises 42.00% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 130,400 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.



Social Impact

Shelter Requirement

Hazus estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 9,919 households to be displaced due to the earthquake. Of these, 5,946 people (out of a total population of 3,574,097) will seek temporary shelter in public shelters.



Casualties

Hazus estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening if not promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 10 provides a summary of the casualties estimated for this earthquake

Table 10: Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Commercial	51	13	2	3
	Commuting	0	0	0	0
	Educational	0	0	0	0
	Hotels	0	0	0	0
	Industrial	83	22	3	6
	Other-Residential	1,008	234	33	65
	Single Family	629	108	12	23
	Total	1,770	376	50	98
2 PM	Commercial	2,858	710	100	195
	Commuting	1	2	3	1
	Educational	1,264	330	50	97
	Hotels	0	0	0	0
	Industrial	616	159	23	45
	Other-Residential	200	47	7	13
	Single Family	118	21	2	5
	Total	5,057	1,269	186	355
5 PM	Commercial	2,035	508	72	139
	Commuting	29	38	66	13
	Educational	152	40	6	12
	Hotels	0	0	0	0
	Industrial	385	100	15	28
	Other-Residential	396	93	13	25
	Single Family	246	44	5	10
	Total	3,243	822	177	226

Economic Loss

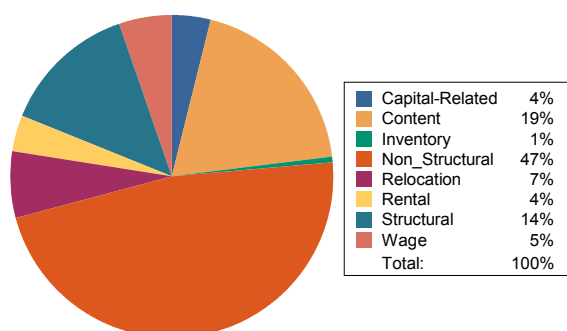
The total economic loss estimated for the earthquake is 15,195.21 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 13,714.61 (millions of dollars); 19 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 44 % of the total loss. Table 11 below provides a summary of the losses associated with the building damage.

Earthquake Losses by Loss Type (\$ millions)



Earthquake Losses by Occupancy Type (\$ millions)

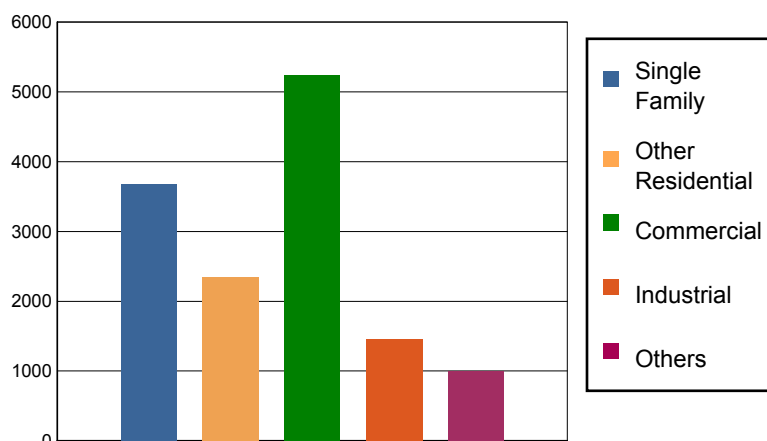


Table 11: Building-Related Economic Loss Estimates
(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.00	80.62	570.70	31.05	37.75	720.12
	Capital-Related	0.00	34.36	472.81	19.07	9.18	535.42
	Rental	63.80	168.67	241.69	11.00	15.51	500.68
	Relocation	220.06	98.13	407.93	53.94	130.83	910.89
	Subtotal	283.86	381.78	1,693.13	115.07	193.27	2,667.11
Capital Stock Losses							
	Structural	445.93	321.34	730.40	214.98	165.40	1,878.05
	Non_Structural	2,159.05	1,326.64	1,890.86	646.35	433.29	6,456.19
	Content	785.63	317.72	902.85	412.28	205.32	2,623.80
	Inventory	0.00	0.00	16.53	70.37	2.56	89.46
	Subtotal	3,390.61	1,965.70	3,540.64	1,343.99	806.57	11,047.50
	Total	3,674.47	2,347.48	5,233.77	1,459.05	999.84	13,714.61

Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, Hazus computes the direct repair cost for each component only. There are no losses computed by Hazus for business interruption due to lifeline outages. Tables 12 & 13 provide a detailed breakdown in the expected lifeline losses.

Table 12: Transportation System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	27,492.45	\$0.00	0.00
	Bridges	57,716.28	\$947.78	1.64
	Tunnels	0.34	\$0.00	0.03
	Subtotal	85,209	947.80	
Railways	Segments	1,034.75	\$0.00	0.00
	Bridges	7.62	\$0.05	0.60
	Tunnels	0.00	\$0.00	0.00
	Facilities	53.26	\$4.11	7.72
	Subtotal	1,096	4.20	
Light Rail	Segments	204.42	\$0.00	0.00
	Bridges	0.00	\$0.00	0.00
	Tunnels	0.00	\$0.00	0.00
	Facilities	23.97	\$2.87	11.98
	Subtotal	228	2.90	
Bus	Facilities	76.46	\$5.17	6.77
	Subtotal	76	5.20	
Ferry	Facilities	13.31	\$2.12	15.93
	Subtotal	13	2.10	
Port	Facilities	191.71	\$25.45	13.27
	Subtotal	192	25.40	
Airport	Facilities	138.46	\$13.05	9.43
	Runways	797.24	\$0.00	0.00
	Subtotal	936	13.10	
	Total	87,750.30	1,000.60	

Table 13: Utility System Economic Losses

(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.00	\$0.00	0.00
	Facilities	421.20	\$12.65	3.00
	Distribution Lines	2,831.20	\$21.05	0.74
	Subtotal	3,252.46	\$33.70	
Waste Water	Pipelines	0.00	\$0.00	0.00
	Facilities	6,510.20	\$206.52	3.17
	Distribution Lines	1,698.70	\$15.08	0.89
	Subtotal	8,208.88	\$221.60	
Natural Gas	Pipelines	0.00	\$0.00	0.00
	Facilities	3.80	\$0.21	5.59
	Distribution Lines	1,132.50	\$4.33	0.38
	Subtotal	1,136.25	\$4.54	
Oil Systems	Pipelines	0.00	\$0.00	0.00
	Facilities	0.10	\$0.03	26.43
	Subtotal	0.12	\$0.03	
Electrical Power	Facilities	3,415.50	\$219.67	6.43
	Subtotal	3,415.50	\$219.67	
Communication	Facilities	13.00	\$0.44	3.36
	Subtotal	13.00	\$0.44	
	Total	16,026.19	\$479.98	

Appendix A: County Listing for the Region

Fairfield,CT

Hartford,CT

Litchfield,CT

Middlesex,CT

New Haven,CT

New London,CT

Tolland,CT

Windham,CT

Appendix B: Regional Population and Building Value Data

State	County Name	Population	Building Value (millions of dollars)		
			Residential	Non-Residential	Total
Connecticut	Fairfield	916,829	92,896	38,506	131,402
	Hartford	894,014	84,874	35,200	120,074
	Litchfield	189,927	20,467	7,244	27,712
	Middlesex	165,676	18,596	6,503	25,099
	New Haven	862,477	79,934	34,971	114,905
	New London	274,055	28,202	8,383	36,586
	Tolland	152,691	15,136	3,292	18,428
	Windham	118,428	10,508	3,523	14,031
Total State		3,574,097	350,613	137,622	488,237
Total Region		3,574,097	350,613	137,622	488,237

Hazus-MH: Earthquake Global Risk Report

Region Name: Portland_57_4

Earthquake Scenario: RERUN_Portland_57_4

Print Date: January 19, 2018

Disclaimer:

*This version of Hazus utilizes 2010 Census Data.
Totals only reflect data for those census tracts/blocks included in the user's study region.*

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geotechnical, and observed ground motion data.

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General Description of the Region

Hazus is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop earthquake losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from earthquakes and to prepare for emergency response and recovery.

The earthquake loss estimates provided in this report was based on a region that includes 8 county(ies) from the following state(s):

Connecticut

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 4,965.43 square miles and contains 829 census tracts. There are over 1,371 thousand households in the region which has a total population of 3,574,097 people (2010 Census Bureau data). The distribution of population by State and County is provided in Appendix B.

There are an estimated 1,218 thousand buildings in the region with a total building replacement value (excluding contents) of 488,242 (millions of dollars). Approximately 90.00 % of the buildings (and 72.00% of the building value) are associated with residential housing.

The replacement value of the transportation and utility lifeline systems is estimated to be 87,750 and 16,026 (millions of dollars) , respectively.

Building and Lifeline Inventory

Building Inventory

Hazus estimates that there are 1,218 thousand buildings in the region which have an aggregate total replacement value of 488,242 (millions of dollars). Appendix B provides a general distribution of the building value by State and County.

In terms of building construction types found in the region, wood frame construction makes up 84% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

Hazus breaks critical facilities into two (2) groups: essential facilities and high potential loss facilities (HPL). Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 49 hospitals in the region with a total bed capacity of 9,422 beds. There are 1,501 schools, 301 fire stations, 199 police stations and 43 emergency operation facilities. With respect to high potential loss facilities (HPL), there are 0 dams identified within the inventory. Of these, 0 of the dams are classified as 'high hazard'. The inventory also includes 905 hazardous material sites, 0 military installations and 2 nuclear power plants.

Transportation and Utility Lifeline Inventory

Within Hazus, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail, bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data are provided in Tables 1 and 2.

The total value of the lifeline inventory is over 103,776.00 (millions of dollars). This inventory includes over 4,431 kilometers of highways, 3,818 bridges, 283,121 kilometers of pipes.

Table 1: Transportation System Lifeline Inventory

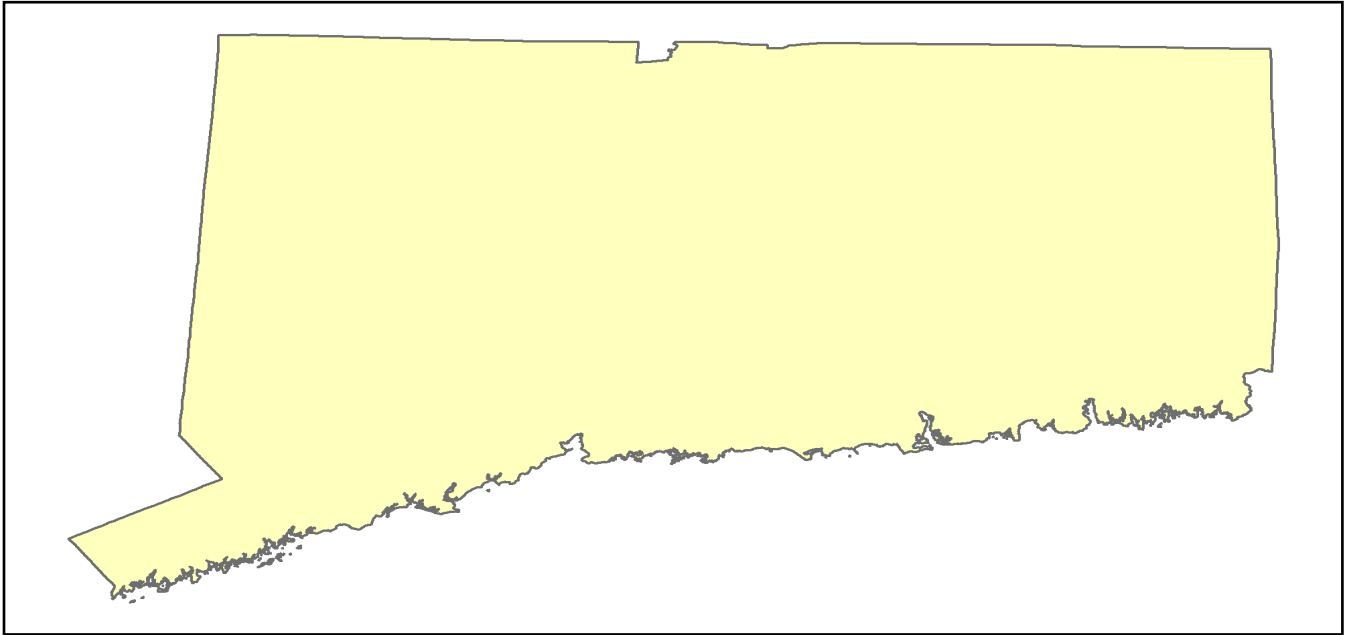
System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
Highway	Bridges	3,818	57,716.30
	Segments	2,070	27,492.50
	Tunnels	1	0.30
	Subtotal		85,209.10
Railways	Bridges	63	7.60
	Facilities	20	53.30
	Segments	440	1,034.70
	Tunnels	0	0.00
	Subtotal		1,095.60
Light Rail	Bridges	0	0.00
	Facilities	9	24.00
	Segments	17	204.40
	Tunnels	0	0.00
	Subtotal		228.40
Bus	Facilities	61	76.50
	Subtotal		76.50
Ferry	Facilities	10	13.30
	Subtotal		13.30
Port	Facilities	96	191.70
	Subtotal		191.70
Airport	Facilities	13	138.50
	Runways	21	797.20
	Subtotal		935.70
		Total	87,750.30

Table 2: Utility System Lifeline Inventory

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	2,831.20
	Facilities	11	421.20
	Pipelines	0	0.00
	Subtotal		3,252.50
Waste Water	Distribution Lines	NA	1,698.70
	Facilities	85	6,510.20
	Pipelines	0	0.00
	Subtotal		8,208.90
Natural Gas	Distribution Lines	NA	1,132.50
	Facilities	3	3.80
	Pipelines	0	0.00
	Subtotal		1,136.20
Oil Systems	Facilities	1	0.10
	Pipelines	0	0.00
	Subtotal		0.10
Electrical Power	Facilities	27	3,415.50
	Subtotal		3,415.50
Communication	Facilities	113	13.00
	Subtotal		13.00
	Total		16,026.20

Earthquake Scenario

Hazus uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.



Scenario Name	RERUN_Portland_57_4
Type of Earthquake	Arbitrary
Fault Name	NA
Historical Epicenter ID #	NA
Probabilistic Return Period	NA
Longitude of Epicenter	-72.60
Latitude of Epicenter	41.60
Earthquake Magnitude	5.70
Depth (km)	10.00
Rupture Length (Km)	NA
Rupture Orientation (degrees)	NA
Attenuation Function	Central & East US (CEUS 2008)

Building Damage

Building Damage

Hazus estimates that about 89,121 buildings will be at least moderately damaged. This is over 7.00 % of the buildings in the region. There are an estimated 8,221 buildings that will be damaged beyond repair. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 below summarizes the expected damage by general building type.

Damage categories by General Occupancy Type

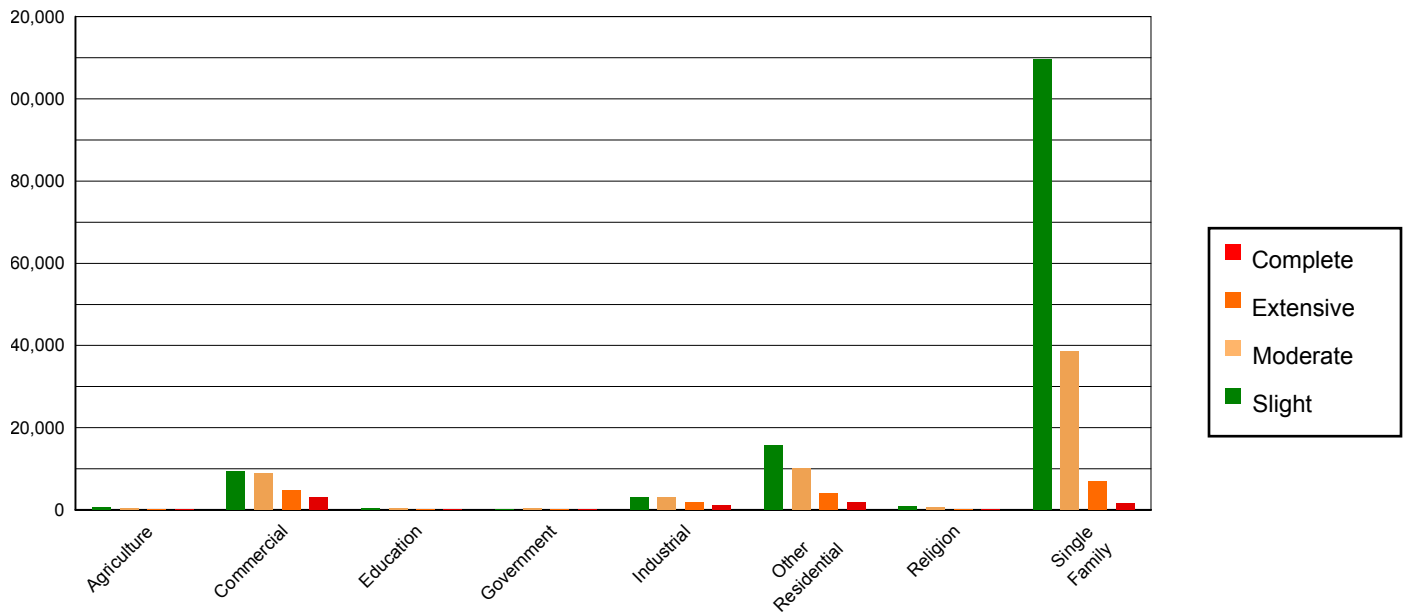


Table 3: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	3,415	0.34	601	0.43	491	0.79	238	1.30	151	1.83
Commercial	53,937	5.45	9,452	6.76	9,001	14.40	4,785	26.05	2,967	36.09
Education	2,312	0.23	392	0.28	373	0.60	194	1.05	125	1.52
Government	1,441	0.15	272	0.19	308	0.49	181	0.99	107	1.30
Industrial	17,591	1.78	2,936	2.10	3,031	4.85	1,714	9.33	1,102	13.40
Other Residential	95,750	9.67	15,781	11.28	10,116	16.18	4,124	22.45	1,953	23.75
Religion	4,754	0.48	753	0.54	547	0.88	257	1.40	150	1.82
Single Family	810,743	81.90	109,716	78.42	38,663	61.83	6,877	37.44	1,666	20.27
Total	989,944		139,903		62,530		18,371		8,222	

Table 4: Expected Building Damage by Building Type (All Design Levels)

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Wood	860,178	86.89	115,434	82.51	38,963	62.31	5,954	32.41	744	9.05
Steel	38,334	3.87	6,246	4.46	7,364	11.78	4,480	24.39	2,976	36.20
Concrete	8,161	0.82	1,327	0.95	1,640	2.62	997	5.43	620	7.54
Precast	2,676	0.27	391	0.28	516	0.82	352	1.92	207	2.51
RM	14,460	1.46	1,589	1.14	2,029	3.24	1,355	7.38	589	7.16
URM	58,532	5.91	12,845	9.18	9,916	15.86	4,313	23.48	2,676	32.55
MH	7,604	0.77	2,071	1.48	2,100	3.36	919	5.00	410	4.99
Total	989,944		139,903		62,530		18,371		8,222	

*Note:

RM Reinforced Masonry
URM Unreinforced Masonry
MH Manufactured Housing

Essential Facility Damage

Before the earthquake, the region had 9,422 hospital beds available for use. On the day of the earthquake, the model estimates that only 5,365 hospital beds (57.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 72.00% of the beds will be back in service. By 30 days, 85.00% will be operational.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on day 1
Hospitals	49	8	5	31
Schools	1,501	139	45	1,166
EOCs	43	6	4	30
PoliceStations	199	14	5	166
FireStations	301	30	10	250

Transportation Lifeline Damage

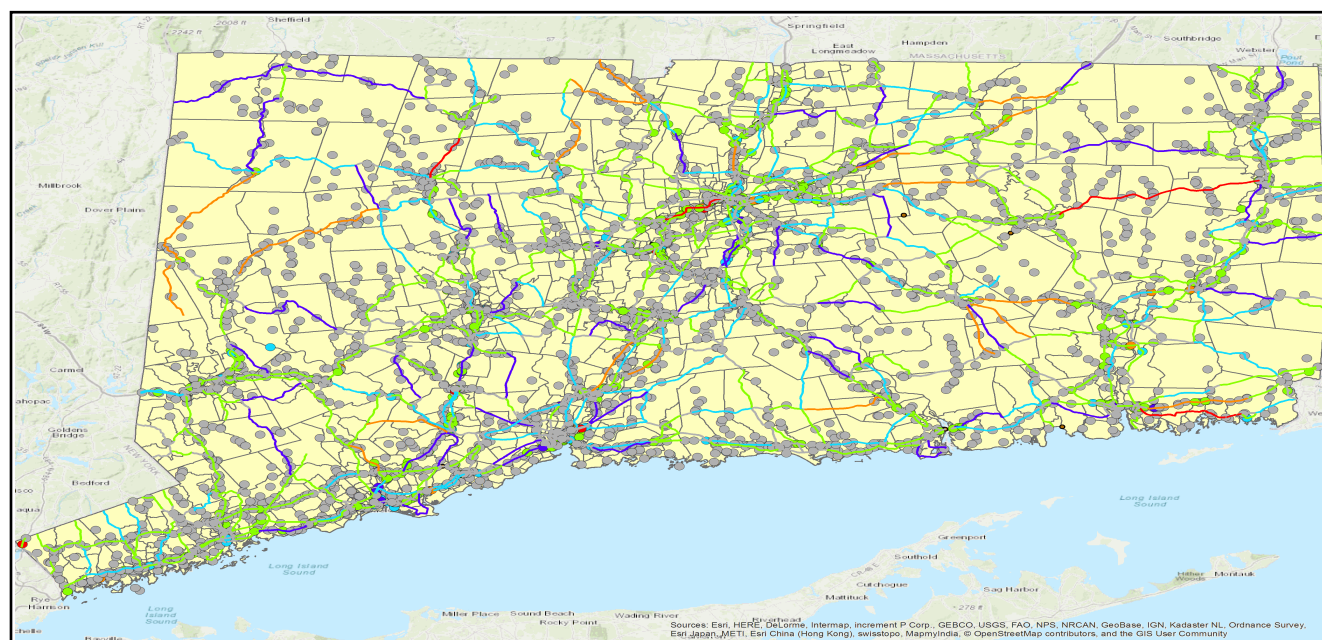


Table 6: Expected Damage to the Transportation Systems

System	Component	Number of Locations_				
		Locations/ Segments	With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	2,070	0	0	2,070	2,070
	Bridges	3,818	127	18	3,698	3,731
	Tunnels	1	0	0	1	1
Railways	Segments	440	0	0	440	440
	Bridges	63	0	0	63	63
	Tunnels	0	0	0	0	0
	Facilities	20	1	0	20	20
Light Rail	Segments	17	0	0	17	17
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	9	0	0	9	9
Bus	Facilities	61	3	0	58	61
Ferry	Facilities	10	2	0	8	10
Port	Facilities	96	12	0	85	96
Airport	Facilities	13	0	0	13	13
	Runways	21	0	0	21	21

Table 6 provides damage estimates for the transportation system.

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 7-9 provide information on the damage to the utility lifeline systems. Table 7 provides damage to the utility system facilities. Table 8 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, Hazus performs a simplified system performance analysis. Table 9 provides a summary of the system performance information.

Table 7 : Expected Utility System Facility Damage

System	# of Locations				
	Total #	With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	11	1	0	10	11
Waste Water	85	7	0	68	80
Natural Gas	3	1	0	2	3
Oil Systems	1	1	0	0	0
Electrical Power	27	7	0	16	27
Communication	113	9	0	109	113

Table 8 : Expected Utility System Pipeline Damage (Site Specific)

System	Total Pipelines Length (kms)	Number of Leaks	Number of Breaks
Potable Water	141,561	8073	2018
Waste Water	84,936	5785	1446
Natural Gas	56,624	1659	415
Oil	0	0	0

Table 9: Expected Potable Water and Electric Power System Performance

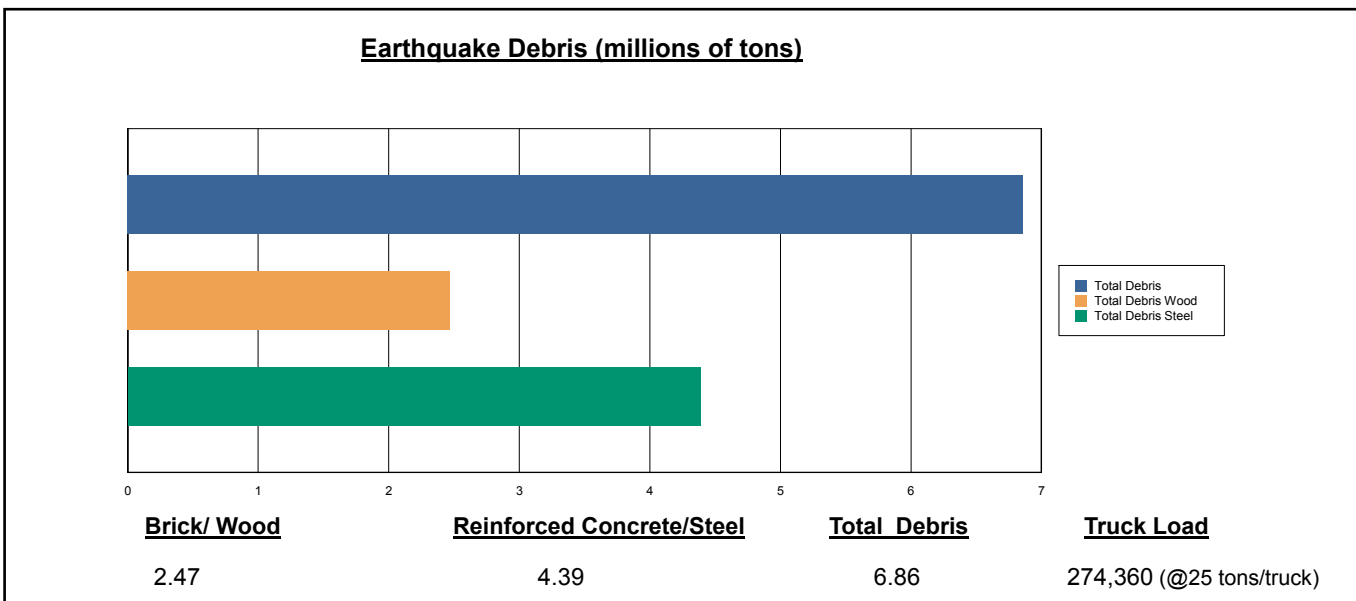
	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	1,371,087	45,811	39,457	27,289	715	0
Electric Power		128,458	79,013	31,668	6,040	165

Induced Earthquake Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

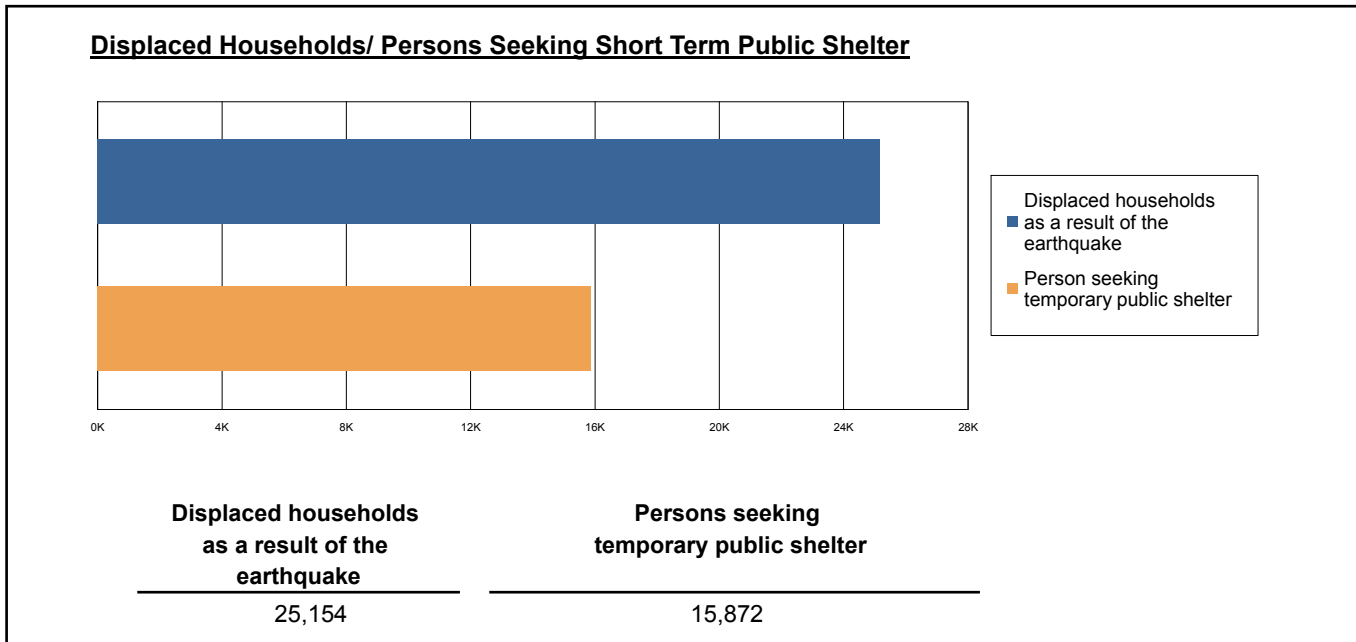
The model estimates that a total of 6.86 million tons of debris will be generated. Of the total amount, Brick/Wood comprises 36.00% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 274,360 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.



Social Impact

Shelter Requirement

Hazus estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 25,154 households to be displaced due to the earthquake. Of these, 15,872 people (out of a total population of 3,574,097) will seek temporary shelter in public shelters.



Casualties

Hazus estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening if not promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 10 provides a summary of the casualties estimated for this earthquake

Table 10: Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Commercial	113	31	4	9
	Commuting	0	0	1	0
	Educational	0	0	0	0
	Hotels	0	0	0	0
	Industrial	162	45	7	13
	Other-Residential	2,677	722	112	221
	Single Family	1,082	207	24	47
	Total	4,034	1,004	148	291
2 PM	Commercial	6,366	1,726	255	497
	Commuting	3	4	7	1
	Educational	2,595	724	114	222
	Hotels	0	0	0	0
	Industrial	1,200	331	50	97
	Other-Residential	542	146	23	44
	Single Family	208	41	5	10
	Total	10,915	2,973	454	871
5 PM	Commercial	4,483	1,218	182	349
	Commuting	59	78	133	26
	Educational	310	87	14	27
	Hotels	0	0	0	0
	Industrial	750	207	31	61
	Other-Residential	1,056	287	45	86
	Single Family	427	85	11	20
	Total	7,085	1,961	415	568

Economic Loss

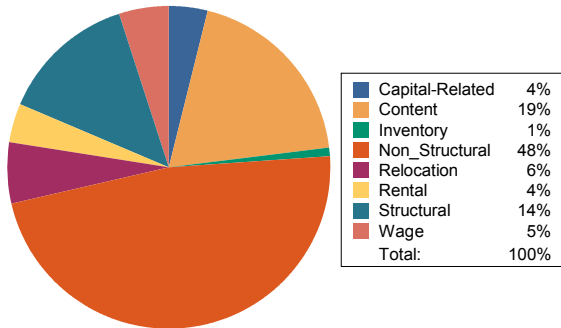
The total economic loss estimated for the earthquake is 29,542.09 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 26,831.28 (millions of dollars); 19 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 41 % of the total loss. Table 11 below provides a summary of the losses associated with the building damage.

Earthquake Losses by Loss Type (\$ millions)



Earthquake Losses by Occupancy Type (\$ millions)

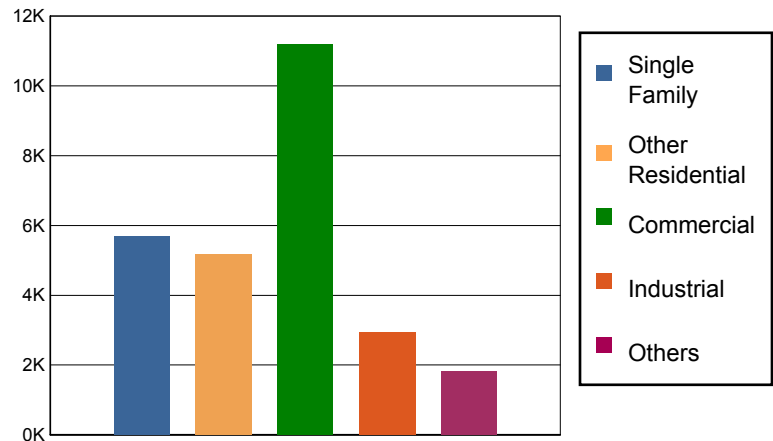


Table 11: Building-Related Economic Loss Estimates
(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.00	148.55	1,093.02	57.51	67.13	1,366.21
	Capital-Related	0.00	63.32	917.79	35.71	14.85	1,031.66
	Rental	101.72	353.10	473.07	19.65	31.66	979.19
	Relocation	354.17	200.59	782.06	91.71	229.27	1,657.79
	Subtotal	455.88	765.55	3,265.94	204.58	342.90	5,034.86
Capital Stock Losses							
	Structural	685.87	674.20	1,599.60	414.85	285.39	3,659.92
	Non_Structural	3,322.82	3,022.59	4,281.32	1,329.21	812.67	12,768.61
	Content	1,226.57	718.26	2,005.47	849.72	378.23	5,178.24
	Inventory	0.00	0.00	45.20	140.89	3.56	189.65
	Subtotal	5,235.26	4,415.05	7,931.59	2,734.67	1,479.85	21,796.42
	Total	5,691.15	5,180.60	11,197.53	2,939.25	1,822.76	26,831.28

Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, Hazus computes the direct repair cost for each component only. There are no losses computed by Hazus for business interruption due to lifeline outages. Tables 12 & 13 provide a detailed breakdown in the expected lifeline losses.

Table 12: Transportation System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	27,492.45	\$0.00	0.00
	Bridges	57,716.28	\$1837.38	3.18
	Tunnels	0.34	\$0.00	0.06
	Subtotal	85,209	1,837.40	
Railways	Segments	1,034.75	\$0.00	0.00
	Bridges	7.62	\$0.17	2.20
	Tunnels	0.00	\$0.00	0.00
	Facilities	53.26	\$5.52	10.36
	Subtotal	1,096	5.70	
Light Rail	Segments	204.42	\$0.00	0.00
	Bridges	0.00	\$0.00	0.00
	Tunnels	0.00	\$0.00	0.00
	Facilities	23.97	\$1.78	7.42
	Subtotal	228	1.80	
Bus	Facilities	76.46	\$7.21	9.42
	Subtotal	76	7.20	
Ferry	Facilities	13.31	\$2.08	15.60
	Subtotal	13	2.10	
Port	Facilities	191.71	\$26.48	13.81
	Subtotal	192	26.50	
Airport	Facilities	138.46	\$12.17	8.79
	Runways	797.24	\$0.00	0.00
	Subtotal	936	12.20	
	Total	87,750.30	1,892.80	

Table 13: Utility System Economic Losses

(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.00	\$0.00	0.00
	Facilities	421.20	\$18.11	4.30
	Distribution Lines	2,831.20	\$36.33	1.28
	Subtotal	3,252.46	\$54.44	
Waste Water	Pipelines	0.00	\$0.00	0.00
	Facilities	6,510.20	\$384.14	5.90
	Distribution Lines	1,698.70	\$26.03	1.53
	Subtotal	8,208.88	\$410.18	
Natural Gas	Pipelines	0.00	\$0.00	0.00
	Facilities	3.80	\$0.67	17.86
	Distribution Lines	1,132.50	\$7.47	0.66
	Subtotal	1,136.25	\$8.14	
Oil Systems	Pipelines	0.00	\$0.00	0.00
	Facilities	0.10	\$0.06	50.52
	Subtotal	0.12	\$0.06	
Electrical Power	Facilities	3,415.50	\$344.48	10.09
	Subtotal	3,415.50	\$344.48	
Communication	Facilities	13.00	\$0.75	5.79
	Subtotal	13.00	\$0.75	
	Total	16,026.19	\$818.04	

Appendix A: County Listing for the Region

Fairfield,CT

Hartford,CT

Litchfield,CT

Middlesex,CT

New Haven,CT

New London,CT

Tolland,CT

Windham,CT

Appendix B: Regional Population and Building Value Data

State	County Name	Population	Building Value (millions of dollars)		
			Residential	Non-Residential	Total
Connecticut	Fairfield	916,829	92,896	38,506	131,402
	Hartford	894,014	84,874	35,200	120,074
	Litchfield	189,927	20,467	7,244	27,712
	Middlesex	165,676	18,596	6,503	25,099
	New Haven	862,477	79,934	34,971	114,905
	New London	274,055	28,202	8,383	36,586
	Tolland	152,691	15,136	3,292	18,428
	Windham	118,428	10,508	3,523	14,031
Total State		3,574,097	350,613	137,622	488,237
Total Region		3,574,097	350,613	137,622	488,237

Hazus-MH: Earthquake Global Risk Report

Region Name: Stamford_57

Earthquake Scenario: RERUN_Stamford_5.7

Print Date: January 19, 2018

Disclaimer:

*This version of Hazus utilizes 2010 Census Data.
Totals only reflect data for those census tracts/blocks included in the user's study region.*

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geotechnical, and observed ground motion data.

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General Description of the Region

Hazus is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop earthquake losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from earthquakes and to prepare for emergency response and recovery.

The earthquake loss estimates provided in this report was based on a region that includes 8 county(ies) from the following state(s):

Connecticut

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 4,965.43 square miles and contains 829 census tracts. There are over 1,371 thousand households in the region which has a total population of 3,574,097 people (2010 Census Bureau data). The distribution of population by State and County is provided in Appendix B.

There are an estimated 1,218 thousand buildings in the region with a total building replacement value (excluding contents) of 488,242 (millions of dollars). Approximately 90.00 % of the buildings (and 72.00% of the building value) are associated with residential housing.

The replacement value of the transportation and utility lifeline systems is estimated to be 87,750 and 16,026 (millions of dollars) , respectively.

Building and Lifeline Inventory

Building Inventory

Hazus estimates that there are 1,218 thousand buildings in the region which have an aggregate total replacement value of 488,242 (millions of dollars). Appendix B provides a general distribution of the building value by State and County.

In terms of building construction types found in the region, wood frame construction makes up 84% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

Hazus breaks critical facilities into two (2) groups: essential facilities and high potential loss facilities (HPL). Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 49 hospitals in the region with a total bed capacity of 9,422 beds. There are 1,501 schools, 301 fire stations, 199 police stations and 43 emergency operation facilities. With respect to high potential loss facilities (HPL), there are 0 dams identified within the inventory. Of these, 0 of the dams are classified as 'high hazard'. The inventory also includes 905 hazardous material sites, 0 military installations and 2 nuclear power plants.

Transportation and Utility Lifeline Inventory

Within Hazus, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail, bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data are provided in Tables 1 and 2.

The total value of the lifeline inventory is over 103,776.00 (millions of dollars). This inventory includes over 4,431 kilometers of highways, 3,818 bridges, 283,121 kilometers of pipes.

Table 1: Transportation System Lifeline Inventory

System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
Highway	Bridges	3,818	57,716.30
	Segments	2,070	27,492.50
	Tunnels	1	0.30
	Subtotal		85,209.10
Railways	Bridges	63	7.60
	Facilities	20	53.30
	Segments	440	1,034.70
	Tunnels	0	0.00
	Subtotal		1,095.60
Light Rail	Bridges	0	0.00
	Facilities	9	24.00
	Segments	17	204.40
	Tunnels	0	0.00
	Subtotal		228.40
Bus	Facilities	61	76.50
	Subtotal		76.50
Ferry	Facilities	10	13.30
	Subtotal		13.30
Port	Facilities	96	191.70
	Subtotal		191.70
Airport	Facilities	13	138.50
	Runways	21	797.20
	Subtotal		935.70
		Total	87,750.30

Table 2: Utility System Lifeline Inventory

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	2,831.20
	Facilities	11	421.20
	Pipelines	0	0.00
	Subtotal		3,252.50
Waste Water	Distribution Lines	NA	1,698.70
	Facilities	85	6,510.20
	Pipelines	0	0.00
	Subtotal		8,208.90
Natural Gas	Distribution Lines	NA	1,132.50
	Facilities	3	3.80
	Pipelines	0	0.00
	Subtotal		1,136.20
Oil Systems	Facilities	1	0.10
	Pipelines	0	0.00
	Subtotal		0.10
Electrical Power	Facilities	27	3,415.50
	Subtotal		3,415.50
Communication	Facilities	113	13.00
	Subtotal		13.00
	Total		16,026.20

Earthquake Scenario

Hazus uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.



Scenario Name	RERUN_Stamford_5.7
Type of Earthquake	Arbitrary
Fault Name	NA
Historical Epicenter ID #	NA
Probabilistic Return Period	NA
Longitude of Epicenter	-73.56
Latitude of Epicenter	41.11
Earthquake Magnitude	5.70
Depth (km)	10.00
Rupture Length (Km)	NA
Rupture Orientation (degrees)	NA
Attenuation Function	Central & East US (CEUS 2008)

Building Damage

Building Damage

Hazus estimates that about 64,295 buildings will be at least moderately damaged. This is over 5.00 % of the buildings in the region. There are an estimated 9,637 buildings that will be damaged beyond repair. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 below summarizes the expected damage by general building type.

Damage categories by General Occupancy Type

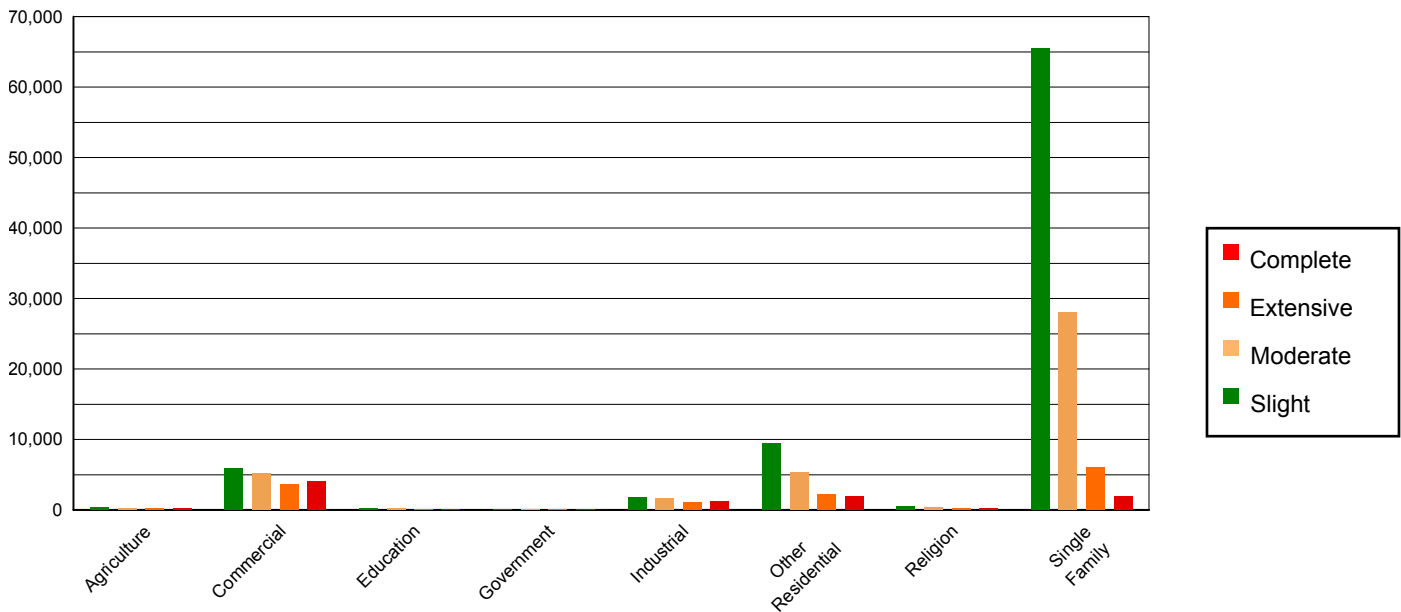


Table 3: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	3,858	0.36	355	0.42	297	0.72	196	1.44	190	1.97
Commercial	61,524	5.74	5,847	6.98	5,134	12.51	3,661	26.86	3,978	41.27
Education	2,684	0.25	232	0.28	194	0.47	136	1.00	149	1.55
Government	1,904	0.18	138	0.16	108	0.26	74	0.54	85	0.88
Industrial	20,581	1.92	1,810	2.16	1,585	3.86	1,131	8.30	1,266	13.13
Other Residential	108,897	10.17	9,391	11.22	5,373	13.10	2,171	15.93	1,892	19.63
Religion	5,198	0.49	499	0.60	349	0.85	199	1.46	216	2.24
Single Family	866,305	80.89	65,450	78.17	27,989	68.22	6,059	44.46	1,863	19.33
Total	1,070,951		83,723		41,029		13,628		9,638	

Table 4: Expected Building Damage by Building Type (All Design Levels)

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Wood	917,148	85.64	68,372	81.66	28,803	70.20	5,930	43.52	1,020	10.58
Steel	45,842	4.28	3,763	4.49	3,549	8.65	2,835	20.80	3,412	35.40
Concrete	10,032	0.94	789	0.94	721	1.76	541	3.97	662	6.86
Precast	3,155	0.29	265	0.32	284	0.69	198	1.45	242	2.51
RM	16,340	1.53	952	1.14	1,033	2.52	861	6.32	836	8.68
URM	67,409	6.29	8,422	10.06	5,963	14.53	3,109	22.81	3,380	35.07
MH	11,026	1.03	1,160	1.39	676	1.65	156	1.14	87	0.90
Total	1,070,951		83,723		41,029		13,628		9,638	

*Note:

RM Reinforced Masonry
URM Unreinforced Masonry
MH Manufactured Housing

Essential Facility Damage

Before the earthquake, the region had 9,422 hospital beds available for use. On the day of the earthquake, the model estimates that only 7,248 hospital beds (77.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 86.00% of the beds will be back in service. By 30 days, 92.00% will be operational.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on day 1
Hospitals	49	4	3	45
Schools	1,501	120	85	1,340
EOCs	43	3	2	39
PoliceStations	199	9	4	187
FireStations	301	13	10	283

Transportation Lifeline Damage

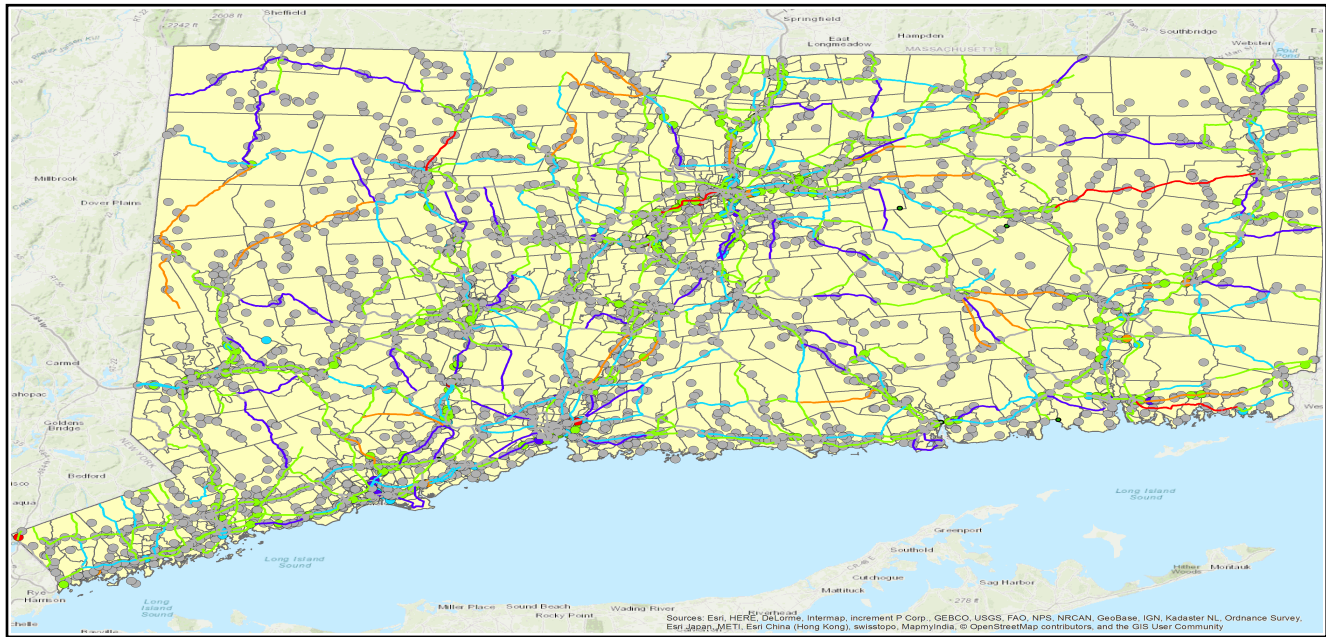


Table 6: Expected Damage to the Transportation Systems

System	Component	Number of Locations_				
		Locations/ Segments	With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	2,070	0	0	2,070	2,070
	Bridges	3,818	58	4	3,761	3,773
	Tunnels	1	0	0	1	1
Railways	Segments	440	0	0	440	440
	Bridges	63	0	0	63	63
	Tunnels	0	0	0	0	0
	Facilities	20	2	0	18	20
Light Rail	Segments	17	0	0	17	17
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	9	0	0	9	9
Bus	Facilities	61	4	0	58	61
Ferry	Facilities	10	2	0	10	10
Port	Facilities	96	0	0	96	96
Airport	Facilities	13	0	0	13	13
	Runways	21	0	0	21	21

Table 6 provides damage estimates for the transportation system.

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 7-9 provide information on the damage to the utility lifeline systems. Table 7 provides damage to the utility system facilities. Table 8 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, Hazus performs a simplified system performance analysis. Table 9 provides a summary of the system performance information.

Table 7 : Expected Utility System Facility Damage

System	# of Locations				
	Total #	With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	11	0	0	11	11
Waste Water	85	7	0	75	82
Natural Gas	3	0	0	3	3
Oil Systems	1	0	0	1	1
Electrical Power	27	3	0	24	27
Communication	113	8	0	106	113

Table 8 : Expected Utility System Pipeline Damage (Site Specific)

System	Total Pipelines Length (kms)	Number of Leaks	Number of Breaks
Potable Water	141,561	6811	1703
Waste Water	84,936	4882	1220
Natural Gas	56,624	1400	350
Oil	0	0	0

Table 9: Expected Potable Water and Electric Power System Performance

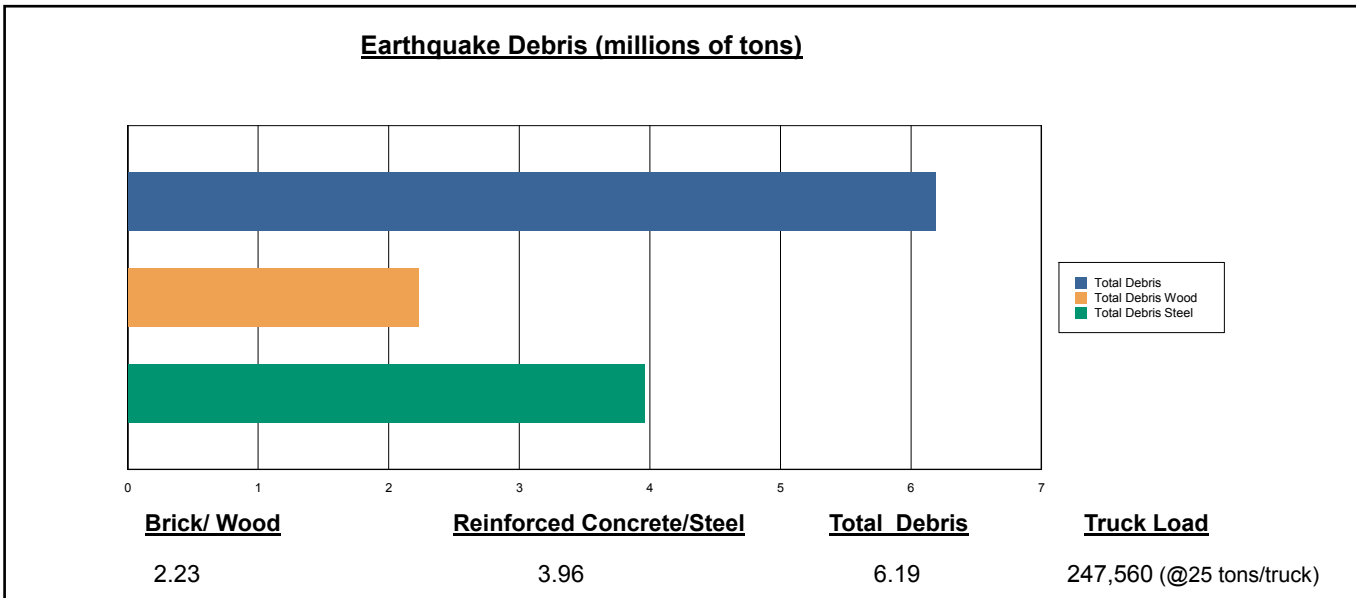
	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	1,371,087	52,205	49,130	43,059	12,892	0
Electric Power		109,484	78,458	38,512	8,579	127

Induced Earthquake Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

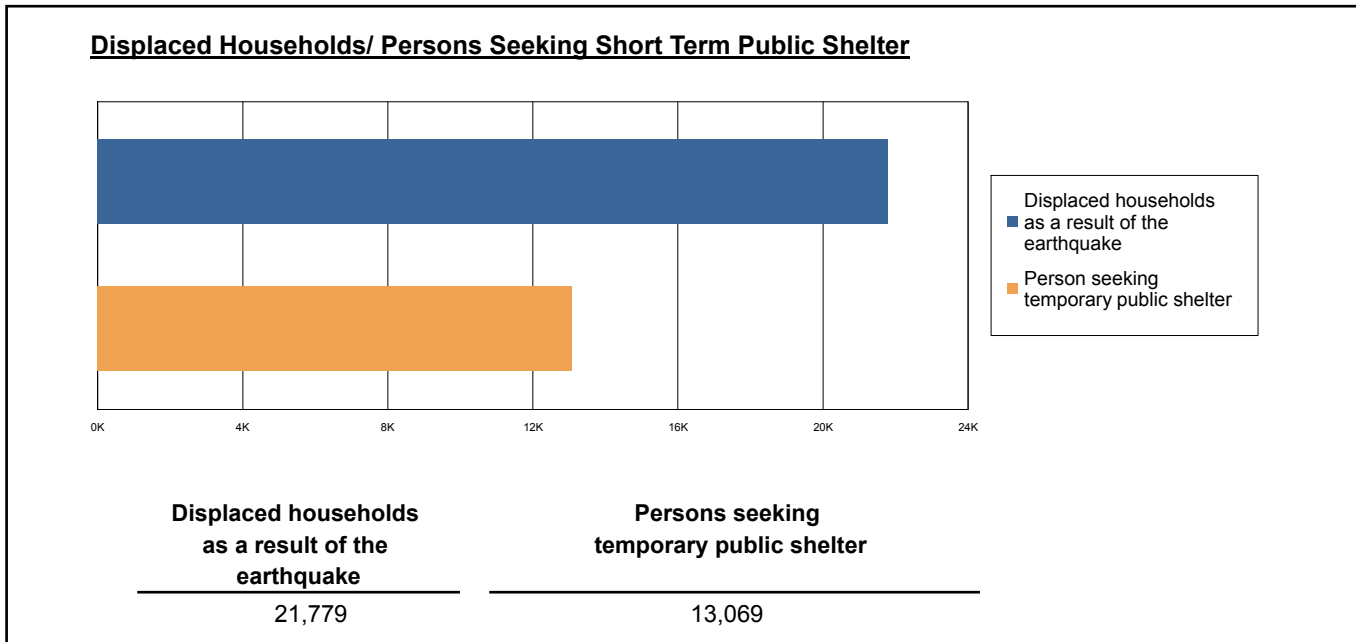
The model estimates that a total of 6.19 million tons of debris will be generated. Of the total amount, Brick/Wood comprises 36.00% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 247,560 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.



Social Impact

Shelter Requirement

Hazus estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 21,779 households to be displaced due to the earthquake. Of these, 13,069 people (out of a total population of 3,574,097) will seek temporary shelter in public shelters.



Casualties

Hazus estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening if not promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 10 provides a summary of the casualties estimated for this earthquake

Table 10: Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Commercial	119	35	5	11
	Commuting	0	0	1	0
	Educational	0	0	0	0
	Hotels	0	0	0	0
	Industrial	112	33	5	10
	Other-Residential	2,761	816	132	262
	Single Family	1,086	236	30	58
	Total	4,079	1,121	173	340
2 PM	Commercial	6,699	1,960	302	592
	Commuting	3	4	6	1
	Educational	2,539	759	123	241
	Hotels	0	0	0	0
	Industrial	830	242	38	73
	Other-Residential	529	157	26	49
	Single Family	226	51	7	13
	Total	10,825	3,174	503	969
5 PM	Commercial	4,622	1,353	210	406
	Commuting	52	76	120	24
	Educational	190	55	9	17
	Hotels	0	0	0	0
	Industrial	519	152	24	46
	Other-Residential	1,097	328	54	103
	Single Family	432	97	13	24
	Total	6,913	2,061	430	620

Economic Loss

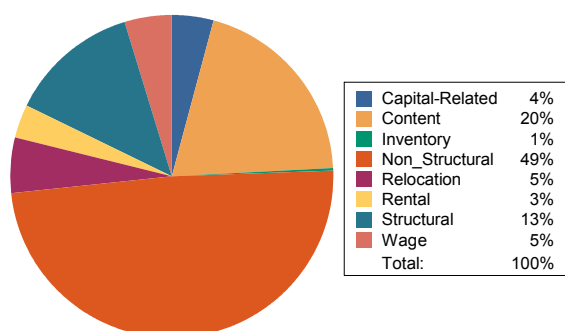
The total economic loss estimated for the earthquake is 27,388.24 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 26,034.39 (millions of dollars); 18 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 37 % of the total loss. Table 11 below provides a summary of the losses associated with the building damage.

Earthquake Losses by Loss Type (\$ millions)



Earthquake Losses by Occupancy Type (\$ millions)

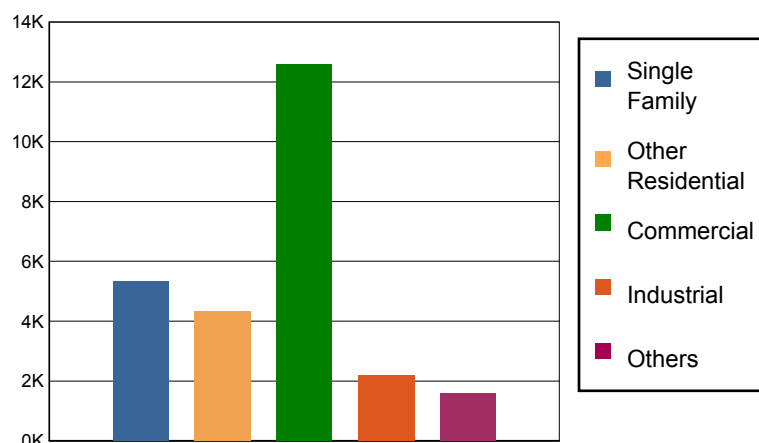


Table 11: Building-Related Economic Loss Estimates
(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.00	166.03	1,006.62	32.85	47.86	1,253.36
	Capital-Related	0.00	70.76	973.58	19.83	11.36	1,075.53
	Rental	89.50	282.37	476.66	12.03	19.79	880.34
	Relocation	312.41	155.05	732.38	59.75	166.41	1,425.99
	Subtotal	401.91	674.21	3,189.24	124.45	245.41	4,635.22
Capital Stock Losses							
	Structural	660.84	496.01	1,666.26	285.85	251.80	3,360.75
	Non_Structural	3,127.94	2,566.71	5,252.96	1,032.59	743.99	12,724.20
	Content	1,138.36	608.34	2,434.37	651.97	349.98	5,183.02
	Inventory	0.00	0.00	37.52	89.66	4.03	131.20
	Subtotal	4,927.14	3,671.06	9,391.11	2,060.07	1,349.79	21,399.18
	Total	5,329.05	4,345.27	12,580.35	2,184.52	1,595.20	26,034.39

Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, Hazus computes the direct repair cost for each component only. There are no losses computed by Hazus for business interruption due to lifeline outages. Tables 12 & 13 provide a detailed breakdown in the expected lifeline losses.

Table 12: Transportation System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	27,492.45	\$0.00	0.00
	Bridges	57,716.28	\$859.22	1.49
	Tunnels	0.34	\$0.00	0.00
	Subtotal	85,209	859.20	
Railways	Segments	1,034.75	\$0.00	0.00
	Bridges	7.62	\$0.04	0.49
	Tunnels	0.00	\$0.00	0.00
	Facilities	53.26	\$3.80	7.14
	Subtotal	1,096	3.80	
Light Rail	Segments	204.42	\$0.00	0.00
	Bridges	0.00	\$0.00	0.00
	Tunnels	0.00	\$0.00	0.00
	Facilities	23.97	\$0.41	1.69
	Subtotal	228	0.40	
Bus	Facilities	76.46	\$6.10	7.97
	Subtotal	76	6.10	
Ferry	Facilities	13.31	\$1.73	13.03
	Subtotal	13	1.70	
Port	Facilities	191.71	\$5.67	2.96
	Subtotal	192	5.70	
Airport	Facilities	138.46	\$3.55	2.57
	Runways	797.24	\$0.00	0.00
	Subtotal	936	3.60	
	Total	87,750.30	880.50	

Table 13: Utility System Economic Losses

(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.00	\$0.00	0.00
	Facilities	421.20	\$8.13	1.93
	Distribution Lines	2,831.20	\$30.65	1.08
	Subtotal	3,252.46	\$38.78	
Waste Water	Pipelines	0.00	\$0.00	0.00
	Facilities	6,510.20	\$249.23	3.83
	Distribution Lines	1,698.70	\$21.97	1.29
	Subtotal	8,208.88	\$271.20	
Natural Gas	Pipelines	0.00	\$0.00	0.00
	Facilities	3.80	\$0.00	0.04
	Distribution Lines	1,132.50	\$6.30	0.56
	Subtotal	1,136.25	\$6.30	
Oil Systems	Pipelines	0.00	\$0.00	0.00
	Facilities	0.10	\$0.00	0.09
	Subtotal	0.12	\$0.00	
Electrical Power	Facilities	3,415.50	\$156.56	4.58
	Subtotal	3,415.50	\$156.56	
Communication	Facilities	13.00	\$0.49	3.78
	Subtotal	13.00	\$0.49	
	Total	16,026.19	\$473.33	

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			Residential	Non-Residential	Total
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Hazus-MH: Earthquake Global Risk Report

Region Name: Probabalistic

Earthquake Scenario: Probabilistic_Annualized

Print Date: January 19, 2018

Disclaimer:

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Totals only reflect data for those census tracts/blocks included in the user's study region.*

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The earthquake loss estimates provided in this report was based on a region that includes 8 county(ies) from the following state(s):

Connecticut

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 4,965.43 square miles and contains 829 census tracts. There are over 1,371 thousand households in the region which has a total population of 3,574,097 people (2010 Census Bureau data). The distribution of population by State and County is provided in Appendix B.

There are an estimated 1,218 thousand buildings in the region with a total building replacement value (excluding contents) of 488,242 (millions of dollars). Approximately 90.00 % of the buildings (and 72.00% of the building value) are associated with residential housing.

The replacement value of the transportation and utility lifeline systems is estimated to be 87,750 and 16,026 (millions of dollars) , respectively.

Building and Lifeline Inventory

Building Inventory

Hazus estimates that there are 1,218 thousand buildings in the region which have an aggregate total replacement value of 488,242 (millions of dollars). Appendix B provides a general distribution of the building value by State and County.

In terms of building construction types found in the region, wood frame construction makes up 84% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

Hazus breaks critical facilities into two (2) groups: essential facilities and high potential loss facilities (HPL). Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 49 hospitals in the region with a total bed capacity of 9,422 beds. There are 1,501 schools, 301 fire stations, 199 police stations and 43 emergency operation facilities. With respect to high potential loss facilities (HPL), there are 0 dams identified within the inventory. Of these, 0 of the dams are classified as 'high hazard'. The inventory also includes 905 hazardous material sites, 0 military installations and 2 nuclear power plants.

Transportation and Utility Lifeline Inventory

Within Hazus, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail, bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data are provided in Tables 1 and 2.

The total value of the lifeline inventory is over 103,776.00 (millions of dollars). This inventory includes over 4,431 kilometers of highways, 3,818 bridges, 283,121 kilometers of pipes.

Table 1: Transportation System Lifeline Inventory

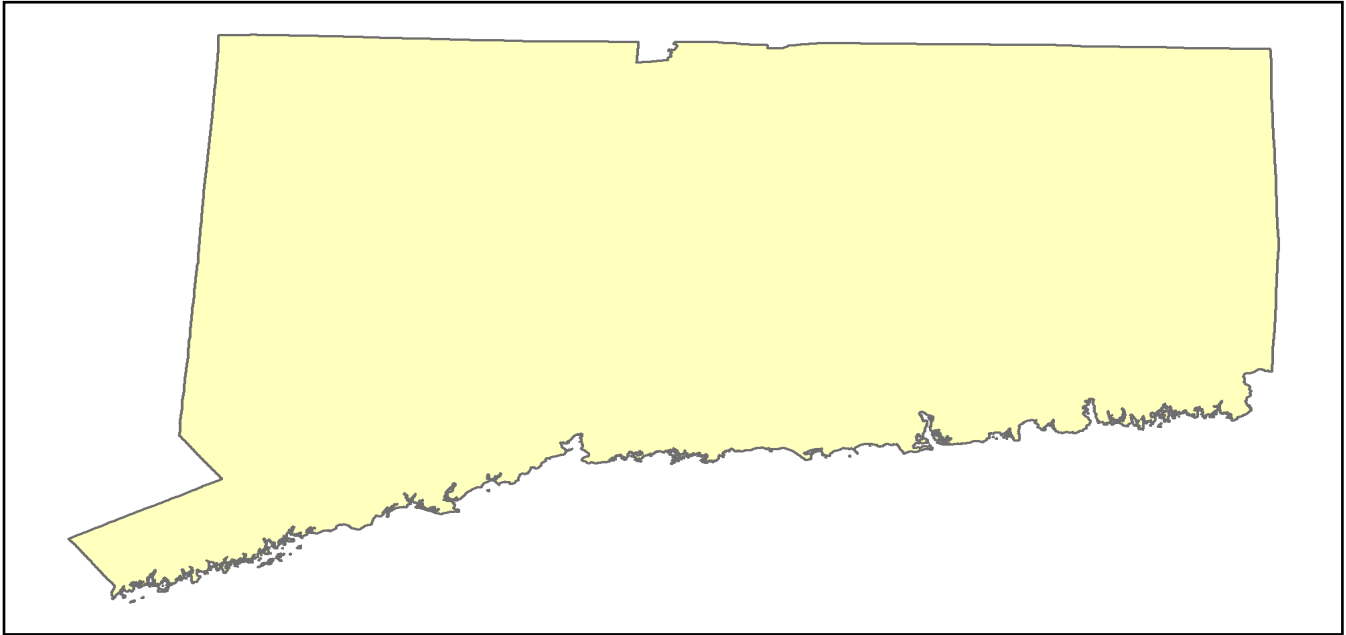
System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
Highway	Bridges	3,818	57,716.30
	Segments	2,070	27,492.50
	Tunnels	1	0.30
	Subtotal		85,209.10
Railways	Bridges	63	7.60
	Facilities	20	53.30
	Segments	440	1,034.70
	Tunnels	0	0.00
	Subtotal		1,095.60
Light Rail	Bridges	0	0.00
	Facilities	9	24.00
	Segments	17	204.40
	Tunnels	0	0.00
	Subtotal		228.40
Bus	Facilities	61	76.50
	Subtotal		76.50
Ferry	Facilities	10	13.30
	Subtotal		13.30
Port	Facilities	96	191.70
	Subtotal		191.70
Airport	Facilities	13	138.50
	Runways	21	797.20
	Subtotal		935.70
		Total	87,750.30

Table 2: Utility System Lifeline Inventory

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	2,831.20
	Facilities	11	421.20
	Pipelines	0	0.00
	Subtotal		3,252.50
Waste Water	Distribution Lines	NA	1,698.70
	Facilities	85	6,510.20
	Pipelines	0	0.00
	Subtotal		8,208.90
Natural Gas	Distribution Lines	NA	1,132.50
	Facilities	3	3.80
	Pipelines	0	0.00
	Subtotal		1,136.20
Oil Systems	Facilities	1	0.10
	Pipelines	0	0.00
	Subtotal		0.10
Electrical Power	Facilities	27	3,415.50
	Subtotal		3,415.50
Communication	Facilities	113	13.00
	Subtotal		13.00
	Total		16,026.20

Earthquake Scenario

Hazus uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.



Scenario Name	Probabilistic_Annualized
Type of Earthquake	Probabilistic
Fault Name	NA
Historical Epicenter ID #	NA
Probabilistic Return Period	Annualized
Longitude of Epicenter	NA
Latitude of Epicenter	NA
Earthquake Magnitude	NA
Depth (km)	NA
Rupture Length (Km)	NA
Rupture Orientation (degrees)	NA
Attenuation Function	NA

Building Damage

Building Damage

Hazus estimates that about 0 buildings will be at least moderately damaged. This is over 0.00 % of the buildings in the region. There are an estimated 0 buildings that will be damaged beyond repair. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 below summarizes the expected damage by general building type.

Damage categories by General Occupancy Type

■	Complete
■	Extensive
■	Moderate
■	Slight

Table 3: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Total										

Table 4: Expected Building Damage by Building Type (All Design Levels)

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Total										

*Note:

RM Reinforced Masonry
URM Unreinforced Masonry
MH Manufactured Housing

Essential Facility Damage

Before the earthquake, the region had 9,422 hospital beds available for use. On the day of the earthquake, the model estimates that only 0 hospital beds (0.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 0.00% of the beds will be back in service. By 30 days, 0.00% will be operational.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on day 1
Hospitals	49	0	0	0
Schools	1,501	0	0	0
EOCs	43	0	0	0
PoliceStations	199	0	0	0
FireStations	301	0	0	0

Transportation Lifeline Damage

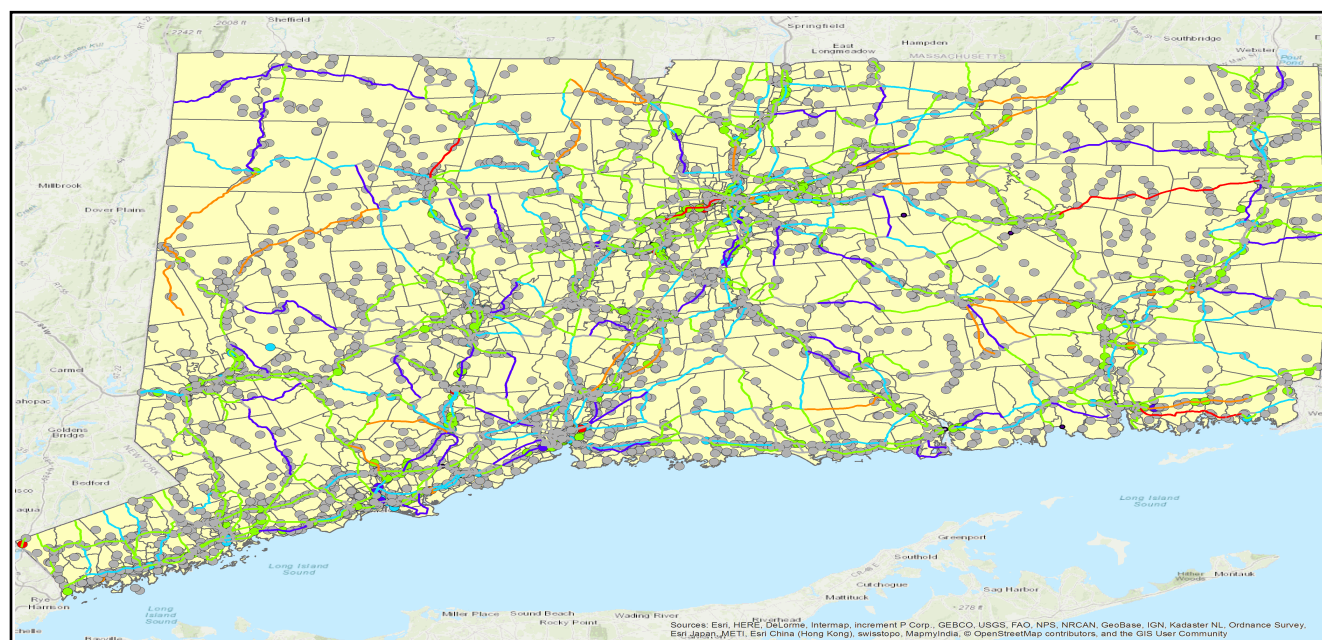


Table 6: Expected Damage to the Transportation Systems

System	Component	Number of Locations_				
		Locations/ Segments	With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	2,070	0	0	0	0
	Bridges	3,818	0	0	0	0
	Tunnels	1	0	0	0	0
Railways	Segments	440	0	0	0	0
	Bridges	63	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	20	0	0	0	0
Light Rail	Segments	17	0	0	0	0
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	9	0	0	0	0
Bus	Facilities	61	0	0	0	0
Ferry	Facilities	10	0	0	0	0
Port	Facilities	96	0	0	0	0
Airport	Facilities	13	0	0	0	0
	Runways	21	0	0	0	0

Table 6 provides damage estimates for the transportation system.

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 7-9 provide information on the damage to the utility lifeline systems. Table 7 provides damage to the utility system facilities. Table 8 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, Hazus performs a simplified system performance analysis. Table 9 provides a summary of the system performance information.

Table 7 : Expected Utility System Facility Damage

System	# of Locations				
	Total #	With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	11	0	0	0	0
Waste Water	85	0	0	0	0
Natural Gas	3	0	0	0	0
Oil Systems	1	0	0	0	0
Electrical Power	27	0	0	0	0
Communication	113	0	0	0	0

Table 8 : Expected Utility System Pipeline Damage (Site Specific)

System	Total Pipelines Length (kms)	Number of Leaks	Number of Breaks
Potable Water	141,561	0	0
Waste Water	84,936	0	0
Natural Gas	56,624	0	0
Oil	0	0	0

Table 9: Expected Potable Water and Electric Power System Performance

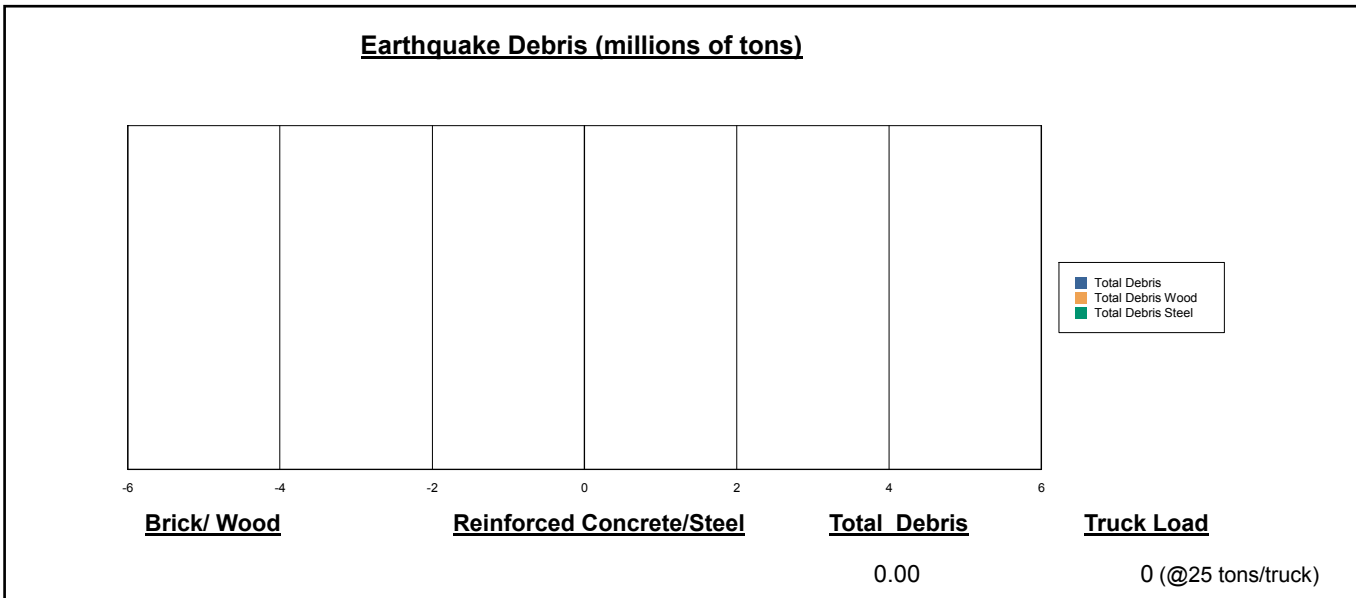
	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	0	0	0	0	0	0
Electric Power		0	0	0	0	0

Induced Earthquake Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 0.00 million tons of debris will be generated. Of the total amount, Brick/Wood comprises 0.00% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 0 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.



Social Impact

Shelter Requirement

Hazus estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 0 households to be displaced due to the earthquake. Of these, 0 people (out of a total population of 3,574,097) will seek temporary shelter in public shelters.

Displaced Households/ Persons Seeking Short Term Public Shelter

Displaced households
as a result of the
earthquake

0

Persons seeking
temporary public shelter

0

Casualties

Hazus estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening if not promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 10 provides a summary of the casualties estimated for this earthquake

Table 10: Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Commercial	0	0	0	0
	Commuting	0	0	0	0
	Educational	0	0	0	0
	Hotels	0	0	0	0
	Industrial	0	0	0	0
	Other-Residential	1	0	0	0
	Single Family	1	0	0	0
	Total	1	0	0	0
2 PM	Commercial	2	0	0	0
	Commuting	0	0	0	0
	Educational	1	0	0	0
	Hotels	0	0	0	0
	Industrial	0	0	0	0
	Other-Residential	0	0	0	0
	Single Family	0	0	0	0
	Total	3	0	0	0
5 PM	Commercial	1	0	0	0
	Commuting	0	0	0	0
	Educational	0	0	0	0
	Hotels	0	0	0	0
	Industrial	0	0	0	0
	Other-Residential	0	0	0	0
	Single Family	0	0	0	0
	Total	2	0	0	0

Economic Loss

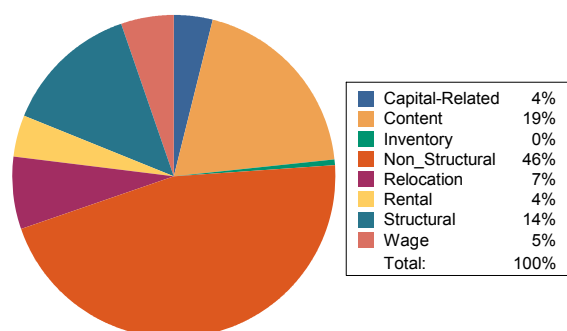
The total economic loss estimated for the earthquake is 12.82 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 12.81 (millions of dollars); 20 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 47 % of the total loss. Table 11 below provides a summary of the losses associated with the building damage.

Earthquake Losses by Loss Type (\$ millions)



Earthquake Losses by Occupancy Type (\$ millions)

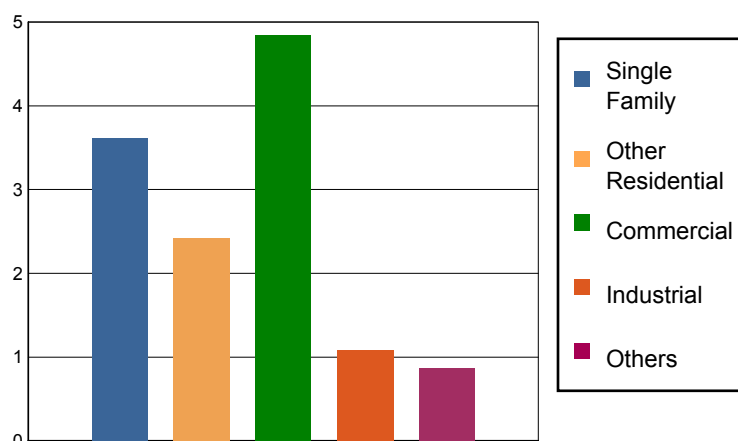


Table 11: Building-Related Economic Loss Estimates
(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.00	0.05	0.55	0.02	0.04	0.67
	Capital-Related	0.00	0.02	0.46	0.01	0.01	0.51
	Rental	0.05	0.19	0.28	0.01	0.01	0.55
	Relocation	0.18	0.13	0.42	0.06	0.12	0.91
	Subtotal	0.23	0.39	1.71	0.10	0.19	2.62
Capital Stock Losses							
	Structural	0.43	0.34	0.68	0.17	0.14	1.75
	Non_Structural	2.15	1.34	1.60	0.46	0.35	5.89
	Content	0.80	0.34	0.84	0.31	0.19	2.48
	Inventory	0.00	0.00	0.02	0.05	0.00	0.06
	Subtotal	3.38	2.02	3.13	0.98	0.68	10.19
	Total	3.61	2.41	4.84	1.08	0.87	12.81

Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, Hazus computes the direct repair cost for each component only. There are no losses computed by Hazus for business interruption due to lifeline outages. Tables 12 & 13 provide a detailed breakdown in the expected lifeline losses.

Table 12: Transportation System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	27,492.45	\$0.00	0.00
	Bridges	57,716.28	\$0.00	0.00
	Tunnels	0.34	\$0.00	0.00
	Subtotal	85,209	0.00	
Railways	Segments	1,034.75	\$0.00	0.00
	Bridges	7.62	\$0.00	0.00
	Tunnels	0.00	\$0.00	0.00
	Facilities	53.26	\$0.00	0.00
	Subtotal	1,096	0.00	
Light Rail	Segments	204.42	\$0.00	0.00
	Bridges	0.00	\$0.00	0.00
	Tunnels	0.00	\$0.00	0.00
	Facilities	23.97	\$0.00	0.00
	Subtotal	228	0.00	
Bus	Facilities	76.46	\$0.00	0.00
	Subtotal	76	0.00	
Ferry	Facilities	13.31	\$0.00	0.00
	Subtotal	13	0.00	
Port	Facilities	191.71	\$0.00	0.00
	Subtotal	192	0.00	
Airport	Facilities	138.46	\$0.00	0.00
	Runways	797.24	\$0.00	0.00
	Subtotal	936	0.00	
	Total	87,750.30	0.00	

Table 13: Utility System Economic Losses

(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.00	\$0.00	0.00
	Facilities	421.20	\$0.00	0.00
	Distribution Lines	2,831.20	\$0.00	0.00
	Subtotal	3,252.46	\$0.00	
Waste Water	Pipelines	0.00	\$0.00	0.00
	Facilities	6,510.20	\$0.00	0.00
	Distribution Lines	1,698.70	\$0.00	0.00
	Subtotal	8,208.88	\$0.00	
Natural Gas	Pipelines	0.00	\$0.00	0.00
	Facilities	3.80	\$0.00	0.00
	Distribution Lines	1,132.50	\$0.00	0.00
	Subtotal	1,136.25	\$0.00	
Oil Systems	Pipelines	0.00	\$0.00	0.00
	Facilities	0.10	\$0.00	0.00
	Subtotal	0.12	\$0.00	
Electrical Power	Facilities	3,415.50	\$0.00	0.00
	Subtotal	3,415.50	\$0.00	
Communication	Facilities	13.00	\$0.00	0.00
	Subtotal	13.00	\$0.00	
	Total	16,026.19	\$0.00	

Appendix A: County Listing for the Region

Fairfield,CT

Hartford,CT

Litchfield,CT

Middlesex,CT

New Haven,CT

New London,CT

Tolland,CT

Windham,CT

Appendix B: Regional Population and Building Value Data

State	County Name	Population	Building Value (millions of dollars)		
			Residential	Non-Residential	Total
Connecticut	Fairfield	916,829	92,896	38,506	131,402
	Hartford	894,014	84,874	35,200	120,074
	Litchfield	189,927	20,467	7,244	27,712
	Middlesex	165,676	18,596	6,503	25,099
	New Haven	862,477	79,934	34,971	114,905
	New London	274,055	28,202	8,383	36,586
	Tolland	152,691	15,136	3,292	18,428
	Windham	118,428	10,508	3,523	14,031
Total State		3,574,097	350,613	137,622	488,237
Total Region		3,574,097	350,613	137,622	488,237

Probabilistic Breakdown

Hazard - MH Estimated Direct Losses of Earthquake Scenario Events, summary at the CROG level

Town	Wage Loss	Rent Loss	Relocation Loss	Income Loss	Building Loss	Structural Loss	Non-Structural Loss	Content Loss	Inventory Loss
Andover	\$2,279.60	\$2,306.40	\$4,891.60	\$1,914.60	\$45,792.90	\$10,014.70	\$35,778.20	\$14,191.00	\$326.20
Avon	\$9,675.80	\$6,998.20	\$12,818.70	\$7,890.40	\$107,492.60	\$24,862.00	\$82,630.60	\$32,657.20	\$602.00
Berlin	\$1,326,682.10	\$900,506.50	\$1,217,680.90	\$1,199,328.70	\$11,871,731.90	\$2,654,596.90	\$9,217,135.00	\$3,815,639.80	\$113,595.70
Bloomfield	\$11,637.30	\$10,731.10	\$17,670.90	\$8,776.80	\$145,420.70	\$36,641.80	\$108,778.90	\$43,426.00	\$1,268.50
Bolton	\$3,234.90	\$2,938.20	\$5,695.60	\$2,915.90	\$55,720.70	\$11,959.30	\$43,761.40	\$16,986.80	\$310.50
Canton	\$7,069.00	\$5,581.70	\$10,402.10	\$5,730.30	\$88,828.20	\$21,097.40	\$67,730.80	\$26,857.30	\$583.70
Columbia	\$2,840.00	\$2,963.90	\$5,109.00	\$1,968.30	\$49,936.90	\$12,052.70	\$37,884.20	\$14,677.40	\$352.20
Coventry	\$6,000.10	\$6,085.80	\$9,713.60	\$4,475.80	\$92,679.40	\$21,455.10	\$71,224.30	\$26,467.00	\$508.20
East Granby	\$4,144.70	\$3,630.50	\$6,739.40	\$3,555.40	\$59,891.00	\$14,182.70	\$45,708.30	\$17,453.60	\$437.30
East Hartford	\$25,868.40	\$25,846.00	\$39,212.10	\$21,579.10	\$265,404.40	\$71,835.30	\$193,569.10	\$81,837.70	\$2,781.70
East Windsor	\$5,404.20	\$4,540.20	\$7,920.70	\$4,353.80	\$66,082.30	\$16,827.40	\$49,254.90	\$20,384.20	\$839.80
Ellington	\$7,537.20	\$6,674.80	\$12,261.60	\$5,495.20	\$113,135.60	\$25,638.90	\$87,496.70	\$33,311.30	\$911.90
Enfield	\$10,979.90	\$10,203.50	\$16,367.80	\$8,088.80	\$138,287.30	\$34,738.60	\$103,548.70	\$39,866.70	\$1,318.10
Farmington	\$17,282.10	\$11,623.80	\$20,929.90	\$12,623.40	\$170,788.20	\$39,892.60	\$130,895.60	\$53,511.30	\$1,295.40
Glastonbury	\$13,271.30	\$12,977.90	\$21,726.60	\$10,518.20	\$173,838.90	\$43,399.70	\$130,439.20	\$53,657.10	\$1,432.20
Granby	\$3,801.80	\$3,263.10	\$6,222.10	\$3,247.60	\$55,796.70	\$13,086.30	\$42,710.40	\$16,079.90	\$354.30
Hartford	\$40,998.90	\$38,603.20	\$55,431.20	\$30,574.30	\$408,124.80	\$101,184.20	\$306,940.60	\$120,636.00	\$3,196.40
Hebron	\$4,505.50	\$4,044.70	\$8,331.60	\$3,778.00	\$82,649.50	\$18,191.70	\$64,457.80	\$25,677.30	\$530.60
Manchester	\$14,990.80	\$12,903.00	\$21,143.50	\$11,576.50	\$180,391.20	\$41,393.00	\$138,998.20	\$54,051.50	\$1,240.40
Mansfield	\$6,691.10	\$8,511.00	\$11,655.10	\$4,820.70	\$113,690.50	\$29,081.10	\$84,609.40	\$29,603.90	\$502.50
Marlborough	\$3,450.90	\$2,726.20	\$5,540.30	\$2,933.40	\$58,171.10	\$11,927.90	\$46,243.20	\$18,373.40	\$315.00
New Britain	\$19,245.60	\$17,185.70	\$25,932.70	\$13,595.40	\$216,712.60	\$51,415.40	\$165,297.20	\$66,426.70	\$2,422.30
Newington	\$17,559.40	\$14,143.60	\$22,412.80	\$13,829.30	\$192,350.10	\$47,051.00	\$145,299.10	\$62,143.30	\$3,044.10
Plainville	\$8,650.00	\$7,690.70	\$13,007.80	\$6,775.50	\$110,102.50	\$26,464.20	\$83,638.30	\$34,747.50	\$1,392.00
Rocky Hill	\$12,209.10	\$10,261.20	\$16,289.30	\$10,069.30	\$145,270.20	\$34,386.80	\$110,883.40	\$45,618.20	\$1,417.80
Simsbury	\$10,523.70	\$7,422.40	\$13,970.00	\$8,705.70	\$113,263.50	\$27,054.20	\$86,209.30	\$34,045.80	\$664.80
Somers	\$4,681.60	\$4,326.90	\$7,822.30	\$3,543.50	\$70,202.10	\$17,505.40	\$52,696.70	\$20,704.80	\$669.80
South Windsor	\$11,479.80	\$10,732.20	\$17,492.20	\$9,301.00	\$144,353.60	\$36,604.30	\$107,749.30	\$43,881.60	\$1,814.80
Southington	\$16,269.90	\$13,811.70	\$23,788.00	\$12,895.40	\$209,927.60	\$50,142.40	\$159,785.20	\$66,651.70	\$2,572.40
Stafford	\$3,116.30	\$2,479.10	\$4,769.40	\$2,094.10	\$43,459.90	\$9,937.60	\$33,522.30	\$12,839.70	\$384.10
Suffield	\$4,893.10	\$5,189.40	\$8,664.00	\$3,852.90	\$75,150.10	\$18,127.80	\$57,022.30	\$21,293.70	\$532.90
Tolland	\$2,682.60	\$2,929.40	\$5,414.30	\$2,207.10	\$52,687.20	\$11,529.00	\$41,158.20	\$15,318.00	\$274.10
Vernon	\$10,017.70	\$10,233.00	\$16,422.40	\$7,929.80	\$144,830.70	\$33,650.70	\$111,180.00	\$42,361.80	\$1,195.10
West Hartford	\$24,925.00	\$16,782.30	\$27,505.80	\$16,519.80	\$220,387.60	\$52,346.50	\$168,041.10	\$67,458.00	\$1,656.30
Wethersfield	\$19,147.40	\$17,529.00	\$27,202.80	\$14,795.10	\$207,882.80	\$53,137.30	\$154,745.50	\$64,122.80	\$2,078.20
Willington	\$4,521.50	\$4,721.00	\$8,244.70	\$3,626.50	\$78,182.20	\$17,510.90	\$60,671.30	\$22,423.90	\$492.80
Windsor	\$12,723.40	\$11,618.50	\$18,799.70	\$10,542.70	\$147,851.80	\$39,022.60	\$108,829.20	\$45,259.40	\$1,825.70
Windsor Locks	\$7,365.30	\$6,249.20	\$10,199.60	\$5,939.20	\$81,521.40	\$21,081.80	\$60,439.60	\$24,113.00	\$856.30
TOTAL	\$1,718,357.00	\$1,246,965.00	\$1,785,402.10	\$1,502,367.50	\$16,597,990.70	\$3,801,027.20	\$12,796,963.50	\$5,244,756.30	\$155,996.10

East Haddam 6.4 Breakdown

Town	Wage Loss	Rent Loss	Relocation Loss	Income Loss	Building Loss	Structural Loss	Non-Structural Loss	Content Loss	Inventory Loss
Andover	\$20,190,943.90	\$15,718,037.80	\$34,115,724.40	\$17,516,303.80	\$335,523,764.70	\$75,549,687.10	\$259,974,077.60	\$103,848,496.00	\$3,891,349.90
Avon	\$22,416,708.70	\$13,281,919.50	\$26,686,694.00	\$18,706,571.00	\$210,419,394.80	\$50,331,412.50	\$160,087,982.30	\$61,898,684.20	\$1,297,612.10
Berlin	\$9,762,720,935.20	\$5,179,592,665.60	\$6,667,848,407.90	\$8,683,218,391.30	\$76,450,798,151.50	\$17,523,410,808.30	\$58,927,387,343.20	\$23,522,127,124.50	\$969,026,762.60
Bloomfield	\$34,002,921.30	\$25,848,285.70	\$44,384,651.90	\$25,379,887.30	\$376,629,181.60	\$97,631,103.10	\$278,998,078.50	\$106,235,021.20	\$3,401,903.00
Bolton	\$24,116,735.30	\$17,139,775.60	\$34,496,563.40	\$22,408,507.80	\$343,368,646.10	\$76,726,657.70	\$266,641,988.40	\$103,940,924.30	\$3,083,448.50
Canton	\$12,262,362.70	\$8,305,993.70	\$16,313,957.20	\$10,302,489.60	\$130,800,453.70	\$32,088,924.40	\$98,711,529.30	\$37,991,383.50	\$853,544.10
Columbia	\$25,176,687.10	\$22,071,237.60	\$39,844,481.00	\$18,639,104.50	\$465,216,404.20	\$112,598,716.90	\$352,617,687.30	\$134,747,167.40	\$5,403,141.60
Coventry	\$40,053,643.60	\$32,799,467.10	\$52,095,668.00	\$30,582,602.20	\$564,766,954.60	\$131,230,822.50	\$433,536,132.10	\$157,070,843.00	\$4,796,683.20
East Granby	\$5,787,436.10	\$4,694,614.40	\$9,234,400.80	\$5,222,171.30	\$79,829,527.10	\$19,122,816.50	\$60,706,710.60	\$22,916,513.90	\$660,117.50
East Hartford	\$151,351,407.90	\$121,603,835.80	\$192,800,624.20	\$126,767,401.50	\$1,542,966,021.10	\$427,093,196.10	\$1,115,872,825.00	\$446,406,356.60	\$19,369,472.30
East Windsor	\$15,879,019.80	\$10,795,587.20	\$20,189,586.50	\$12,847,328.70	\$173,672,918.00	\$46,566,129.90	\$127,106,788.10	\$53,349,500.00	\$2,624,275.20
Ellington	\$21,194,555.30	\$15,497,032.40	\$30,096,459.80	\$15,787,409.30	\$267,974,190.60	\$62,491,479.40	\$205,482,711.20	\$79,049,127.60	\$2,568,527.70
Enfield	\$18,480,049.50	\$15,269,245.60	\$26,332,990.50	\$14,202,512.70	\$220,242,349.00	\$56,219,747.70	\$164,022,601.30	\$62,124,860.40	\$2,279,129.00
Farmington	\$57,888,182.90	\$30,854,924.40	\$59,464,184.50	\$41,889,584.20	\$473,922,981.10	\$115,611,794.20	\$358,311,186.90	\$142,196,386.70	\$4,254,746.90
Glastonbury	\$122,691,270.90	\$93,260,810.30	\$160,916,455.30	\$99,523,317.10	\$1,596,306,593.80	\$390,447,597.10	\$1,205,858,996.70	\$473,974,897.30	\$17,267,827.50
Granby	\$4,383,000.90	\$3,546,138.20	\$7,134,650.90	\$3,868,962.40	\$60,714,948.80	\$14,447,301.20	\$46,267,647.60	\$16,820,313.70	\$380,747.20
Hartford	\$201,268,119.50	\$145,165,040.30	\$226,686,951.20	\$153,177,581.30	\$1,851,853,473.50	\$463,371,967.20	\$1,388,481,506.30	\$524,984,074.70	\$18,411,113.00
Hebron	\$59,016,857.20	\$46,895,033.10	\$102,448,578.30	\$51,291,044.10	\$1,176,925,371.80	\$247,589,284.40	\$929,336,087.40	\$354,160,372.60	\$10,221,290.40

Probabilistic Total Losses

Town	Estimated Total Losses
Andover	\$71,702.30
Avon	\$178,134.90
Berlin	\$289,486.00
Bloomfield	\$238,931.30
Bolton	\$87,802.60
Canton	\$145,052.30
Columbia	\$77,847.70
Coventry	\$145,929.90
East Granby	\$95,851.90
East Hartford	\$462,529.40
East Windsor	\$109,525.20
Ellington	\$179,327.60
Enfield	\$225,112.10
Farmington	\$288,054.10
Glastonbury	\$287,422.20
Granby	\$88,765.50
Hartford	\$697,564.80
Hebron	\$129,517.20
Manchester	\$296,296.90
Mansfield	\$175,474.80
Marlborough	\$91,510.30
New Britain	\$361,521.00
Newington	\$325,482.60
Plainville	\$182,366.00
Rocky Hill	\$241,135.10
Simsbury	\$188,595.90
Somers	\$111,951.00
South Windsor	\$239,055.20
Southington	\$345,916.70
Stafford	\$69,142.60
Suffield	\$119,576.10
Tolland	\$81,512.70
Vernon	\$232,990.50
West Hartford	\$375,234.80
Wethersfield	\$352,758.10
Willington	\$122,212.60
Windsor	\$248,621.20
Windsor Locks	\$136,244.00
TOTAL	\$8,096,155.10

East Haddam 6.4 Total Losses

Town	Estimated Total Losses
Andover	\$530,804,620.50
Avon	\$354,707,584.30
Berlin	\$1,621,479,969.80
Bloomfield	\$615,881,852.00
Bolton	\$548,554,601.00
Canton	\$216,830,184.50
Columbia	\$711,098,223.40
Coventry	\$882,165,861.70
East Granby	\$128,344,781.10
East Hartford	\$2,601,265,119.40
East Windsor	\$289,358,215.40
Ellington	\$432,167,302.70
Enfield	\$358,931,136.70
Farmington	\$810,470,990.70
Glastonbury	\$2,563,941,172.20
Granby	\$96,848,762.10
Hartford	\$3,121,546,353.50
Hebron	\$1,800,958,547.50

Manchester	\$90,168,768.00	\$59,693,910.90	\$102,633,174.20	\$71,182,379.50	\$942,808,450.70	\$222,535,969.40	\$720,272,481.30	\$276,340,777.80	\$8,839,531.80
Mansfield	\$40,517,391.30	\$40,540,188.00	\$54,486,883.40	\$29,309,466.00	\$631,667,472.70	\$159,153,774.20	\$472,513,698.50	\$153,351,446.40	\$3,615,989.70
Marlborough	\$50,004,229.00	\$38,229,364.90	\$84,257,001.70	\$44,298,073.00	\$1,008,511,250.70	\$196,733,008.20	\$811,778,242.50	\$307,977,452.20	\$8,644,395.40
New Britain	\$92,728,750.70	\$65,187,674.30	\$103,373,880.10	\$67,851,485.30	\$954,581,430.10	\$236,720,047.40	\$717,861,382.70	\$283,718,496.40	\$14,762,640.10
Newington	\$96,722,251.60	\$62,401,887.80	\$102,367,448.10	\$79,091,939.70	\$992,468,931.20	\$250,915,854.40	\$741,553,076.80	\$307,365,954.70	\$19,506,886.50
Plainville	\$30,129,748.40	\$21,944,612.20	\$38,943,796.90	\$23,845,908.30	\$333,851,833.00	\$86,424,255.00	\$247,427,578.00	\$99,816,250.70	\$4,742,924.90
Rocky Hill	\$98,165,800.40	\$63,912,592.00	\$101,615,384.80	\$81,401,660.60	\$1,080,232,605.50	\$257,958,529.70	\$822,274,075.80	\$324,595,228.20	\$14,140,151.00
Simsbury	\$19,973,030.70	\$11,574,580.70	\$23,652,860.90	\$16,352,843.30	\$180,667,668.90	\$44,254,982.30	\$136,412,686.60	\$52,845,142.80	\$1,145,386.40
Somers	\$8,296,725.20	\$6,593,232.80	\$12,703,212.50	\$6,359,504.10	\$111,939,781.50	\$27,763,824.10	\$84,175,957.40	\$32,395,364.30	\$1,111,166.40
South Windsor	\$47,763,187.30	\$35,915,329.10	\$60,666,330.10	\$39,423,042.40	\$532,299,793.00	\$142,238,804.60	\$390,060,988.40	\$159,308,714.50	\$8,080,731.90
Southington	\$62,341,459.80	\$41,522,786.90	\$74,975,519.40	\$49,691,407.90	\$666,166,113.10	\$173,211,528.60	\$492,954,584.50	\$198,948,951.60	\$9,409,004.90
Stafford	\$5,871,008.20	\$4,190,958.70	\$8,492,916.30	\$4,131,821.40	\$73,977,992.70	\$17,250,830.10	\$56,727,162.60	\$21,390,485.00	\$681,081.90
Suffield	\$6,676,344.70	\$6,476,479.70	\$11,531,848.50	\$5,420,722.40	\$96,681,545.00	\$23,663,546.80	\$73,017,998.20	\$27,001,743.80	\$752,442.60
Tolland	\$9,976,253.60	\$8,519,888.00	\$16,658,621.90	\$8,575,854.40	\$157,268,823.90	\$35,687,163.50	\$121,581,660.40	\$46,607,735.90	\$1,243,861.50
Vernon	\$47,351,650.40	\$37,026,234.00	\$61,944,487.30	\$38,051,537.60	\$566,101,756.40	\$138,311,255.00	\$427,790,501.40	\$166,095,125.50	\$6,588,912.90
West Hartford	\$95,029,070.30	\$54,412,014.60	\$94,543,411.00	\$65,649,392.80	\$795,245,063.00	\$194,514,641.70	\$600,730,421.30	\$236,078,824.10	\$8,448,675.40
Wethersfield	\$132,790,667.10	\$96,044,430.70	\$150,851,965.60	\$102,507,522.40	\$1,363,499,999.30	\$359,694,501.20	\$1,003,805,498.10	\$398,802,809.70	\$17,487,943.10
Willington	\$15,638,996.50	\$13,204,857.30	\$23,153,970.10	\$13,343,320.40	\$223,369,618.10	\$51,508,179.20	\$171,861,438.90	\$62,631,214.40	\$1,582,694.10
Windsor	\$36,713,880.20	\$27,809,221.10	\$46,915,304.30	\$30,499,619.80	\$384,784,512.60	\$107,005,075.50	\$277,779,437.10	\$113,631,950.70	\$5,244,440.50
Windsor Locks	\$14,369,396.90	\$10,263,352.90	\$17,771,442.60	\$11,780,752.00	\$140,828,368.00	\$37,939,285.50	\$102,889,082.50	\$40,315,895.60	\$1,665,985.80
TOTAL	\$11,600,109,448.10	\$6,507,803,240.90	\$8,942,630,489.50	\$10,140,099,423.40	\$97,558,884,335.40	\$22,706,014,502.60	\$74,852,869,832.80	\$29,713,061,611.90	\$1,207,486,538.50

Haddam 5.7 Breakdown

Town	Wage Loss	Rent Loss	Relocation Loss	Income Loss	Building Loss	Structural Loss	Non-Structural Loss	Content Loss	Inventory Loss
Andover	\$4,387,370.80	\$3,839,193.70	\$8,515,731.90	\$3,800,039.70	\$75,393,292.30	\$16,746,923.30	\$58,646,369.00	\$23,627,374.00	\$556,882.60
Avon	\$5,069,428.70	\$3,624,857.00	\$7,017,102.70	\$4,208,287.80	\$59,777,999.60	\$13,302,372.40	\$46,475,627.20	\$17,796,324.80	\$318,901.20
Berlin	\$5,051,820,580.60	\$2,823,594,720.00	\$3,725,672,464.90	\$4,463,941,110.10	\$37,446,374,958.10	\$8,773,040,924.20	\$28,673,334,033.90	\$11,634,489,170.10	\$390,869,809.80
Bloomfield	\$6,743,191.70	\$6,158,096.00	\$10,581,452.00	\$5,013,922.50	\$90,886,452.90	\$21,514,193.50	\$69,372,259.40	\$26,898,717.20	\$695,215.50
Bolton	\$5,609,536.60	\$4,530,975.20	\$9,488,430.80	\$5,180,880.00	\$88,467,688.00	\$19,121,501.60	\$69,346,186.40	\$27,444,333.20	\$496,925.40
Canton	\$2,830,029.60	\$2,232,338.40	\$4,265,687.60	\$2,326,303.30	\$36,519,392.50	\$8,530,424.10	\$27,988,968.40	\$10,479,629.40	\$215,768.50
Columbia	\$4,258,785.90	\$4,004,187.40	\$7,990,450.00	\$3,159,461.70	\$75,963,726.40	\$18,537,662.40	\$57,426,064.00	\$22,956,264.60	\$640,761.50
Coventry	\$6,058,949.50	\$5,734,134.20	\$10,096,759.30	\$4,683,107.40	\$93,961,591.90	\$21,295,425.40	\$72,666,166.50	\$27,437,969.00	\$587,577.90
East Granby	\$1,189,114.10	\$1,165,790.90	\$2,198,843.90	\$1,052,133.90	\$20,182,586.40	\$4,668,664.90	\$15,513,921.50	\$5,467,296.00	\$144,861.80
East Hartford	\$38,649,638.10	\$35,532,734.70	\$58,100,273.00	\$31,746,077.60	\$392,907,038.30	\$109,063,411.90	\$283,843,626.40	\$118,384,920.00	\$4,191,528.70
East Windsor	\$2,706,970.10	\$2,234,446.30	\$4,146,874.90	\$2,186,885.80	\$35,488,514.50	\$8,734,803.80	\$26,753,710.70	\$11,056,524.40	\$468,570.40
Ellington	\$3,077,070.10	\$2,943,272.50	\$5,566,149.50	\$2,270,511.90	\$52,606,241.60	\$11,455,250.00	\$41,150,991.60	\$14,949,238.50	\$380,400.50
Enfield	\$3,157,437.50	\$3,179,367.70	\$5,224,754.10	\$2,375,235.30	\$45,484,003.60	\$11,049,348.50	\$34,434,655.10	\$12,332,155.60	\$405,404.50
Farmington	\$13,465,701.60	\$8,564,850.70	\$16,224,796.40	\$9,777,063.80	\$132,160,371.60	\$30,011,389.70	\$102,148,981.90	\$40,897,972.40	\$1,008,741.40
Glastonbury	\$58,192,836.40	\$45,079,965.90	\$81,780,224.00	\$47,698,864.00	\$760,530,198.30	\$181,037,121.80	\$579,493,076.50	\$234,157,975.80	\$7,176,062.30
Granby	\$947,967.50	\$898,053.80	\$1,724,551.50	\$818,490.70	\$15,447,035.70	\$3,666,290.60	\$11,780,745.10	\$3,957,306.40	\$88,033.90
Hartford	\$44,839,525.10	\$38,101,468.00	\$59,022,754.30	\$33,956,604.30	\$437,741,592.30	\$105,984,116.60	\$331,757,475.70	\$130,129,114.90	\$3,727,505.60
Hebron	\$23,474,852.30	\$16,861,606.90	\$35,467,531.60	\$20,370,551.50	\$366,544,154.10	\$77,277,458.50	\$289,266,695.60	\$112,987,695.40	\$2,371,625.20
Manchester	\$19,366,433.10	\$15,081,976.80	\$26,744,934.00	\$15,377,776.60	\$231,229,043.70	\$51,165,431.80	\$180,063,611.90	\$70,297,496.90	\$1,468,339.60
Mansfield	\$5,097,211.70	\$5,942,830.00	\$8,599,945.60	\$3,684,375.90	\$83,584,216.30	\$20,654,090.90	\$62,930,125.40	\$21,860,889.90	\$376,170.80
Marlborough	\$28,838,879.20	\$21,164,166.10	\$44,917,852.60	\$25,550,278.10	\$509,940,034.20	\$101,414,391.60	\$408,525,642.60	\$162,507,725.10	\$4,852,524.90
New Britain	\$28,193,181.50	\$22,943,486.00	\$37,232,093.40	\$20,812,352.10	\$315,501,117.30	\$76,163,778.20	\$239,337,339.10	\$97,185,741.50	\$4,218,702.50
Newington	\$32,152,549.60	\$23,505,286.80	\$39,955,665.30	\$26,769,239.30	\$344,118,806.50	\$85,090,422.60	\$259,028,383.90	\$109,467,053.70	\$5,317,200.20
Plainville	\$7,210,923.70	\$6,242,038.20	\$11,331,940.40	\$5,693,173.90	\$95,937,618.20	\$22,726,067.70	\$73,211,550.50	\$29,645,636.70	\$1,127,591.10
Rocky Hill	\$48,388,660.00	\$33,168,134.40	\$54,521,001.80	\$39,144,510.70	\$518,224,861.80	\$126,681,883.30	\$391,542,978.50	\$158,636,285.40	\$5,685,342.50
Simsbury	\$4,304,618.30	\$2,982,420.50	\$5,799,416.30	\$3,492,470.70	\$47,541,029.50	\$11,057,320.40	\$36,483,709.10	\$13,865,077.90	\$272,849.50
Somers	\$1,238,071.70	\$1,294,854.80	\$2,368,074.70	\$953,574.00	\$22,048,363.40	\$5,264,031.40	\$16,784,332.00	\$5,960,206.30	\$183,583.70
South Windsor	\$8,326,324.60	\$7,609,697.50	\$12,957,136.40	\$6,958,171.40	\$106,734,030.40	\$26,414,725.20	\$80,319,305.20	\$32,538,201.70	\$1,343,244.10
Southington	\$16,637,054.70	\$13,082,776.00	\$24,337,776.50	\$13,572,339.00	\$213,065,660.70	\$50,528,043.50	\$162,537,617.20	\$66,031,428.50	\$2,379,188.60
Stafford	\$782,424.50	\$740,191.40	\$1,413,625.50	\$543,352.40	\$13,135,213.10	\$2,974,668.90	\$10,160,544.20	\$3,456,646.00	\$97,006.60
Suffield	\$1,266,928.60	\$1,479,375.90	\$2,507,171.00	\$1,007,288.90	\$21,911,871.60	\$5,271,227.40	\$16,640,644.20	\$5,710,163.30	\$151,249.90
Tolland	\$1,364,421.50	\$1,521,470.20	\$3,045,578.30	\$1,153,607.10	\$30,170,927.50	\$6,380,003.50	\$23,790,924.00	\$8,579,758.90	\$156,276.50
Vernon	\$7,831,594.10	\$7,618,297.40	\$12,997,643.30	\$6,346,478.00	\$113,648,122.10	\$25,923,066.70	\$87,725,055.40	\$33,502,641.70	\$975,523.90
West Hartford	\$21,147,192.00	\$13,992,035.40	\$24,468,166.90	\$14,592,073.60	\$197,725,269.40	\$45,969,916.80	\$151,755,352.60	\$60,760,879.40	\$1,733,976.90
Wethersfield	\$47,611,174.90	\$37,818,469.40	\$61,975,745.20	\$36,991,708.00	\$484,268,671.20	\$127,288,926.90	\$356,979,744.30	\$146,029,691.80	\$5,104,538.60
Willington	\$2,068,338.80	\$2,242,047.80	\$4,017,309.20	\$1,736,755.00	\$39,347,894.60	\$8,549,913.20	\$30,797,981.40	\$10,780,888.80	\$198,122.00
Windsor	\$6,620,695.50	\$6,088,627.70	\$10,280,640.60	\$5,542,837.20	\$82,669,084.50	\$21,005,973.50	\$61,663,111.00	\$25,193,292.70	\$994,475.80
Windsor Locks	\$2,532,892.80	\$2,206,640.20	\$3,678,246.80	\$2,063,453.50	\$30,119,789.80	\$7,552,904.60	\$22,566,885.20	\$8,610,545.30	\$318,345.00
TOTAL	\$5,567,458,557.00	\$3,235,004,881.80	\$4,446,234,796.20	\$4,876,551,346.70	\$43,727,358,463.90	\$10,263,114,071.30	\$33,464,244,392.60	\$13,546,070,233.20	\$451,298,829.40

Portland 5.7 Breakdown

Manchester	\$1,551,666,992.90
Mansfield	\$953,488,837.50
Marlborough	\$1,541,921,766.90
New Britain	\$1,582,204,357.00
Newington	\$1,659,925,299.60
Plainville	\$553,275,074.40
Rocky Hill	\$1,764,063,422.50
Simsbury	\$306,211,513.70
Somers	\$179,398,986.80
South Windsor	\$883,457,128.30
Southington	\$1,103,055,243.60
Stafford	\$118,736,264.20
Suffield	\$154,541,126.70
Tolland	\$248,851,039.20
Vernon	\$923,159,704.10
West Hartford	\$1,349,406,451.20
Wethersfield	\$2,261,985,337.90
Willington	\$352,924,670.90
Windsor	\$645,598,929.20
Windsor Locks	\$236,995,193.80
TOTAL	\$36,056,222,618.90

Haddam 5.7 Total Losses

Town	Estimated Total Losses
Andover	\$120,119,885.00
Avon	\$97,812,901.80
Berlin	\$732,104,806.00
Bloomfield	\$146,977,047.80
Bolton	\$141,218,769.20
Canton	\$58,869,149.30
Columbia	\$118,973,637.50
Coventry	\$148,560,089.20
East Granby	\$31,400,627.00
East Hartford	\$679,512,210.40
East Windsor	\$58,288,786.40
Ellington	\$81,792,884.60
Enfield	\$72,158,358.30
Farmington	\$222,099,497.90
Glastonbury	\$1,234,616,126.70
Granby	\$23,881,439.50
Hartford	\$747,518,564.50
Hebron	\$578,078,017.00
Manchester	\$379,566,000.70
Mansfield	\$129,145,640.20
Marlborough	\$797,771,460.20
New Britain	\$526,086,674.30
Newington	\$581,285,801.40
Plainville	\$157,188,922.20
Rocky Hill	\$857,768,796.60
Simsbury	\$78,257,882.70
Somers	\$34,046,728.60

Town	Wage Loss	Rent Loss	Relocation Loss	Income Loss	Building Loss	Structural Loss	Non-Structural Loss	Content Loss	Inventory Loss
Andover	\$6,920,893.10	\$5,852,164.70	\$12,940,856.40	\$5,989,939.70	\$114,984,947.10	\$26,087,414.80	\$88,897,532.30	\$36,374,771.90	\$942,913.70
Avon	\$16,987,789.70	\$10,382,125.90	\$20,966,822.80	\$14,159,944.80	\$170,733,401.00	\$38,788,561.40	\$131,944,839.60	\$53,498,289.30	\$1,001,322.00
Berlin	\$15,763,613,651.00	\$9,051,411,979.60	\$11,675,370,162.50	\$13,832,653,982.80	\$159,984,282,862.90	\$32,015,726,981.60	\$127,968,555,881.30	\$52,663,782,043.90	\$1,926,679,447.10
Bloomfield	\$24,341,081.40	\$19,487,787.50	\$33,518,445.90	\$17,857,776.10	\$289,108,147.90	\$70,790,340.90	\$218,317,807.00	\$85,927,322.00	\$2,252,318.20
Bolton	\$12,629,434.80	\$9,544,883.30	\$19,438,885.50	\$11,661,490.30	\$185,428,638.70	\$40,442,382.30	\$144,986,256.40	\$58,100,687.00	\$1,181,834.50
Canton	\$8,433,303.90	\$5,872,925.20	\$11,599,190.80	\$7,038,021.10	\$96,222,792.90	\$22,374,183.10	\$73,848,609.80	\$29,884,051.80	\$624,855.70
Columbia	\$4,271,897.80	\$3,951,780.60	\$7,822,412.10	\$3,309,204.70	\$73,698,873.90	\$17,274,174.20	\$56,424,699.70	\$22,377,629.20	\$572,449.50
Coventry	\$8,474,887.40	\$7,661,852.20	\$14,204,930.50	\$6,745,870.20	\$130,782,786.00	\$29,860,755.70	\$100,922,030.30	\$39,401,039.10	\$953,593.80
East Granby	\$3,116,694.90	\$2,758,321.20	\$5,366,763.60	\$2,824,558.10	\$49,728,404.60	\$11,070,197.00	\$38,658,207.60	\$15,090,646.00	\$400,487.30
East Hartford	\$176,339,744.30	\$146,591,994.10	\$232,301,852.80	\$147,114,172.90	\$2,016,470,032.00	\$525,685,670.10	\$1,490,784,361.90	\$624,115,121.60	\$25,581,212.00
East Windsor	\$7,377,664.60	\$5,439,745.80	\$10,339,766.00	\$5,989,965.30	\$88,553,434.50	\$22,664,144.90	\$65,889,289.60	\$28,833,905.80	\$1,310,319.80
Ellington	\$6,431,436.50	\$5,466,653.00	\$10,772,165.20	\$4,807,143.30	\$100,025,864.80	\$21,582,395.00	\$78,443,469.80	\$30,305,081.40	\$762,055.70
Enfield	\$6,805,237.90	\$6,317,507.10	\$10,746,523.80	\$5,189,219.60	\$94,619,700.70	\$22,243,573.90	\$72,376,126.80	\$27,906,468.80	\$898,542.50
Farlington	\$59,482,311.90	\$32,540,826.20	\$61,433,411.90	\$42,857,753.80	\$515,779,625.50	\$119,693,150.60	\$396,086,474.90	\$162,863,181.40	\$4,613,762.10
Glastonbury	\$158,725,995.30	\$129,818,557.30	\$224,386,663.30	\$127,538,986.80	\$2,457,461,865.10	\$559,252,801.40	\$1,898,209,063.70	\$781,907,143.90	\$26,463,920.70
Granby	\$2,421,170.70	\$2,102,383.80	\$4,167,937.10	\$2,134,284.10	\$38,207,913.40	\$8,523,934.60	\$29,683,978.80	\$11,304,918.70	\$241,840.70
Hartford	\$225,274,753.40	\$173,059,906.80	\$263,875,322.10	\$173,281,379.70	\$2,291,496,648.60	\$544,660,597.10	\$1,746,836,051.50	\$676,966,476.40	\$23,672,129.20
Hebron	\$24,619,131.00	\$16,731,010.50	\$34,602,953.30	\$20,738,606.10	\$351,489,697.20	\$75,627,944.70	\$275,861,752.50	\$110,322,196.90	\$2,385,612.10
Manchester	\$68,333,870.90	\$48,608,934.60	\$85,305,694.30	\$54,207,131.20	\$773,088,760.70	\$174,577,433.30	\$598,511,327.40	\$234,384,142.40	\$5,787,267.00
Mansfield	\$5,630,767.30	\$6,679,701.40	\$9,810,662.20	\$4,137,437.00	\$95,740,340.20	\$23,265,891.50	\$72,474,448.70	\$25,449,994.40	\$423,991.30
Marlborough	\$31,827,073.40	\$23,002,139.40	\$49,613,102.30	\$27,565,745.50	\$571,237,935.40	\$113,739,908.00	\$457,498,027.40	\$184,785,895.50	\$5,169,716.50
New Britain	\$132,213,708.20	\$102,321,817.20	\$157,068,142.00	\$99,395,066.60	\$1,663,736,833.70	\$375,647,347.70	\$1,288,089,486.00	\$529,885,738.00	\$28,508,891.30
Newington	\$154,971,086.60	\$110,129,450.10	\$179,964,079.00	\$130,542,755.00	\$2,043,878,911.00	\$453,892,361.60	\$1,589,986,549.40	\$672,284,876.30	\$37,715,255.40
Plainville	\$29,890,750.20	\$22,674,981.00	\$40,578,011.30	\$23,708,629.20	\$353,760,951.90	\$88,283,216.50	\$265,477,735.40	\$110,534,894.00	\$4,728,730.70
Rocky Hill	\$167,184,695.30	\$120,401,213.40	\$195,381,921.30	\$140,563,763.40	\$2,460,751,879.10	\$510,532,472.20	\$1,950,219,406.90	\$795,863,042.70	\$30,653,411.10
Simsbury	\$13,439,818.60	\$7,951,189.00	\$16,124,728.40	\$10,782,280.00	\$128,416,172.70	\$29,769,518.70	\$98,646,654.00	\$24,252,064.80	\$807,461.70
Somers	\$2,299,213.30	\$2,276,453.70	\$4,295,043.90	\$1,799,770.10	\$40,572,145.10	\$9,323,097.10	\$31,249,048.00	\$11,900,082.20	\$361,820.00
South Windsor	\$28,281,994.10	\$22,872,235.20	\$38,634,520.50	\$23,886,597.70	\$322,695,731.80	\$84,663,560.80	\$238,032,171.00	\$99,829,931.90	\$4,514,351.90
Southington	\$57,373,125.50	\$39,826,651.30	\$73,510,105.80	\$46,549,801.80	\$670,344,312.50	\$164,183,235.80	\$506,161,076.70	\$211,194,176.20	\$8,774,923.00
Stafford	\$1,260,730.90	\$1,117,314.20	\$2,198,549.90	\$884,334.20	\$20,851,794.50	\$4,523,691.90	\$16,328,102.60	\$5,934,719.00	\$159,483.30
Suffield	\$2,976,824.20	\$3,179,196.70	\$5,641,159.10	\$2,408,895.90	\$50,487,518.10	\$11,522,780.30	\$38,964,737.80	\$14,906,424.20	\$393,205.20
Tolland	\$2,511,011.30	\$2,575,934.30	\$5,209,498.50	\$2,177,408.60	\$51,213,034.00	\$10,709,603.20	\$40,503,430.80	\$15,522,024.60	\$300,381.70
Vernon	\$21,273,394.30	\$18,665,281.80	\$31,533,407.50	\$17,537,984.40	\$274,642,255.80	\$65,935,753.80	\$208,706,502.00	\$83,700,819.00	\$2,897,881.40
West Hartford	\$99,931,165.50	\$59,756,347.30	\$103,582,787.90	\$70,347,760.50	\$907,225,199.30	\$214,216,368.00	\$693,008,831.30	\$284,955,085.00	\$10,853,703.80
Wethersfield	\$217,535,178.10	\$164,299,293.60	\$259,876,590.60	\$170,363,377.40	\$2,835,168,400.30	\$647,555,294.20	\$2,187,613,106.10	\$898,105,716.00	\$34,763,840.60
Willington	\$3,124,257.40	\$3,213,197.70	\$5,943,832.30	\$2,636,293.90	\$58,106,193.60	\$12,418,294.60	\$45,687,899.00	\$16,801,032.10	\$318,657.90
Windsor	\$21,996,000.80	\$17,996,375.60	\$30,512,017.90	\$18,415,167.40	\$248,306,961.50	\$65,902,844.90	\$182,404,116.60	\$77,211,766.80	\$3,162,583.60
Windsor Locks	\$6,224,021.10	\$4,929,186.80	\$8,540,393.80	\$5,121,743.50	\$70,197,941.30	\$17,397,010.70	\$52,800,930.60	\$21,534,359.40	\$794,495.90
TOTAL	\$17,584,545,766.60	\$10,417,469,299.10	\$13,957,089,314.10	\$15,284,924,242.70	\$182,689,498,909.30	\$37,250,408,888.10	\$145,439,090,021.20	\$59,793,667,759.60	\$2,201,628,669.90

Stamford 5.7 Breakdown

Town	Wage Loss	Rent Loss	Relocation Loss	Income Loss	Building Loss	Structural Loss	Non-Structural Loss	Content Loss	Inventory Loss
Andover	\$162,103.90	\$184,234.40	\$370,158.60	\$134,334.80	\$2,714,691.30	\$805,007.80	\$1,909,683.50	\$379,070.10	\$9,870.00
Avon	\$874,013.30	\$723,616.70	\$1,252,173.70	\$709,726.00	\$8,752,515.80	\$2,575,336.90	\$6,177,178.90	\$1,526,704.60	\$30,097.80
Berlin	\$114,593,181.50	\$89,243,765.60	\$116,500,021.90	\$102,860,146.60	\$928,932,614.00	\$266,276,836.40	\$662,655,777.60	\$174,101,068.60	\$5,629,044.90
Bloomfield	\$959,944.80	\$1,007,040.00	\$1,566,050.30	\$725,661.40	\$10,458,572.10	\$3,378,215.60	\$7,080,356.50	\$1,732,428.40	\$52,447.30
Bolton	\$234,375.70	\$243,554.90	\$450,801.20	\$208,776.50	\$3,450,911.60	\$1,010,283.90	\$2,440,627.70	\$813,275.80	\$9,883.90
Canton	\$651,158.10	\$576,794.60	\$1,031,622.90	\$521,414.80	\$7,349,232.60	\$2,203,394.70	\$5,145,837.90	\$1,281,903.30	\$30,062.20
Columbia	\$200,209.20	\$228,467.10	\$373,722.40	\$135,722.90	\$2,852,038.70	\$920,822.70	\$1,931,216.00	\$377,444.70	\$9,949.40
Coventry	\$415,568.90	\$469,231.80	\$713,179.40	\$304,204.60	\$5,291,865.20	\$678,519.50	\$3,640,045.70	\$678,519.50	\$14,627.10
East Granby	\$336,637.00	\$337,524.40	\$597,828.80	\$286,781.00	\$4,302,422.60	\$1,316,741.90	\$2,985,680.70	\$654,165.10	\$17,790.50
East Hartford	\$2,045,121.10	\$2,282,013.60	\$3,227,298.80	\$1,704,789.50	\$17,628,825.10	\$6,148,143.80	\$11,480,681.30	\$3,041,048.10	\$108,017.50
East Windsor	\$408,316.70	\$385,383.60	\$630,498.20	\$325,528.00	\$4,177,355.40	\$1,393,450.90	\$2,783,904.50	\$668,124.30	\$29,839.50
Ellington	\$509,208.30	\$527,722.00	\$896,452.20	\$369,297.50	\$6,512,253.80	\$1,984,267.50	\$4,527,986.30	\$870,274.40	\$25,457.70
Enfield	\$805,520.80	\$837,801.50	\$1,260,798.90	\$586,491.40	\$8,483,849.10	\$2,780,617.30	\$5,703,231.80	\$1,202,457.10	\$42,337.50
Farlington	\$1,566,530.20	\$1,212,187.90	\$2,051,307.20	\$1,143,916.30	\$14,064,096.80	\$4,146,877.90	\$9,917,218.90	\$2,591,913.50	\$67,665.10
Glastonbury	\$1,040,445.60	\$1,135,400.80	\$1,799,223.00	\$818,872.80	\$11,696,096.70	\$3,790,677.90	\$7,905,418.80	\$1,900,297.10	\$56,181.70
Granby	\$321,727.70	\$313,428.30	\$574,601.40	\$271,802.10	\$4,227,207.70	\$1,271,960.20	\$2,955,247.50	\$649,079.10	\$15,663.90
Hartford	\$3,327,877.80	\$3,664,872.20	\$4,864,739.60	\$2,488,688.40	\$28,832,646.60	\$9,274,557.00	\$19,558,089.60	\$4,893,906.70	\$136,941.60
Hebron	\$324,954.60	\$330,982.80	\$644,905.10	\$268,169.50	\$4,989,097.90	\$1,497,373.10	\$3,491,724.80	\$701,354.50	\$16,097.60
Manchester	\$1,124,609.40	\$1,128,554.30	\$1,732,102.80	\$862,705.20	\$11,637,371.90	\$3,579,878.80	\$8,057,493.10	\$1,744,637.60	\$43,810.00
Mansfield	\$445,633.70	\$622,582.10	\$799,899.60	\$313,967.60	\$6,144,549.90	\$2,096,518.40	\$4,048,031.50	\$701,196.00	\$12,437.90
Marlborough	\$255,882.50	\$232,680.80	\$449,399.70	\$214,232.70	\$3,692,575.40	\$1,044,208.20	\$2,648,367.20	\$47,683.60	\$11,088.30

Town	Estimated Total Losses
Andover	\$184,006,486.60
Avon	\$287,729,695.50
Berlin	\$3,246,945,997.00
Bloomfield	\$472,492,879.00
Bolton	\$297,985,854.10
Canton	\$159,585,141.40
Columbia	\$116,004,247.80
Coventry	\$208,224,959.20
East Granby	\$79,285,875.70
East Hartford	\$3,368,514,129.70
East Windsor	\$147,844,801.80
Ellington	\$158,570,399.90
Enfield	\$152,483,200.40
Farlington	\$879,570,872.80
Glastonbury	\$3,906,303,132.40
Granby	\$60,580,448.50
Hartford	\$3,827,626,616.20
Hebron	\$560,889,207.10
Manchester	\$1,269,715,801.10
Mansfield	\$147,872,893.80
Marlborough	\$893,201,608.00
New Britain	\$2,713,130,197.00
Newington	\$3,329,486,413.40
Plainville	\$585,876,948.30
Rocky Hill	\$3,910,799,926.30
Simsbury	\$217,773,715.20
Somers	\$63,504,528.30
South Windsor	\$540,715,363.10
Southington	\$1,107,573,096.10
Stafford	\$32,406,926.00
Suffield	\$79,993,223.40
Tolland	\$79,509,293.00
Vernon	\$449,921,024.20
West Hartford	\$1,536,652,049.30
Wethersfield	\$4,580,112,396.60
Willington	\$90,143,464.90
Windsor	\$417,600,873.60
Windsor Locks	\$117,342,141.80
TOTAL	\$40,277,975,828.50

Stamford 5.7

Town	Estimated Total Losses
Andover	\$3,954,463.10
Avon	\$13,868,847.90
Berlin	\$22,068,798.80
Bloomfield	\$16,502,144.30
Bolton	\$5,079,579.60
Canton	\$11,442,188.50
Columbia	\$4,177,554.40
Coventry	\$7,887,249.70
East Granby	\$6,533,149.40
East Hartford	\$30,037,113.70
East Windsor	\$6,625,045.70
Ellington	\$9,710,665.90
Enfield	\$13,219,256.30
Farlington	\$22,697,617.00
Glastonbury	\$18,446,517.70
Granby	\$6,373,510.20
Hartford	\$48,209,672.00
Hebron	\$7,27

New Britain	\$1,745,503.80	\$1,800,029.20	\$2,556,161.90	\$1,225,012.90	\$17,276,708.00	\$5,230,115.60	\$12,046,592.40	\$3,128,812.80	\$119,890.80
Newington	\$1,518,368.40	\$1,390,332.60	\$2,076,097.50	\$1,186,575.90	\$14,363,386.30	\$4,505,990.00	\$9,857,396.30	\$2,737,541.80	\$142,770.70
Plainville	\$830,304.70	\$839,692.40	\$1,347,894.10	\$647,433.70	\$9,514,154.60	\$2,841,558.10	\$6,672,596.50	\$1,829,623.30	\$78,736.30
Rocky Hill	\$1,025,341.00	\$981,149.70	\$1,477,384.20	\$840,135.70	\$10,559,784.50	\$3,248,116.60	\$7,311,667.90	\$1,858,929.50	\$64,368.40
Simsbury	\$909,663.90	\$727,214.20	\$1,298,533.40	\$748,029.10	\$8,689,707.80	\$2,653,732.50	\$6,035,975.30	\$1,463,893.40	\$30,619.10
Somers	\$307,465.20	\$332,086.60	\$555,493.80	\$234,984.40	\$3,953,627.90	\$1,303,318.10	\$2,650,309.80	\$539,633.10	\$19,043.80
South Windsor	\$865,931.40	\$920,754.60	\$1,404,174.40	\$697,046.50	\$9,188,292.90	\$3,060,191.50	\$6,128,101.40	\$1,459,720.40	\$64,764.30
Southington	\$1,645,672.20	\$1,592,064.80	\$2,616,912.10	\$1,297,770.80	\$19,630,022.00	\$5,723,863.70	\$13,906,158.30	\$3,928,556.20	\$163,218.30
Stafford	\$188,451.50	\$174,919.00	\$308,044.60	\$126,342.20	\$2,199,736.60	\$681,453.30	\$1,518,283.30	\$268,315.20	\$8,450.00
Suffield	\$379,946.40	\$452,148.10	\$718,464.30	\$296,682.80	\$5,004,792.30	\$1,567,966.20	\$3,436,826.10	\$715,149.00	\$19,533.60
Tolland	\$184,833.50	\$226,924.60	\$395,212.80	\$149,815.50	\$3,013,143.70	\$889,719.50	\$2,123,424.20	\$380,846.70	\$7,738.70
Vernon	\$722,013.90	\$852,978.30	\$1,280,031.40	\$568,771.50	\$8,849,125.90	\$2,760,302.10	\$6,088,823.80	\$1,246,641.70	\$39,040.30
West Hartford	\$2,170,258.10	\$1,637,925.80	\$2,527,837.50	\$1,428,055.10	\$16,518,162.60	\$5,044,041.50	\$11,474,121.10	\$2,891,001.60	\$76,163.30
Wethersfield	\$1,567,880.30	\$1,603,160.60	\$2,347,840.90	\$1,208,781.70	\$14,731,182.60	\$4,796,468.50	\$9,934,714.10	\$2,558,728.60	\$87,916.20
Willington	\$296,609.60	\$349,926.50	\$571,698.30	\$233,958.20	\$4,215,684.50	\$1,280,821.60	\$2,934,862.90	\$511,277.90	\$11,853.40
Windsor	\$999,649.30	\$1,035,328.00	\$1,581,608.60	\$827,502.40	\$9,977,372.30	\$3,394,071.00	\$6,583,301.30	\$1,666,348.70	\$70,960.40
Windsor Locks	\$567,034.10	\$541,189.20	\$834,447.30	\$453,737.90	\$5,337,331.20	\$1,785,436.00	\$3,551,895.20	\$824,882.70	\$31,106.80
TOTAL	\$146,527,948.10	\$121,145,663.60	\$165,684,622.80	\$127,425,865.90	\$1,259,213,005.90	\$369,914,156.20	\$889,298,849.70	\$228,734,507.90	\$7,405,485.80

New Britain	\$27,852,119.40
Newington	\$23,415,073.20
Plainville	\$15,087,839.10
Rocky Hill	\$16,807,093.00
Simsbury	\$13,867,660.90
Somers	\$5,942,334.80
South Windsor	\$14,600,684.50
Southington	\$30,874,216.40
Stafford	\$3,274,259.10
Suffield	\$7,586,716.50
Tolland	\$4,358,515.50
Vernon	\$13,558,603.00
West Hartford	\$27,249,404.00
Wethersfield	\$24,105,490.90
Willington	\$6,191,008.40
Windsor	\$16,158,769.70
Windsor Locks	\$8,589,729.20
TOTAL	\$546,346,055.70

East Haddam 6.4

Expected facility building damage percent

Town	Average Percent Damage - None	Average Percent Damage - Slight	Average Percent Damage - Moderate	Average Percent Damage - Extensive	Average Percent Damage - Exceed Slight	Average Percent Damage - Exceed Moderate	Average Percent Damage - Exceed Extensive
Andover	18.7133	20.8967	29.5167	19.8467	81.2767	60.38	30.8567
Avon	54.42	21.4488	16.8575	5.8525	45.57	24.115	7.255
Berlin	34.0818	23.7	25.1655	12.4155	65.9082	42.2045	17.0345
Bloomfield	50.2021	22.3429	18.6507	6.9621	49.7879	27.4407	8.7843
Bolton	28.46	23.324	27.16	14.808	71.53	48.202	21.036
Canton	60.24	19.875	14.3817	4.52	39.75	19.865	5.4817
Columbia	18.0367	20.48	29.4517	20.2817	81.9533	61.4633	32.0117
Coventry	31.0743	23.5943	26.2743	13.6414	68.9157	45.3157	19.0371
East Granby	60.1017	19.9217	14.44	4.5483	39.8883	19.9633	5.5183
East Hartford	35.8235	23.7277	24.5115	11.7242	64.1665	40.4335	15.9162
East Windsor	53.9443	21.5557	17.06	5.9743	46.0457	24.4843	7.4214
Ellington	49.044	22.554	19.139	7.284	50.946	28.385	9.241
Enfield	60.3619	19.8344	14.3296	4.4996	39.6281	19.7904	5.4544
Farmington	48.6833	22.5617	19.2883	7.4208	51.3067	28.7392	9.4467
Glastonbury	21.2763	21.4825	28.8306	18.53	78.7138	57.2263	28.3913
Granby	63.3175	18.8988	13.0838	3.8975	36.6725	17.7663	4.6762
Hartford	39.8821	23.6761	22.9443	10.18	60.1081	36.4267	13.4784
Hebron	3.5487	8.3725	20.6913	25.51	96.4413	88.0637	67.365
Manchester	32.7708	23.6695	25.6558	12.9403	67.2192	43.5447	17.8847
Mansfield	35.3727	23.6767	24.6613	11.9253	64.6173	40.936	16.2667
Marlborough	0.66	2.91	11.645	21.975	99.33	96.415	84.765
New Britain	39.1674	23.7333	23.2367	10.4244	60.8226	37.0841	13.8448
Newington	36.5442	23.8025	24.2658	11.4025	63.4458	39.6408	15.3708
Plainville	46.7836	22.9536	20.0982	7.9282	53.2064	30.2491	10.1491
Rocky Hill	22.5467	22.0911	28.7656	17.7567	77.4433	55.3489	26.5778
Simsbury	58.8938	20.2692	14.9523	4.8131	41.0962	20.82	5.8662
Somers	60.1287	19.8975	14.4312	4.5538	39.8613	19.9588	5.5263
South Windsor	40.6764	23.6255	22.6236	9.9027	59.3136	35.6864	13.0573
Southington	43.7472	23.3439	21.365	8.8756	56.2428	32.8939	11.525
Stafford	57.5925	20.6225	15.505	5.1067	42.3975	21.765	6.2567
Suffield	61.263	19.562	13.949	4.31	38.727	19.163	5.208
Tolland	43.045	23.4288	21.655	9.0963	56.945	33.5112	11.8513
Vernon	40.9306	23.5956	22.5172	9.8194	59.0594	35.4589	12.9383
West Hartford	43.5991	23.3285	21.4203	8.9418	56.3909	33.0582	11.633
Wethersfield	31.8427	23.662	26.012	13.3047	68.1473	44.4773	18.464
Willington	45.36	23.1133	20.6867	8.3833	54.63	31.51	10.8167
Windsor	48.3188	22.6706	19.4459	7.4982	51.6712	28.9935	9.5424
Windsor Locks	56.5556	20.9178	15.9444	5.3389	43.4344	22.5111	6.5611

Percent Damage	Facility Type	Damage Count
1 to 9.9	Avon, eqFireStation	1
	Avon, eqPoliceStation	1
	Avon, eqSchool	6
	Bloomfield, eqFireStation	2
	Bloomfield, eqPoliceStation	1
	Bloomfield, eqSchool	11
	Canton, eqFireStation	1
	Canton, eqPoliceStation	1
	Canton, eqSchool	4
	East Granby, eqFireStation	1
	East Granby, eqPoliceStation	1
	East Granby, eqSchool	4
	East Hartford, eqSchool	1
	East Windsor, eqFireStation	2
	East Windsor, eqPoliceStation	1
	East Windsor, eqSchool	4
	Ellington, eqEmergencyCenter	1
	Ellington, eqFireStation	2
	Ellington, eqPoliceStation	1
	Ellington, eqSchool	6
	Enfield, eqFireStation	5
	Enfield, eqPoliceStation	1
	Enfield, eqSchool	21
	Farmington, eqCareFty	1
	Farmington, eqFireStation	2
	Farmington, eqPoliceStation	1
	Farmington, eqSchool	8
	Granby, eqFireStation	1
	Granby, eqPoliceStation	1
	Granby, eqSchool	6
	Hartford, eqCareFty	1
	Hartford, eqPoliceStation	1
	Hartford, eqSchool	21
	New Britain, eqCareFty	1
	New Britain, eqSchool	5
	Plainville, eqFireStation	1
	Plainville, eqPoliceStation	1
	Plainville, eqSchool	9
	Simsbury, eqFireStation	1
	Simsbury, eqPoliceStation	1
	Simsbury, eqSchool	11
	Somers, eqCareFty	1
	Somers, eqFireStation	1
	Somers, eqSchool	6
	South Windsor, eqFireStation	1
	South Windsor, eqPoliceStation	1
	South Windsor, eqSchool	4
	Southington, eqCareFty	1
	Southington, eqEmergencyCenter	1
	Southington, eqFireStation	1
	Southington, eqPoliceStation	1
	Southington, eqSchool	14
	Stafford, eqCareFty	1
	Stafford, eqFireStation	2
	Stafford, eqPoliceStation	1
	Stafford, eqSchool	8
	Suffield, eqFireStation	1
	Suffield, eqPoliceStation	2
	Suffield, eqSchool	7
	Tolland, eqFireStation	1
	Tolland, eqPoliceStation	1
	Tolland, eqSchool	5
	Vernon, eqCareFty	1
	Vernon, eqFireStation	2
	Vernon, eqPoliceStation	1
	Vernon, eqSchool	6
	West Hartford, eqFireStation	1
	West Hartford, eqPoliceStation	1

West Hartford, eqSchool	26
Willington, eqFireStation	1
Willington, eqSchool	2
Windsor Locks, eqFireStation	2
Windsor Locks, eqPoliceStation	1
Windsor Locks, eqSchool	6
Windsor, eqEmergencyCenter	1
Windsor, eqFireStation	1
Windsor, eqPoliceStation	1
Windsor, eqSchool	14

Appendix D

Model Flood Regulations Revised October 2018

CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION

MODEL FLOODPLAIN MANAGEMENT REGULATIONS NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

Inland/Riverine Community (AE and A Zones only) Level “D” Community

October 2018

Please Note: Effective October 1, 2018, the Connecticut Office of the State Building Inspector (OSBI) amended the current state building code to adopt the 2015 International Residential Code (IRC). Please see the OSBI website for more information on this change, which can be found at: <https://portal.ct.gov/DAS/Office-of-State-Building-Inspector/Building-and-Fire-Code-Adoption-Process> and the 2015 IRC, Chapter 3, Section R322, Flood-Resistant Construction: <https://codes.iccsafe.org/public/document/toc/553/>.

The adoption of the 2015 IRC has made significant changes to the elevation and construction requirements for new construction and substantially improved structures in both coastal and inland floodplains. Section R322.2 contains the elevation requirements for A and AE Zones. Section R322.3 contains the elevation requirements for VE Zones and Coastal AE Zones. Below is a summary of these new requirements:

- **AE and A Zone** – Lowest floor elevated to Base Flood Elevation (BFE) plus 1 foot.
- **AO and AH Zones** – Lowest floor elevated to Highest Adjacent Grade (HAG) as the depth number specified on the flood insurance rate map plus 1 foot or not less than 3 feet if no depth number is specified.
- **VE Zone and Coastal AE Zone** – Bottom of the lowest horizontal member supporting the lowest floor elevated to the BFE plus one foot, with structure built on pier, post or pile foundation utilizing breakaway walls. Breakaway walls in Coastal AE zones must also contain hydraulic flood vents.

The adoption of the 2015 IRC will make significant changes to the elevation requirement for new construction and substantially improved structures in coastal floodplains that may be different than the standards currently contained in your local floodplain zoning regulations or ordinance. There are also other changes. **Bold red text** in this model highlights the changes that need to be made to floodplain zoning regulations or ordinances to match the new state building code standards.

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NOTES:

Text in italics is for information purposes only and can be deleted.

Text that is bolded and in brackets, **[bold text]**, must be completed by the community and unbolded.

1.0 STATUTORY AUTHORIZATION AND PURPOSE

1.1 STATUTORY AUTHORIZATION

The Legislature of the State of Connecticut has in Title 7, Chapter 98, Section 7-148(c)(7)(A) and in Title 8, Chapter 124, Section 8-2 of the General Statutes delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the **[Governing Body]** of the **[Municipality]**, Connecticut, does ordain as follows:

1.2 FINDING OF FACT

The flood hazard areas of the **[Municipality]** are subject to periodic flood inundation which results in the loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.

These flood losses are caused by the cumulative effect of obstructions in the floodplains causing increases in flood heights and velocities, and by the occupancy in flood hazard areas by uses vulnerable to floods or hazards to other lands which are inadequately elevated, floodproofed, or otherwise unprotected from flood damage. Uncontrolled development and use of the floodplains can adversely affect the community.

The **[Municipality]** has voluntarily participated in the National Flood Insurance Program (NFIP) since **[date of entry into the regular program]**. The NFIP is founded on a mutual agreement between the federal government and each participating community. Local, state and federal governments must share roles and responsibilities to meet the goals and objectives of the NFIP. The community's role is of paramount importance. Property owners are able to receive federally-subsidized flood insurance only if the community enacts and enforces the minimum floodplain regulations required for participation in the NFIP.

1.3 STATEMENT OF PURPOSE

It is the purpose of this **[ordinance/regulation]** to regulate floodplain development, promote public health, safety, and general welfare, and minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- 1.3.1 To protect human life and health, and prevent damage to property;
- 1.3.2 To minimize expenditure of public funds for costly flood control projects;
- 1.3.3 To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- 1.3.4 To minimize prolonged business interruptions and other economic disruptions;
- 1.3.5 To minimize damage to public facilities, infrastructure and utilities, such as water and gas mains, electric, telephone and sewer lines, and streets and bridges, located in the floodplain;

- 1.3.6 To help maintain a stable tax base by providing for the sound use and development of flood hazard areas in such a manner as to minimize flood damage and flood blight areas;
- 1.3.7 To insure that potential buyers are notified that property is in a flood hazard area;
- 1.3.8 To prevent increase in flood heights that could increase flood damage and result in conflicts between property owners;
- 1.3.9 To ensure that those who occupy the flood hazard areas assume responsibility for their actions; and
- 1.3.10 To discourage development in a floodplain if there is any practicable alternative to locate the activity, use or structure outside of the floodplain.

1.4 OBJECTIVES

In order to accomplish its purposes, this **[ordinance/regulation]** includes objectives, methods and provisions that:

- 1.4.1 Restrict or prohibit uses which are dangerous to health, safety and property due to flood or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
- 1.4.2 Require that uses vulnerable to floods, including facilities that serve such uses, be protected against flood damage at the time of initial construction;
- 1.4.3 Control the alteration of natural floodplains, stream channels, and natural protective barriers that are involved in the accommodation of flood waters;
- 1.4.4 Control filling, grading, dredging and other development which may increase erosion or flood damage; and
- 1.4.5 Prevent or regulate the construction of barriers or obstructions which will unnaturally divert flood waters or which may increase flood hazards to other lands.

2.0 **DEFINITIONS**

Unless specifically defined below, words and phrases used in this **[ordinance/regulation]** shall have the same meaning as they have in common usage and to give this **[ordinance/regulation]** its most reasonable application.

Area of Shallow Flooding (*for a community with AO or AH Zones only*) - A designated AO, AH, AR/AO, AR/AH, or VO zone on a community's Flood Insurance Rate Map (FIRM) with a one percent or greater annual chance of flooding to an average depth of one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

Base Flood – The flood having a one (1) percent chance of being equaled or exceeded in any given year, also referred to as the one hundred (100) year flood, as published by the Federal Emergency Management Agency (FEMA) as part of a Flood Insurance Study (FIS) and depicted on a Flood Insurance Rate Map (FIRM).

Base Flood Elevation (BFE) – The elevation of the crest of the base flood or 100-year flood. The height in relation to mean sea level expected to be reached by the waters of the base flood at pertinent points in the floodplains of coastal and riverine areas.

Basement – Any area of the building having its floor subgrade (below ground level) on all sides.

Building – see definition for “Structure”.

Cost (*optional definition, but recommended, relates to substantial improvement*) – As related to substantial improvements, the cost of any reconstruction, rehabilitation, addition, alteration, repair or other improvement of a structure shall be established by a detailed written contractor’s estimate.

The estimate shall include, but not be limited to: the cost of materials (interior finishing elements, structural elements, utility and service equipment); sales tax on materials, building equipment and fixtures, including heating and air conditioning and utility meters; labor; built-in appliances; demolition and site preparation; repairs made to damaged parts of the building worked on at the same time; contractor’s overhead; contractor’s profit; and grand total. Items to be excluded include: cost of plans and specifications, survey costs, permit fees, outside improvements such as septic systems, water supply wells, landscaping, sidewalks, fences, yard lights, irrigation systems, and detached structures such as garages, sheds, and gazebos.

Development – Any man-made change to improved or unimproved real estate, including but not limited to the construction of buildings or structures; the construction of additions, alterations or substantial improvements to buildings or structures; the placement of buildings or structures; mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment; the storage, deposition, or extraction of materials; and the installation, repair or removal of public or private sewage disposal systems or water supply facilities.

Existing Manufactured Home Park or Subdivision – A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured home are to be affixed (including, as a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before **[effective date of floodplain regulations or ordinance]**, the effective date of the floodplain management regulations adopted by the community.

Expansion to an Existing Manufactured Home Park or Subdivision – The preparation of additional sites by the construction of facilities for servicing the lots on which the manufacturing homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

Federal Emergency Management Agency (FEMA) - The federal agency that administers the National Flood Insurance Program (NFIP).

Finished Living Space (*optional definition, include only if used in regulation language for fully enclosed areas below BFE*) – As related to fully enclosed areas below the base flood elevation

(BFE), a space that is, but is not limited to, heated and/or cooled, contains finished floors, has sheetrock walls that may or may not be painted or wallpapered, and other amenities such as furniture, appliances, bathrooms, fireplaces and other items that are easily damaged by floodwaters and expensive to clean, repair or replace. Unfinished enclosed areas below the BFE should comply with FEMA Technical Bulletin 2, Flood-Damage Resistant Materials Requirements.

Flood or Flooding – A general and temporary condition of partial or complete inundation of normally dry land areas from either the overflow of inland or tidal waters, or the unusual and rapid accumulation/runoff of surface waters from any source.

Flood Insurance Rate Map (FIRM) – The official map of a community on which the Federal Emergency Management Agency (FEMA) has delineated both the special flood hazard areas (100-year floodplain) and the insurance risk premium zones applicable to a community.

Flood Insurance Study (FIS) – The official study of a community in which the Federal Emergency Management Agency (FEMA) has conducted an examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations.

Floodway – The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one (1.0) foot. For the purposes of these regulations, the term “Regulatory Floodway” is synonymous in meaning with the term “Floodway”.

Functionally Dependent Use or Facility – A use or facility that cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities. The term does not include seafood processing facilities, long-term storage, manufacturing, sales or service facilities.

Highest Adjacent Grade (HAG) (*for community with AO/AH zones*) – The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

Historic Structure – Any structure that is: (a) Listed individually in the National Register of Historic Places (a listing maintained by the Department of the Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register; (b) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historic significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district; (c) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or (d) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either: (1) By an approved state program as determined by the Secretary of the Interior or (2) Directly by the Secretary of the Interior in states without approved programs.

Lowest Floor – The lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage, in an area other than a basement area is not considered a building’s lowest floor, provided that such an area meets the design requirements specified in Section 5.3.1.3 of this [ordinance or regulation].

Manufactured Home – A structure, transportable in one (1) or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term also includes park trailers, travel trailers, recreational vehicles and other similar vehicles or transportable structures placed on a site for one hundred and eighty (180) consecutive days or longer and intended to be improved property.

Manufactured Home Park or Subdivision – A parcel or contiguous parcels of land divided into two (2) or more manufactured home lots for rent or sale.

Market Value – As related to substantial improvement and substantial damage, the market value of the structure shall be determined by **(choose one of the following: an independent appraisal by a professional appraiser; the property’s tax assessment, minus land value; the replacement cost minus depreciation of the structure; the structure’s Actual Cash Value)** prior to the start of the initial repair or improvement, or in the case of damage, the value of the structure prior to the damage occurring.

Mean Sea Level (MSL) – The North American Vertical Datum (NAVD) of 1988 or other datum, to which base flood elevations shown on a community’s Flood Insurance Rate Map (FIRM) are referenced.

New Construction – Structures for which the “start of construction” commenced on or after **[effective date of floodplain regulations, date of initial adoption]**, the effective date of the floodplain management regulations, and includes any subsequent improvements to such structures.

New Manufactured Home Park or Subdivision – A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after **[effective date of floodplain regulations or ordinance]**, the effective date of the floodplain management regulation adopted by the community.

Recreational Vehicle – A vehicle which is: (a) built on a single chassis; (b) four hundred (400) square feet or less when measured at the largest horizontal projection; (c) designed to be self-propelled or permanently towable by a light duty truck; and (d) designed primarily not for use as a permanent dwelling but as a temporary living quarters for recreational, camping, travel, or seasonal use.

Special Flood Hazard Area (SFHA) – The land in the floodplain within a community subject to a one (1) percent or greater chance of flooding in any given year. SFHAs are determined utilizing the base flood elevations (BFE) provided on the flood profiles in the Flood Insurance Study (FIS) for a community. BFEs provided on Flood Insurance Rate Map (FIRM) are only approximate (rounded up or down) and should be verified with the BFEs published in the FIS for a specific location. SFHAs include, but are not necessarily limited to, the land shown as Zones A, A1-30, AE, AO, AH on a FIRM. The SFHA is also called the Area of Special Flood Hazard.

Start of Construction – For other than new construction or substantial improvements under the Coastal Barrier Resources Act (P.L. 97-348), includes substantial improvement and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, substantial improvement or other improvement was within one

hundred and eighty (180) days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation, or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erections of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

Structure – A walled and roofed building which is principally above ground, including a manufactured home, a gas or liquid storage tank, or other man-made facilities or infrastructures.

Substantial Damage – Damage of any origin sustained by a structure, whereby the cost of restoring the structure to its pre-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

Substantial Improvement – Any combination of repairs, reconstruction, rehabilitation, alterations, additions or other improvements to a structure, taking place during a ten (10) year period, in which the cumulative cost equals or exceeds fifty (50) percent of the market value of the structure before the “start of construction” of the improvement. This term includes structures that have incurred “substantial damage”, regardless of the actual repair work performed. For purposes of this definition, “substantial improvement” is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include either: (1) Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or (2) Any alteration of a “historic structure”, provided that the alteration will not preclude the structure’s continued designation as a “historic structure”.

Variance - A grant of relief by a community from the terms of the floodplain management **[ordinance/regulation]** that allows construction in a manner otherwise prohibited and where specific enforcement would result in unnecessary hardship.

Violation – Failure of a structure or other development to be fully compliant with the community’s floodplain management **[ordinance/regulations]**. A structure or other development without required permits, lowest floor elevation documentation, flood-proofing certificates or required floodway encroachment calculations is presumed to be in violation until such time as that documentation is provided.

Water Surface Elevation – The height, in relation to the North American Vertical Datum (NAVD) of 1988 (or other datum, where specified), of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

3.0 GENERAL PROVISIONS

3.1 AREAS TO WHICH THIS [ORDINANCE/REGULATION] APPLIES

This [ordinance/regulation] shall apply to all Special Flood Hazard Areas (SFHA) within the [Municipality].

3.2 BASIS FOR ESTABLISHING THE SPECIAL FLOOD HAZARD AREAS (SFHA)

The Special Flood Hazard Areas (SFHA) identified by the Federal Emergency Management Agency (FEMA) in its Flood Insurance Study (FIS) for [County], dated [date of most recent FIS], accompanying Flood Insurance Rate Maps (FIRM), dated [date of most recent FIRM], and other supporting data applicable to the [Municipality], and any subsequent revisions thereto, are adopted by reference and declared to be a part of this [ordinance/regulation]. Since mapping is legally adopted by reference into this [ordinance/regulation] it must take precedence when more restrictive until such time as a map amendment or map revision is obtained from FEMA.

The SFHA includes any area shown on the FIRM as Zones A, AE, AO, and AH, including areas designated as a floodway on a FIRM. SFHAs are determined utilizing the base flood elevations (BFE) provided on the flood profiles in the Flood Insurance Study (FIS) for a community. BFEs provided on Flood Insurance Rate Map (FIRM) are only approximate (rounded up or down) and should be verified with the BFEs published in the FIS for a specific location. Also included are areas of potential, demonstrable or historical flooding, including any area contiguous with but outside the SFHA identified by FEMA, and where the land surface elevation is lower than the base flood elevation (BFE) as shown in the FIS, and the area is not protected from flooding by a natural or man-made feature. The FIRM and FIS are on file in the [Municipal Office], [Office Location], [Municipality].

3.3 STRUCTURES ALREADY IN COMPLIANCE

A structure or development already in compliance with this [ordinance/regulation] shall not be made non-compliant by any alteration, modification, repair, reconstruction or improvement and must also comply with other applicable local, state, and federal regulations. No structure or land shall hereafter be located, extended, converted, modified or structurally altered without full compliance with the terms of this [ordinance/regulation] and other applicable regulations.

3.4 ABROGATION AND GREATER RESTRICTIONS

This [ordinance/regulation] is not intended to repeal, abrogate or impair any existing easements, covenants, or deed restrictions. However, where this [ordinance/regulation] and another ordinance, regulation easement, covenant or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

3.5 INTERPRETATION

In the interpretation and application of this [ordinance/regulation], all provisions shall be: 1) considered as minimum requirements; 2) liberally construed in favor of the governing body, and; 3) deemed neither to limit nor repeal any other powers granted under State statutes.

3.6 WARNING AND DISCLAIMER OF LIABILITY

The degree of flood protection required by this **[ordinance/regulation]** is considered the minimum reasonable for regulatory purposes and is based on scientific and engineering consideration and research. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This **[ordinance/regulation]** does not imply or guarantee that land outside the Special Flood Hazard Area or uses permitted in such areas will be free from flooding and flood damages. This **[ordinance/regulation]** shall not create liability on the part of the **[Municipality]** or by any officer or employee thereof for any flood damages that result from reliance on this **[ordinance/regulation]** or any administrative decision lawfully made thereunder. The **[Municipality]**, its officers and employees shall assume no liability for another person's reliance on any maps, data or information provided by the **[Municipality]**.

3.7 SEVERABILITY

If any section, subsection, paragraph, sentence, clause, or phrase of this **[ordinance/regulation]** should be declared invalid for any reason whatsoever, such decision shall not affect the remaining portions of this **[ordinance/regulation]**, which shall remain in full force and effect; and to this end the provisions of this **[ordinance/regulation]** are hereby declared to be severable.

4.0 ADMINISTRATION

4.1 DESIGNATION OF THE LOCAL ADMINISTRATOR

The **[title of local administrator]** is hereby appointed to administer, implement and enforce the provisions of this **[ordinance/regulation]**.

4.2 CERTIFICATION

Where required under this **[ordinance/regulation]**, a registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions of this **[ordinance/regulation]**. Such certification must be provided to the **[title of local administrator]**.

4.3 ESTABLISHMENT OF THE FLOODPLAIN DEVELOPMENT PERMIT

A Floodplain Development Permit shall be required in conformance with the provisions of this **[ordinance/regulation]** prior to the commencement of any development activities. Permits issued under this **[ordinance/regulation]** shall expire if actual construction of a permitted structure does not commence within one hundred and eighty (180) days of the permit approval date.

OR

ESTABLISHMENT OF THE FLOOD MANAGEMENT SECTION OF THE [DEVELOPMENT/BUILDING/ZONING] PERMIT

The flood management section of the **[Development/Building/Zoning]** Permit must be completed in conformance with the provisions of this **[ordinance/regulation]** prior to the commencement of any development activities. Permits issued under this **[ordinance/regulation]** shall expire if actual construction of a permitted structure does not commence within one hundred

and eighty (180) days of the permit approval date.

4.4 PERMIT APPLICATION PROCEDURES

A **[floodplain development/development/building/zoning]** permit is hereby established for all construction and other development to be undertaken in Special Flood Hazard Areas in this community. Prior to any development activities, application for a **[floodplain development/development/building/zoning]** permit shall be made to the **[title of local administrator]** on forms provided and may include, but not be limited to, plans in duplicate drawn to scale showing, at a minimum, the property lines and location of the parcel; the nature, location, dimensions, and elevations of the area in question; limit and extent of the 100-year floodplain and/or floodway boundary and base flood elevation(s); existing and proposed structures, fill, storage of materials, drainage facilities and the location of the foregoing. Specifically, the following information is required to be submitted to the **[title of local administrator]**:

4.4.1 Application Stage

The applicant shall provide at least the following information, where applicable. Additional information may be required on the permit application form.

- 4.4.1.1 Base flood elevation (BFE) for the site in question as determined in the FEMA Flood Insurance Study (FIS) or Flood Insurance Rate Map (FIRM). The FIS flood profiles provide more accurate BFE data than the FIRM. The extent of the 100-year floodplain and floodway must be depicted with a boundary line on any site plans and shown in relation to existing and proposed structures or development;
- 4.4.1.2 Elevation in relation to mean sea level of the proposed lowest floor, including basement, of all new construction, substantial improvements or repairs to structures that have sustained substantial damage;
- 4.4.1.3 Elevation in relation to mean sea level to which any non-residential new construction, substantial improvements or repair to structures that have sustained substantial damage will be dry flood-proofed;
- 4.4.1.4 Description of the extent to which any watercourse will be altered or relocated as a result of the proposed development. Computations by a registered professional engineer must be submitted that demonstrate that the altered or relocated segment will provide equal or greater conveyance than the original stream segment. The applicant must submit any maps, computations or other materials required by the Federal Emergency Management Agency (FEMA) in order to officially amend or revise the Flood Insurance Rate Map. The applicant must pay any fees or other costs assessed by FEMA for this purpose. The applicant must also provide assurances that the conveyance capacity of the altered or relocated stream segment will be maintained;
- 4.4.1.5 A statement and supporting documentation (all costs of project, market value of structure, etc.) verifying that the proposed alterations to an existing structure meets or does not meet the criteria of the substantial improvement and/or substantial damage definition. If a development meets the definition of substantial improvement and/or substantial damage, the structure must be brought into compliance with all floodplain regulations as if it was new construction;
- 4.4.1.6 Where applicable the following certifications by a registered professional engineer or architect are required, and must be provided to the **[title of local administrator]**. The design and methods of construction must be certified to be in accordance with

accepted standards of practice and with the provisions of Section 5.3.

- (a) Non-residential flood-proofing must meet the provisions of Section 5.3.1.2;
- (b) Fully enclosed areas below the base flood elevation (BFE) must meet the minimum design criteria in Section 5.3.1.3;
- (c) No (0.00) increase in floodway water surface elevations are allowed. Any development in a floodway must meet the provisions of Section 5.3.4;

4.4.2 Construction Stage

Upon completion of the applicable portion of construction, the applicant shall provide verification to the **[title of local administrator]** of the following as is applicable:

4.4.2.1. Lowest floor elevation shall be verified for:

- (a) A structure in Zones A, AE, A1-30, AO or AH is the top of the lowest floor (including basement);
- (b) A non-residential structure which has been dry flood-proofed is the elevation to which the flood-proofing is effective (Note: For insurance purposes, a dry flood-proofed, non-residential structure is rated based on the elevation of its lowest floor unless it is floodproofed to one foot above the BFE.);

4.4.2.2 Deficiencies detected by the review of the above listed shall be corrected by the permit holder immediately and prior to further progressive work being permitted to proceed. Failure to submit the survey or failure to make said corrections required hereby, shall be cause to issue a stop-work order for the project.

4.5 DUTIES AND RESPONSIBILITIES OF THE LOCAL ADMINISTRATOR

Duties of the **[title of local administrator]** shall include, but not be limited to:

- 4.5.1 Review all permit applications for completeness, particularly with the requirements of Section 4.4.1.
- 4.5.2 Review all permit applications to determine whether the proposed development and building sites will be reasonably safe from flooding.
- 4.5.3 Review all development permits to assure that the permit requirements of this **[ordinance/regulation]** have been satisfied.
- 4.5.4 Review all permit applications to assure that all necessary federal or state permits have been received. Require that copies of such permits be provided and maintained on file with the permit application. Such permits include, but are not limited to, Coastal Area Management (CAM) Permit, Water Diversion Permit, Dam Safety Permit, and Army Corps of Engineers 401 and 404 Permits.
- 4.5.5 Notify the regional planning agency and affected municipality at least thirty-five (35) days prior to a public hearing if any change of regulation or use of a flood zone will affect an area within five hundred (500) feet of another municipality.
- 4.5.6 Notify the adjacent communities and the Department of Energy and Environmental Protection (DEEP), Inland Water Resources Division, prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
- 4.5.7 Assure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.
- 4.5.8 Obtain, record and maintain the elevation (in relation to mean sea level) of the lowest floor (including basement) of all new construction, substantial improvements or repair to a

- structure that has sustained substantial damage.
- 4.5.9 Obtain, record and maintain the elevation (in relation to mean sea level) to which the new construction, substantial improvement or repair to a structure that has sustain substantial damage has been flood-proofed.
- 4.5.10 When flood-proofing is utilized for a particular structure, the **[title of local administrator]** shall obtain certification from a registered professional engineer or architect, in accordance with Section 5.3.1.2.
- 4.5.11 Where interpretation is needed as to the exact location of boundaries of the area of special flood hazard (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the **[title of local administrator]** shall make necessary interpretation. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this **[ordinance/regulation]**.
- 4.5.12 Require the applicant to provide base flood elevation data for all proposed development, including manufactured home parks and subdivisions.
- 4.5.13 When base flood elevation data or floodway data have not been provided in accordance with Section 3.2 and Section 4.4, the **[title of local administrator]** shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source in order to administer the provisions of Section 5.0.
- 4.5.14 All records pertaining to the provisions of this **[ordinance/regulation]** shall be obtained and maintained in the office of the **[title of local administrator]**.
- 4.5.15 Upon completion of the permitted development and prior to issuance of a Certificate of Occupancy (CO), necessary as-built surveys (prepared by a Connecticut Licensed Professional as per Connecticut State Statutes) and engineering and architectural certifications shall be provided to the **[title of local administrator]** demonstrating compliance with the approved plans and standards set forth in Section 4.4.

5.0 PROVISIONS FOR FLOOD HAZARD REDUCTION

5.1 GENERAL STANDARDS

In all Special Flood Hazard Areas (SFHAs) the following provisions are required:

- 5.1.1 New construction, substantial improvements, and structures that have sustained substantial damage shall be constructed using methods and practices that minimize flood damage.

5.1.2 New construction, substantial improvements, and structures that have sustained substantial damage shall be constructed with materials and utility equipment that are flood-damage resistant and conform to the provisions of FEMA Technical Bulletin 2, Flood Damage-Resistant Material Requirements. This includes, but is not limited to, flooring, interior and exterior walls, wall coverings and other materials installed below the base flood elevation plus one (1.0) foot.

- 5.1.3 New construction, substantial improvements, and repairs to structures that have sustained substantial damage shall be anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

- 5.1.4 New construction, substantial improvements and repair to structures that have sustained substantial damage cannot be constructed or located entirely or partially over water unless they are a functionally dependent use or facility.
- 5.1.5 The bottom of all electrical, heating, plumbing, ventilation and air conditioning equipment, appliances, fixtures and components, HVAC duct work and duct systems, and any other utility service equipment, facilities, machinery, or connections servicing a structure shall be elevated one (1.0) foot above the base flood elevation (BFE). This includes, but is not limited to, furnaces, oil or propane tanks, air conditioners, heat pumps, hot water heaters, ventilation duct work, washer and dryer hook-ups, electrical junction boxes, and circuit breaker boxes. Systems, fixtures, equipment and components shall not be mounted on or penetrate through breakaway walls intended to fail under flood loads. Connections or other equipment that must be located below the BFE plus 1.0 foot elevation are permitted only when no other elevation alternative is available and provided they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of the base flood event. Electrical wiring systems that must be located below the BFE plus 1.0 foot shall conform to the standards for wet locations.**
- 5.1.6 New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.
- 5.1.7 New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharges from the system into flood waters.
- 5.1.8 On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.
- 5.1.1 Underground tanks shall be anchored to prevent flotation, collapse and lateral movement under conditions of the base flood. Above-ground storage tanks which are located outside or inside of a structure must be elevated one (1.0) foot above the base flood elevation (BFE) or shall be securely anchored to prevent flotation, collapse or lateral movement under conditions of the base flood. Where elevated on platforms, the platforms shall be cantilevered from or knee braced to the building or shall be supported on elevated foundations that conform to the standards for the particular flood zone as described in Section 5.3. Anchored tanks must have the top of the fill pipe located at least one (1.0) foot above the BFE and have a screw fill cap that does not allow for the infiltration of flood water.**
- 5.1.10 In any portion of a watercourse that is altered or relocated, the flood carrying capacity must be maintained. Notify adjacent communities and the Connecticut Department of Energy and Environmental Protection (CTDEEP), Inland Water Resources Division (IWRD) prior to any alteration or relocation of a watercourse.

5.1.11 If any portion of a structure lies within the Special Flood Hazard Area (SFHA), the entire structure is considered to be located within the SFHA and must meet the construction requirements of the flood zone. The structure includes any structurally attached additions, garages, decks, porches, sunrooms, patios or any other structure attached to the main structure.

5.1.12 If a structure lies within two or more flood zones, the construction standards of the most restrictive zone apply to the entire structure (i.e., VE zone is more restrictive than AE zone; structure must be built to the highest BFE). The structure includes any structurally attached additions, garages, decks, porches, patios, sunrooms, or any other structure attached to the main structure.

5.1.13 Compensatory Storage. The water holding capacity of the floodplain, except those areas which are tidally influenced, shall not be reduced. Any reduction caused by filling, new construction or substantial improvements involving an increase in footprint to the structure, shall be compensated for by deepening and/or widening of the floodplain. Storage shall be provided on-site, unless easements have been gained from adjacent property owners; it shall be provided within the same hydraulic reach and a volume not previously used for flood storage; it shall be hydraulically comparable and incrementally equal to the theoretical volume of flood water at each elevation, up to and including the 100-year flood elevation, which would be displaced by the proposed project. Such compensatory volume shall have an unrestricted hydraulic connection to the same waterway or water body. Compensatory storage can be provided off-site if approved by the municipality.

5.1.14 Equal Conveyance. Within the floodplain, except those areas which are tidally influenced, as designated on the Flood Insurance Rate Map (FIRM) for the community, encroachments resulting from filling, new construction or substantial improvements involving an increase in footprint of the structure, are prohibited unless the applicant provides certification by a registered professional engineer demonstrating, with supporting hydrologic and hydraulic analyses performed in accordance with standard engineering practice, that such encroachments shall not result in any (0.00 feet) increase in flood levels (base flood elevation). Work within the floodplain and the land adjacent to the floodplain, including work to provide compensatory storage shall not be constructed in such a way so as to cause an increase in flood stage or flood velocity.

5.2 STANDARDS FOR WATERCOURSES WITHOUT ESTABLISHED BASE FLOOD ELEVATIONS (UN-NUMBERED A ZONE), ADOPTED FLOODWAYS AND/OR FLOOD MAPPING

5.2.1 The [title of local administrator] shall require base flood elevation (BFE) data be provided with any application for new construction, substantial improvement, repair to structures which have sustained substantial damage or other development in Zone A without a FEMA-published BFE (un-numbered A Zone). **A registered professional engineer must determine the BFE in accordance with accepted hydrologic and hydraulic engineering practices and document the technical methods used. Studies, analyses and computations shall be submitted in sufficient detail to allow thorough review and approval.** The [title of local administrator] shall obtain, review and reasonably utilize

any BFE and floodway data available from a federal, state or other source, including data developed for subdivision proposals, as criteria for requiring that new construction, substantial improvements, repair to structures which have sustained substantial damage or other development in un-numbered A Zones on the community's Flood Insurance Rate Map (FIRM) meet the standards in Section 4.4 and Section 5.3. If no BFE can be determined, the lowest floor, including basement, must be elevated to two (2) feet above the highest adjacent grade next to the structure.

- 5.2.2 When BFEs have been determined within Zones A1-30 and AE on the community's FIRM but a regulatory floodway has not been designated, the **[title of local administrator]** must require that no new construction, substantial improvements, repair to structures which have sustained substantial damage or other development, including fill, shall be permitted which will increase the water surface elevation of the base flood more than one (1.0) foot at any point within the community when all existing and anticipated development is considered cumulatively with the proposed development.
- 5.2.3 The **[title of local administrator]** may request floodway data of an applicant for watercourses without FEMA-published floodways. When such data is provided by an applicant or whenever such data is available from any other source (in response to the municipality's request or not), the community shall adopt a regulatory floodway based on the principle that the floodway must be able to convey the waters of the base flood without increasing the water surface elevation more than one (1.0) foot at any point within the community.
- 5.2.4 The **[title of local administrator]** shall obtain, review and reasonably utilize any BFE and floodway data available from a federal, state or other source, as criteria for requiring that new construction, substantial improvements, repair to structures which have sustained substantial damage or other development in any area of potential, demonstrable or historical flooding within the community meet the standards in Section 4.4 and Section 5.3.
- 5.2.5 Under the provisions of 44 CFR Chapter 1, Section 65.12, of the National Flood Insurance Program regulations, a community may approve certain development in Zones A1-30, AE, AH, on the community's FIRM which increases the water surface elevation of the base flood by more than one (1.0) foot, provided that the community first completes all of the provisions required by Section 65.12.

5.3 SPECIFIC STANDARDS

- 5.3.1 Construction Standards in Special Flood Hazard Areas (SFHA), Zones A, A1-30, AE.

5.3.1.1 Residential Construction.

All new construction, substantial improvements, and repair to structures that have sustained substantial damage which are residential structures shall have the bottom of the lowest floor, including basement, elevated one (1.0) foot above the base flood elevation (BFE). Electrical, plumbing, machinery or other utility equipment that service the structure must be elevated one (1.0) foot above the BFE.

5.3.1.2 Non-Residential Construction.

All new construction, substantial improvements, and repair to structures that have sustained substantial damage which are commercial, industrial or non-residential structures shall:

- (a) Have the bottom of the lowest floor, including basement, elevated one (1.0) foot above the base flood elevation (BFE); or**
- (b) In lieu of being elevated, non-residential structures may be dry flood-proofed to one (1.0) foot above the BFE provided that together with all attendant utilities and sanitary facilities the areas of the structure below the required elevation are watertight with walls substantially impermeable to the passage of water, and provided that such structures are composed of structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. A registered professional engineer or architect shall review and/or develop structural design specifications and plans for the construction, and shall certify that the design and methods of construction are in accordance with acceptable standards of practice for meeting the provisions of this section. Such certification shall be provided to the [title of local administrator] on the FEMA Floodproofing Certificate, Form 81-65.**
- (c) The bottom of all electrical, plumbing, machinery or other utility equipment that service the structure must be elevated one (1.0) foot above the BFE.**

5.3.1.3 Fully Enclosed Areas Below The Base Flood Elevation Of Elevated Buildings.

All new construction, substantial improvements, or repair to structures that have sustained substantial damage, whether residential or non-residential, that include fully enclosed areas formed by a foundation and other exterior walls shall have the lowest floor elevated to one (1.0) foot above the base flood elevation (BFE). The elevated building shall be designed to preclude finished living space below the lowest floor and be designed to allow for the entry and exit of flood waters to automatically equalize hydrostatic flood forces on exterior walls (wet flood-proofing). Designs for complying with this requirement must either be certified by a registered professional engineer or architect as meeting the requirements of ASCE 24 Section 2.6.2.2, or meet the following minimum criteria listed in sections (a)-(h) below:

- (a) Provide a minimum of two (2) openings (hydraulic flood vents) having a total net area of not less than one square inch for every one square foot of enclosed area subject to flooding. The enclosed area is measured on the exterior of the enclosure walls. These hydraulic openings must be located on at least two different exterior walls of each enclosed area. If the structure has more than one enclosed area, openings must be installed in the exterior walls of each enclosed area so that flood waters can enter directly from the outside;**

- (b) The bottom of all openings shall be no higher than one (1.0) foot above the higher of either the final interior grade or floor elevation, or the finished exterior grade adjacent to the outside of the foundation wall. At least one side of the structure's fully enclosed area must be at or above grade. Fill placed around the foundation walls must be graded so that the elevation inside the enclosed area is equal to or higher than the adjacent outside elevation on at least one side of the building. The finished floor of the enclosed area shall be no lower than the bottom of the foundation openings. The foundation slab of a residential structure, including the slab or a crawlspace, must be set equal to the outside finished grade on at least one side of the building;
- (c) The openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic entry and exit of flood waters in both directions without any external influence or control such as human intervention, including the use of electrical and other non-automatic mechanical means. These coverings must not block or impede the automatic flow of floodwaters into and out of the enclosed area. Other coverings may be designed and certified by a registered professional engineer or approved by the [title of local administrator];
- (d) Openings shall not be less than three (3) inches in any direction in the plane of the wall;
- (e) The area cannot be used as finished living space. Use of the enclosed area shall be the minimum necessary and shall only be used for the parking of vehicles, building access or limited storage. Access to the enclosed area shall be the minimum necessary to allow for the parking of vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the living area (stairway or elevator). The enclosed area shall not be used for human habitation;
- (f) All interior walls, floor, and ceiling materials located below one (1.0) foot above the BFE shall be unfinished and resistant to flood damage-resistant in accordance with FEMA Technical Bulletin 2, Flood Damage-Resistant Requirements.
- (g) Electrical, plumbing, HVAC ductwork, machinery or other utility equipment and connections that service the structure (including, but not limited to, furnaces, oil or propane tanks, air conditioners, heat pumps, hot water heaters, ventilation, washers and dryer hook-ups, electrical junction boxes, circuit breaker boxes and food freezers) are prohibited in the fully enclosed area below the BFE plus one (1.0) foot. Utilities or service equipment located in this enclosed area, even if elevated one (1.0) foot above the BFE in the space, will subject the structure to increased flood insurance rates.

(h) A residential building with a structurally attached garage having the floor slab below the BFE is considered an enclosed area below the BFE and must meet the standards of Sections 5.3.1.3 (a)-(g). A garage attached to a residential structure, constructed with the garage floor slab below the BFE, must be designed to allow for the automatic entry and exit of floodwaters in both directions. Flood openings or vents are required in the exterior walls of the garage or in the garage doors. Garage doors that must be manually opened do not meet the flood vent opening requirements in Section 5.3.1.3 (a)-(c). In addition to the automatic entry of floodwaters, the areas of the garage below BFE plus one (1.0) foot must be constructed with flood damage-resistant materials per the requirements of FEMA Technical Bulletin 2. Garages attached to non-residential structures must also meet the aforementioned requirements or be dry floodproofed as per the requirements of Section 5.3.1.2.

5.3.2 Manufactured (Mobile) Homes and Recreational Vehicles (RVs).

5.3.2.1 In all Special Flood Hazard Areas (SFHA), any manufactured (mobile) homes to be newly placed, undergoing a substantial improvement or repaired as a result of substantial damage, shall be **elevated so that the bottom of the frame is located one (1.0) foot above the base flood elevation (BFE)**. The manufactured home must also meet all the construction standards per Section 5.3.1. **The foundation and anchorage of manufactured homes to be located in floodways shall be designed and constructed in accordance with ASCE24.** This includes SFHAs outside a manufactured home park or subdivision, in a new manufactured home park or subdivision, in an existing manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or on a site in an existing park which a manufactured home has incurred substantial damage as a result of a flood.

5.3.2.2 All manufactured (mobile) homes within a SFHA shall be placed on a permanent foundation which itself is securely anchored and to which the structure is securely anchored so that it will resist flotation, lateral movement and hydrostatic pressures. Anchoring may include, but not be limited to, the use of over-the-top or frame ties to ground anchors.

5.3.2.3 All manufactured (mobile) homes within a SFHA shall be installed using methods and practices which minimize flood damage. Adequate access and drainage should be provided. Elevation construction standards include piling foundations placed no more than ten (10) feet apart, and reinforcement is provided for piers more than six (6) feet above ground level.

5.3.2.4 Recreational vehicles placed on sites within a SFHA shall either (i) be on the site for fewer than 180 consecutive days, and (ii) be fully licensed and ready for highway use, OR (iii) meet all the general standards of Section 5.1 and the elevation and anchoring requirement of Section 5.3.2.1, 5.3.2.2, and 5.3.2.3. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.

5.3.3 Floodways

Located within Special Flood Hazard Areas (SFHA) are areas designated as floodways on the community's Flood Insurance Rate Maps (FIRM) or Flood Boundary and Floodway Maps (FBFM). Since the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles and has erosion potential, no encroachments, including fill, new construction, substantial improvements, repairs to substantially damaged structures and other developments shall be permitted unless certification, with supporting technical data, by a registered professional engineer is provided demonstrating, through hydrologic and hydraulic analyses performed in accordance with standard engineering practice, that encroachments shall not result in any (0.00 feet) increase in flood levels during occurrence of the base flood discharge published by FEMA. **Buildings and structures meeting the standard above and located in whole or in part in the floodway shall be designed and constructed in accordance with ASCE 24.** Fences in the floodway must be aligned with the flow and be of an open design. A permit may be given which allows encroachments resulting in increases in base flood elevations provided the community first obtains a conditional floodway revision by meeting the requirements of C.F.R. 44, Chapter 1, Subsection 65.12.

5.3.4 Standards for Development in Areas of Shallow Flooding (Zones AO and AH)

Located within the Special Flood Hazard Areas (SFHA) are areas designated as shallow flooding areas (AO and AH Zones). These areas have flood hazards associated with base flood depths of one (1) to three (3) feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate. In AO and AH zones, the following provisions apply:

5.3.4.1 For residential structures, all new construction, substantial improvements and repair to structures that have sustained substantial damage **shall have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as one (1.0) foot above the depth number specified on the Flood Insurance Rate Map (FIRM). If no depth number is specified, the lowest floor, including basement, shall be elevated at least three (3.0) feet above the highest adjacent grade.**

5.3.4.2 For non-residential structures, all new construction, substantial improvements and repair to structures that have sustained substantial damage shall:

(a) **Have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as one (1.0) foot above the depth number specified on the Flood Insurance Rate Map (FIRM). If no depth number is specified, the lowest floor, including basement, shall be elevated at least three (3.0) feet above the highest adjacent grade; or**

(b) Together with attendant utility and sanitary facilities be completely flood-proofed to above the highest adjacent grade at least as high as one (1.0) foot above the depth number specified on the FIRM, or if no depth number is specified at least three (3.0) feet above the highest adjacent grade, so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Designs for complying with this requirement must be certified by either a registered professional engineer or architect.

5.3.4.3 On-site drainage for all proposed structures in AO and AH Zones located on slopes shall provide adequate drainage paths to guide flood waters around and away from such structures.

5.3.4.4 Fully enclosed areas below the lowest floor in AO and AH Zones must comply with the provisions of Section 5.3.1.3 for hydraulic flood vents.

6.0 DESIGN STANDARDS FOR SUBDIVISION PROPOSALS

If a proposed subdivision, including the placement of a manufactured home park or subdivision, is located in a Special Flood Hazard Area (SFHA) the following requirements shall apply:

- 6.1 All subdivision proposals shall be consistent with the need to minimize flood damage;
- 6.2 All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;
- 6.3 All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards; and
- 6.4 The **[title of local administrator]** shall require the applicant to provide BFE data for all subdivision proposals, including manufactured home parks and subdivisions, as per Section 4.5.12. In all special flood hazard areas where base flood elevation (BFE) data is not available, the applicant shall provide a hydrologic and hydraulic engineering analysis performed by a registered professional engineer that generates BFEs for all subdivision proposals and other proposed development, including manufactured home parks and subdivisions.

7.0 VARIANCE PROCEDURES

7.1 ESTABLISHMENT OF VARIANCE PROCESS

- 7.1.1 The **[local appeal board]**, as established by the **[Municipality]**, shall hear and decide appeals and requests for variances from the requirements of this **[ordinance/regulation]**.
- 7.1.2 The **[local appeal board]** shall hear and decide appeals when it is alleged there is an error in any requirement, decision or determination made by the **[title of local administrator]** in the enforcement or administration of this **[ordinance/regulation]**.
- 7.1.3 Any person aggrieved by the decision of the **[local appeal board]** or any person owning land which abuts or is within a radius of one hundred (100) feet of the land in question may appeal within fifteen (15) days after such decision to the State Superior Court of **[Judicial District]**, as provided in Section 8-8 of the General Statutes of Connecticut.
- 7.1.4 The **[local administrator]** shall maintain the records of all appeal actions and report any

variances to the Federal Emergency Management Agency (FEMA) in its biennial report.

7.2 SPECIFIC SITUATION VARIANCES

7.2.1 Buildings on a Historic Register

Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places, the State Inventory of Historic Places, or any locally-adopted historic district without regard to the procedures set forth in the remainder of this section and provided the proposed reconstruction, rehabilitation or restoration will not result in the structure losing its historical designation.

7.2.2 Functionally Dependent Use or Facility

Variances may be issued for new construction and substantial improvements and other development necessary for the conduct of a functionally dependent use or facility provided the structure or other development is protected by methods that minimize flood damage, creates no additional threat to public safety and meet all the requirements of Section 7.4.

7.2.3 Floodway Prohibition

Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

7.3 CONSIDERATIONS FOR GRANTING OF VARIANCES

In passing upon such applications, the **[local appeal board]** shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this **[ordinance/regulation]** and the items listed below as 7.3.1 – 7.3.11. Upon consideration of these factors and the purposes of this **[ordinance/regulation]**, the **[local appeal board]** may attach such conditions to the granting of variances as it deems necessary to further the purposes of this **[ordinance/regulation]**.

7.3.1 The danger that materials may be swept onto other lands to the injury of others;

7.3.2 The danger to life and property due to flooding or erosion damage;

7.3.3 The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;

7.3.4 The importance of the services provided by the proposed facility to the community;

7.3.5 The necessity of the facility to waterfront location, in the case of a functionally dependent facility;

7.3.6 The availability of alternative locations not subject to flooding or erosion damage for the proposed use;

- 7.3.7 The compatibility of the proposed use with existing and anticipated development;
- 7.3.8 The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
- 7.3.9 The safety access to the property in times of flood for ordinary and emergency vehicles;
- 7.3.10 The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and
- 7.3.11 The costs of providing governmental services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water systems, and streets and bridges.

7.4 CONDITIONS FOR VARIANCES

- 7.4.1 Variances shall only be used upon a determination that the variance is the minimum necessary to afford relief considering the flood hazard; and in the instance of a historical building, a determination that the variance is the minimum necessary as not to destroy the historic character and design of the building and result in the loss of historic designation of the building. Variances pertain to a piece of property and are not personal in nature. A properly issued variance is granted for a parcel of property with physical characteristics so unusual that complying with the regulation would create an exceptional hardship to the applicant or the surrounding property owners. Those characteristics must be unique to that property and not be shared by adjacent parcels. For example, economic or financial hardship is not sufficient cause for a variance, nor are inconvenience, aesthetic considerations, physical handicaps, personal preferences or disapproval of one's neighbors.
- 7.4.2 Variances shall only be used upon (i) a showing of good and sufficient cause, (ii) a determination that failure to grant the variance would result in exceptional hardship, and; (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisance, damage the rights or property values of other persons in the area, cause fraud on or victimization of the public, or conflict with existing local laws, ordinances or regulations. Only hardships that are based on unusual or unique physical characteristics of the property in question, characteristics that are not shared by adjacent parcels, shall qualify to meet subsection (ii) above. Claims of hardship based on the structure, on economic gain or loss, or on personal or self-created circumstances are not sufficient cause for the granting of a variance.
- 7.4.3 No variance may be issued within a regulatory floodway that will result in any increase in the 100-year flood levels. A variance may be issued for new construction, substantial improvements and other development necessary for the conduct of a "functionally dependent use" provided that there is good and sufficient cause for providing relief; and the variance does not cause a rise in the 100-year flood level within a regulatory floodway. The structure and other development must be protected by methods that minimize flood damages.

- 7.4.4 Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with the lowest floor elevation below the base flood elevation (BFE), and that the cost of flood insurance will be commensurate with the increased risk resulting from the lowest floor elevation up to amounts as high as \$25 for \$100 of insurance coverage.

8.0 **ENFORCEMENT**

- 8.1 Each **[Floodplain/Development/Building/Zoning]** Permit shall authorize, as a condition of approval, the **[title of local administrator]** or designated agents to make regular inspections of the subject property. The **[title of local administrator]** or designated agents are also authorized to inspect any property in a Special Flood Hazard Area (SFHA) where it appears that violations of these regulations may be taking place.
- 8.2 If the **[title of local administrator]** finds that any person is undertaking any construction, substantial improvement, filling, or any other activity or maintaining a condition which in violation of these regulations, the **[title of local administrator]** shall:
- 8.2.1 Issue a written order by certified mail, return receipt requested, to the subject property owner, ordering that the activity cease and ordering the property owner to either seek to obtain a **[Floodplain Development/Building/Zoning]** Permit prior to continuing with the activity or, if appropriate, ordering that all violations and/or obstructions be removed from the Special Flood Hazard Area (SFHA) immediately.
- 8.2.2 Notify the **[Building Official/Inspector]** and request that any **[floodplain/building/zoning/development]** permit(s) in force be revoked or suspended and that a stop work order be issued.
- 8.2.3 The **[title of local administrator]** may suspend or revoke a Floodplain Development Permit if it is found that the applicant has not complied with the terms, conditions or limitations set forth in the permit or has exceeded the scope of work as set forth in the application including application plans. Prior to revoking any permit, the **[title of local administrator]** shall issue notice to the permittee, personally or by certified mail, return receipt requested, setting forth the facts or conduct which warrants the intended action.
- 8.2.4 Failure to comply with any written order issued under this section shall be considered a violation of these regulations and is subject to the penalties described in Section 10.0.
- 8.2.5 In the event violations or obstructions are not promptly removed from the Special Flood Hazard Area (SFHA), the **[title of local administrator]** may cause such removal and remediation work to be performed utilizing bond money held in escrow pursuant to Section 3.0 of this **[ordinance/regulation]**, or may direct the **[director of public works or appropriate agent]** to cause such work to be done and to place a lien against the property.
- 8.2.6 Any person subjected to enforcement action pursuant to this

[ordinance/regulation], may appeal any requirement, decision, or determination of the **[title of local administrator]** to the **[local appeals board]**, in accordance with Section 6.0 of this **[ordinance/regulation]**. Such person shall provide such information as necessary including appropriate certifications from a registered professional engineer or architect in order to substantiate the claim that the requirement, decision, or determination of the **[title of local administrator]** was in error or unwarranted.

9.0 PENALTIES FOR VIOLATION

Any violation of the provisions of this **[ordinance/regulation]** or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with grant of variances or special exceptions, shall constitute a misdemeanor. Any person who violates this **[ordinance/regulation]** or fails to comply with any of its requirements shall, upon conviction thereof, be fined a penalty of **[\$250.00]** per day **[or imprisoned for not more than ten (10) days for each day of violation, or both,]** and in addition shall pay all costs and reasonable legal fees involved in the case. Nothing herein contained shall prevent the **[Municipality]** from taking such lawful action as is necessary to prevent or remedy any violation.

Appendix E
STAPLEE Ratings for Mitigation Actions

										Weighted STAPLEE Criteria															Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CRCOG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Andover	And1	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	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8	
Andover	And2	Coordinate with municipal agent for the elderly to update the special needs population list.	8. Ensure community character and social equity are addressed in mitigation activities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2019 - 06/2020	High	1	0	1	0	1	0	1	0	1	0	0	0	0	0	6	
Andover	And3	Educate the public on new warning notification system, sheltering facilities and other emergency preparedness measures.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2019 - 06/2021	High	1	0	1	0	1	0	1	0	1	0	0	0	0	0	6	
Andover	And4	Complete replacement of Bunker Hill Road Bridge	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Grants	07/2019 - 06/2020	High	1	0	1	0	1	0	1	0	1	1	1	1	1	0	6	
Andover	And5	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Andover	And6	Develop a formalized procedure for tracking hazard events in Town and passing that information onto new Town Staff. Collecting and tracking information on event costs & losses should be part of that procedure.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	0	0	1	0	1	0	1	0	1	0	1	0	0	0	7	
Andover	And7	Pursue agreement with landowner of the small private pond that is a good location for a dry hydrant to install a dry hydrant at that site.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Fire Department	\$0 - \$10,000	Town Operating Budget / CT DEEP	07/2020 - 06/2021	Medium	0	1	1	0	1	0	1	0	1	0	1	0	1	0	7	
Andover	And8	On an at-least annual basis, check on the status of maintenance of the Andover Lake Dam and determine whether Town intervention is required.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2023	Medium	0	0	1	0	0	1	0	0	0	0	1	0	1	0	4	
Andover	And9	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6	
Andover	And10	Install emergency generator at the elementary school to improve its sheltering capabilities.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2019 - 06/2020	Medium	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6	
Andover	And11	Review the LID Manual developed by the Northwest Hills Council of Governments and determine whether LID can be incorporated locally to increase rural resiliency.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget	07/2021 - 06/2022	Medium	1	0	1	0	1	0	0	0	1	0	1	1	1	0	6	
Andover	And12	Perform a study of the Hop River channel and watershed to identify drainage problems and erosion risk zones.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Public Works	\$25,000 - \$50,000	CT DEEP / DEMHS	07/2021 - 06/2022	Medium	1	0	0	0	1	0	0	0	1	0	1	0	1	0	6	

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

Technical Economic Factors are double-weighted.

										Weighted STAPLEE Criteria														Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	
Andover	And13	Initiate replacement of Long Hill Road Bridge. Consider impacts of that project on Hop River flooding and road access.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Grants	07/2020 - 06/2022	Medium	1	0	1	0	1	0	1	0	1	1	1	1	1	0	6
Andover	And14	Establish a call-down list of private tree service companies that can be recruited to conduct debris removal and emergency tree maintenance following storms.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	1	1	1	0	0	2
Andover	And15	Investigate the CROG service sharing initiative, especially surrounding tree and other debris removal equipment.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2023	Low	1	0	1	0	1	1	0	1	0	0	1	0	1	0	5
Andover	And16	Implement an education and outreach initiative related to the pipeline that passes through town and public safety.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget / Grants / DEMHS	01/2022 - 12/2023	Low	1	0	1	0	1	1	0	1	0	0	1	0	1	0	5
Andover	And17	Install emergency generator at the Town Hall Addition to make progress on converting that space into a backup shelter.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2021	Low	1	0	1	0	1	1	1	1	0	0	1	0	0	0	5
Andover	And18	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4
Andover	And19	Acquire a bucket truck to use for tree maintenance and removal.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	More than \$100,000	Town Operating Budget / Grants	01/2023 - 12/2023	Low	0	0	1	0	0	1	0	1	0	0	1	1	1	0	1
Avon	Avo1	Develop written procedure for relocating personnel to areas at risk of isolation during floods.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	1	1	0	0	0	0	0	0	0	4
Avon	Avo2	Develop prioritized list of critical facility generator needs to guide future purchases.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6
Avon	Avo3	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	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8
Avon	Avo4	Install a satellite television system at the new EOC, once it is completed, to allow for monitoring of information when power and cable are out.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2019 - 06/2020	High	0	0	1	0	1	0	1	0	1	0	0	0	0	0	5
Avon	Avo5	Determine level of communication needed for all personnel and provide wireless communication in accordance with findings.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2019 - 06/2021	High	0	0	1	0	1	0	1	0	1	0	0	0	0	0	5
Avon	Avo6	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Town Operating Budget / Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

Technical Economic Factors are double-weighted.

										Weighted STAPLEE Criteria															Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Avon	Avo7	Coordinate with NEMO and CROCG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Avon	Avo8	Work with the Connecticut Water Company to designate new areas for fire protection.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Fire Department	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	1	1	1	0	0	0	0	1	0	1	0	4	
Avon	Avo9	Work with MDC to determine whether transmission routes can be mapped and used for emergency planning and response in Avon.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	0	0	1	1	1	1	0	0	1	0	1	0	0	0	3	
Avon	Avo10	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6	
Avon	Avo11	Link properties in areas of flood risk to the Reverse 911 database to enable targeted messages.	6. Improve public outreach, education, and warning systems	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	01/2020 - 12/2022	Medium	1	1	1	0	1	0	0	0	1	0	0	0	0	0	4	
Avon	Avo12	Develop a flood mitigation plan for Building 1 at the Town Complex using FEMA historic structure mitigation guidelines and public participation; this process can be used as a case-study for preservation-sensitive flood mitigation of historic properties.	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning	\$25,000 - \$50,000	Town Operating Budget / DEMHS	07/2021 - 06/2023	Medium	1	0	1	0	1	0	1	0	1	0	0	0	0	0	6	
Avon	Avo13	Complete the replacement and upsizing of the Farmington River bridge at Old Farms Road	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$50,000 - \$100,000	Town Operating Budget / Grants	01/2019 - 12/2019	Medium	1	0	1	0	1	0	1	0	1	1	1	1	1	0	6	
Avon	Avo14	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2	
Avon	Avo15	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4	
Avon	Avo16	Complete a feasibility study to determine the effectiveness of implementing a microgrid at the Avon Town Offices campus.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	\$25,000 - \$50,000	Grants	07/2023 - 06/2024	Low	1	0	0	0	1	1	0	1	1	0	1	0	1	0	4	
Berlin	Ber1	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	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8	
Berlin	Ber2	Revise the subdivision/zoning code to offer incentives for low-impact development.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	1	1	1	0	1	0	1	0	1	0	0	0	1	0	6	

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria															Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CRCOG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Berlin	Ber3	Acquire generators for shelters and other critical facilities. The need for three generators has been identified to ensure that backup power is available for critical town functions. These include the purchase of an additional portable for the Town for general use, an additional portable generator for the Water Control Department to ensure that sewer pumping stations can be maintained during outages, and a new generator for the senior center.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	01/2019 - 12/2020	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0		
Berlin	Ber4	Complete the Dam Breakage Emergency Plan.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Grants	07/2020 - 06/2021	High	0	0	1	0	1	0	1	0	1	0	0	0	0	0		
Berlin	Ber5	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Town Operating Budget / Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
Berlin	Ber6	Update the local floodplain management ordinance to meet current State guidelines.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	1	1	0	1	0	1	0	1	0	1	0	0	0		
Berlin	Ber7	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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
Berlin	Ber8	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0		
Berlin	Ber9	Construct duplicate facilities for the Physical Services Complex at the golf course and Sage Park.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Town Operating Budget / Grants	07/2022 - 06/2024	Medium	1	0	1	0	0	0	1	0	1	0	1	1	0	0		
Berlin	Ber10	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0		
Berlin	Ber11	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	Town Operating Budget / CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0		
Berlin	Ber12	Explore rerouting of culverts upstream of Becker Avenue to protect Becker Avenue property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	1	0	1	1	0	0		
Berlin	Ber13	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0		

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Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Weighted STAPLEE Criteria															Total STAPLEE Score
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Berlin	Ber14	Relocate gasoline lines feeding the Physical Services Complex to protect from flooding.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Property Protection	Public Works	\$50,000 - \$100,000	Grants	07/2023 - 06/2024	Low	0	0	1	0	1	1	0	1	0	0	1	0	1	0	4	
Bloomfield	Blo1	Provide information about the risks of living near the Flood Control System to individuals considering purchasing property in that area.	6. Improve public outreach, education, and warning systems	Education & Awareness	Public Works	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	1	1	0	1	1	1	0	0	0	6	
Bloomfield	Blo2	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	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8	
Bloomfield	Blo3	Review maps of flood risk associated with failure of the Hartford Flood Control System and determine needs for additional education or action.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	0	0	1	0	1	0	1	0	1	0	1	0	0	0	7	
Bloomfield	Blo4	Assess vulnerable population disaster preparedness and emergency assistance protocol to identify opportunities for improvement. Conduct public outreach and a cost-benefit analysis to determine a preferred flood mitigation measure (from those determined through previous studies) to implement at the library.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	1	0	1	0	1	0	1	0	1	0	0	0	0	0	6	
Bloomfield	Blo5	Conduct public outreach and a cost-benefit analysis to determine a preferred flood mitigation measure (from those determined through previous studies) to implement at the library.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2019 - 06/2021	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8	
Bloomfield	Blo6	Replace Police Department emergency generator.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2019 - 06/2021	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6	
Bloomfield	Blo7	Upgrade or supplement Public Works emergency generator to expand its backup power capacity.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2019 - 06/2021	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6	
Bloomfield	Blo8	Improve/replace existing Town communication system in favor of one that is more reliable and has better coverage during storm events. Implement 2020-2021. 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.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$50,000 - \$100,000	Grants / DEMHS	01/2020 - 12/2021	High	1	0	1	0	1	0	1	0	1	0	1	0	0	0	8	
Bloomfield	Blo9	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Bloomfield	Blo10	Develop a simple guide for property owners laying out whether or not they should remove debris from their streams, and providing contacts for contractors that can assist them.	6. Improve public outreach, education, and warning systems	Education & Awareness	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	1	0	0	1	0	0	0	0	0	1	0	3	
Bloomfield	Blo11	Conduct public outreach and education campaign to residents living near the Flood Control System about the risks of living in that area.	6. Improve public outreach, education, and warning systems	Education & Awareness	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Bloomfield	Blo12	Coordinate with NEMO and CROCG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	

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Bloomfield	Blo13	Identify funding sources and personnel to complete an urban tree canopy inventory and study.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	1	0	1	0	1	0	0	0	1	0	1	0	1	0	8
Bloomfield	Blo14	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6
Bloomfield	Blo15	Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Property Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	0	0	1	0	0	1	0	0	0	0	1	0	0	0	3
Bloomfield	Blo16	Complete a public campaign to educate property owners about the importance of maintaining and clearing debris from stream channels. The campaign should result in permanently available educational materials, such as through links on the Town website. The campaign should consider the importance of large woody debris in streams to the health of the river habitat.	6. Improve public outreach, education, and warning systems	Education & Awareness	Public Works	\$10,000 - \$25,000	Town Operating Budget	01/2020 - 12/2022	Medium	1	0	1	1	0	0	1	0	0	0	0	0	1	0	3
Bloomfield	Blo17	Conduct annual outreach campaign to educate residents on signing up for emergency alerts, building and maintaining disaster plans and kits, and improving their disaster readiness.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2024	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7
Bloomfield	Blo18	Perform a town-wide drainage study to identify and prioritize stormwater drainage system improvement and replacement needs.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	1	0	0	0	1	0	0	0	1	0	1	0	1	0	6
Bloomfield	Blo19	Increase budget for tree maintenance and urban forestry.	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Public Works	\$50,000 - \$100,000	Town Operating Budget / Grants	01/2023 - 12/2024	Medium	1	0	1	0	1	0	0	0	1	0	0	0	1	0	6
Bloomfield	Blo20	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2
Bloomfield	Blo21	Develop an ordinance related to maintenance of and removal of debris from stream channels on private property. The ordinance should consider the importance of large woody debris in streams to the health of the river habitat.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	0	1	1	1	1	1	0	1	1	0	1	0	1	0	2
Bloomfield	Blo22	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4

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Bloomfield	Blo23	Identify site for debris storage. Purchase a bucket truck for tree trimming and maintenance.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	More than \$100,000	Town Operating Budget / Grants	01/2024 - 12/2024	Low	0	0	1	0	0	1	0	0	0	0	1	1	1	0		
Bolton	Bol1	Consider and document the labor resource needs and benefits of participation in the Sustainable CT program.	4. Regionally increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0		
Bolton	Bol2	Assess vulnerable population disaster preparedness and emergency assistance protocol to identify opportunities for improvement.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	1	0	1	0	1	0	1	0	0	0	1	0	0	0		
Bolton	Bol3	Develop informal arrangements with private contractors for emergency tree/debris removal and evaluate these arrangements on an annual basis.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2023	High	0	1	1	1	1	0	1	0	1	1	1	0	0	0		
Bolton	Bol4	Adopt a regular maintenance schedule for keeping drainageways and drainage structures clear, especially following flood events.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2021	High	0	0	1	0	1	1	1	0	1	0	1	0	0	0		
Bolton	Bol5	Monitor and maintain drainage and flood control systems through the completion of annual inspections.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works, Administration	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2023	High	1	0	1	0	1	1	1	0	1	0	1	0	0	0		
Bolton	Bol6	Update Everbridge system participant list and perform tests on an annual basis.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2024	High	1	0	1	0	1	0	1	0	0	0	1	0	0	0		
Bolton	Bol7	Develop and implement a tree trimming program for Bolton Notch to reduce fuel loads for wildfires, in addition to building a fire break for this area.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention, Natural Resource Protection	Emergency Management	\$25,000 - \$50,000	Town Operating Budget	07/2019 - 06/2023	High	0	0	1	0	1	0	1	0	1	0	0	0	1	0		
Bolton	Bol8	Implement the recommended improvements as identified in the plan to power residential grinder pumps during prolonged power outages.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Preparedness & Emergency Response	Emergency Management, Administration, and in coordination with the Bolton Lakes Regional Water Pollution Control Authority	\$50,000 - \$100,000	Grants	07/2019 - 06/2022	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0		
Bolton	Bol9	Develop and implement, in conjunction with DEEP and DOT, a solution for the Notch Pond Dam issues and address silting of Notch Pond to reduce flood risks and provide a possible firefighting water supply.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	CT DOT, CT DEEP, Public Works, Administration	\$25,000 - \$500,000	Grants / CT DEEP / CT DOT	07/2019 - 06/2021	High	1	0	1	1	1	0	1	0	1	0	1	1	1	0		
Bolton	Bol10	Make information about available assistance for property acquisition or relocation available at Town Hall and on the Town website	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	1	1	1	0	1	0	1	1	0	0	1	0	0	0		
Bolton	Bol11	Develop written protocols for optimal communications with new gas company.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Preparedness & Emergency Response	Public Works, Public Safety, Emergency Management, Administration	\$0 - \$10,000	Town Operating Budget	01/2019 - 06/2019	Medium	1	0	1	0	1	0	1	0	0	0	0	0	0	0		
Bolton	Bol12	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		

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Bolton	Bol13	Conduct a review of the Everbridge system and conduct a test to ensure its effectiveness.	6. Improve public outreach, education, and warning systems	Preparedness & Emergency Response	Public Safety, Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	0	0		
Bolton	Bol14	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works / Administration	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
Bolton	Bol15	Pursue agreement with landowner of the small private pond that is a good location for a dry hydrant to install a dry hydrant at that site.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Fire Department / Administration	\$0 - \$10,000	Town Operating Budget / CT DEEP	07/2020 - 06/2021	Medium	1	1	1	0	1	0	0	0	1	1	0	0	1	0		
Bolton	Bol16	Work with the local electric utility (Eversource) to identify opportunities for improving the resilience of the power grid through tree trimming, hardening, burial, and response training	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Preparedness & Emergency Response	Public Works	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	1	0	1	0	1	1	1	0	1	0	0	0	1	0		
Bolton	Bol17	Educate private property owners on how to properly maintain culverts, spillways, and other drainageways to prevent obstructions, especially as related to beaver activity.	6. Improve public outreach, education, and warning systems	Education & Awareness	Public Works, in coordination with DEEP and property owners	\$0 - \$10,000	Private Funding	07/2019 - 06/2022	Medium	1	0	1	1	1	0	1	0	0	0	0	0	1	0		
Bolton	Bol18	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0		
Bolton	Bol19	Conduct public outreach on the safe operation of generators, including posting information to the town's website, and enhance permit enforcement for the correct installation of generators.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management, Building Official	\$10,000 - \$25,000	Town Operating Budget	01/2019 - 06/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
Bolton	Bol20	Develop a beaver monitoring and management program to address damming issues, specifically at Notch Pond Dam and Sperry Pond Dam.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works, in coordination with DEEP	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2019 - 06/2022	Medium	0	0	1	0	1	1	0	0	1	0	1	0	1	1		
Bolton	Bol21	Review the Low Impact Development (LID) Regulations periodically and update as needed. Utilize the LID Manual developed by the Northwest Hills Council of Governments.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget	07/2021 - 06/2022	Medium	1	1	1	0	0	0	1	1	1	1	1	0	1	0		
Bolton	Bol22	Study Lyman Road culvert associated with Blackledge River and recommend improvements.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants	07/2019 - 06/2020	Medium	1	0	0	0	1	0	0	0	1	0	1	0	1	0		
Bolton	Bol23	Conduct a study of the Hop River downstream of the Johnson Road culvert/dam to determine the feasibility and effectiveness of upsizing culverts to prevent flooding of private lands.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$25,000 - \$50,000	Private Funding	07/2019 - 06/2020	Medium	1	0	0	0	1	0	0	0	1	0	1	0	1	0		
Bolton	Bol24	Coordinate with CT SHPO to conduct additional f	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with DEEP	\$25,000 - \$50,000	SHPO	07/2019 - 06/2021	Medium	1	0	1	0	0	0	1	0	0	0	1	0	0	0		
Bolton	Bol25	Conduct a wildfire vulnerability and needs assessment to guide mitigation actions in the northwest corner of Town, near Bolton Notch and Freia Park	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Fire Department	\$25,000 - \$50,000	Town Operating Budget / Grants	07/2021 - 06/2023	Medium	0	0	1	0	1	0	0	0	1	0	1	0	1	0		

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Community	Action or Strategy Number	Mitigation Actions and Strategies for CRCOG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Bolton	Bol26	Develop a scope of work document to implement any actions recommended by the Hop River/Johnson Road culvert/dam flood mitigation study.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works, Administration, Property Owners	\$100,000 - \$250,000	Property Owners	07/2020 - 06/2021	Medium	1	0	1	0	1	0	0	0	1	0	1	0	1	0	8	
Bolton	Bol27	Implement improvements recommended in above Lyman Road study. Because this is expected to be a long term, multi-year project, the action to be taken is to develop a scope of work for implementing the recommended improvements.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works, Administration	\$500,000 - \$600,000	Town Operating Budget / Grants	07/2020 - 06/2021	Medium	1	0	1	0	0	0	1	0	1	0	1	1	0	0	5	
Bolton	Bol28	Conduct an evaluation to identify specific opportunities to update and/or underground transmission lines.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works, Planning, Administration	More than \$100,000	Town Operating Budget / Grants	07/2020 - 06/2021	Low	1	0	0	0	1	1	0	1	1	0	1	0	1	0	4	
Canton	Can1	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	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8	
Canton	Can2	Conduct outreach and education campaign to residents and property owners downstream of large dams (Goodwin, Nepaug, and Barkhamsted) about risks and emergency alert systems. Work with MDC if possible.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	01/2019 - 12/2020	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8	
Canton	Can3	Complete a study of existing municipal communication capabilities to determine opportunities for building resilience into the system.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / Grants / DEMHS	07/2019 - 06/2021	High	1	0	0	0	1	0	1	0	1	0	1	0	0	0	6	
Canton	Can4	Acquire updated radio communication equipment for municipal departments to use for emergency response.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Town Operating Budget / DEMHS	01/2020 - 12/2020	High	1	0	1	0	1	0	1	0	1	0	1	0	0	0	8	
Canton	Can5	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Canton	Can6	Receive and file current dam failure analysis and EAP for all upstream MDC reservoirs.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6	
Canton	Can7	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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Canton	Can8	Approach homeowners in Dowd's Corner, in particular on Old Canton Road, to offer assistance if they are interested in property acquisition.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	1	1	1	0	1	1	0	1	1	0	1	0	1	0	5	
Canton	Can9	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6	

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Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria														Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	
Canton	Can10	Conduct annual exercise with MDC that specifically includes the Nepaug and Barkhamsted Reservoir dams.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	0	1	0	0	0	0	1	0	0	0	
Canton	Can11	Conduct an assessment of the Farmington River and Nepaug River to identify possible flood mitigation activities in this area.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$25,000 - \$50,000	Grants / CT DEEP / DEMHS	07/2021 - 06/2023	Medium	0	0	1	1	0	0	0	0	1	0	1	0	1	0	
Canton	Can12	Complete relocation of Town Garage outside of flood zone.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Planning	More than \$100,000	Town Operating Budget / Grants / DEMHS	07/2022 - 06/2024	Medium	1	0	1	0	0	0	1	0	1	0	1	1	0	0	
Canton	Can13	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	
Canton	Can14	Coordinate with CT SHPO to conduct historic rest	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	
Canton	Can15	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	Town Operating Budget / CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0	
Columbia	Col1	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	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	
Columbia	Col2	Identify location for secondary access to Island Woods Subdivision and prepare and file map of proposed street in the office of the town clerk in accordance with CT General Statute Section 8-29.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	0	0	1	0	1	0	1	0	1	0	1	0	0	0	
Columbia	Col3	Assess vulnerable population disaster preparedness and emergency assistance protocol to identify opportunities for improvement.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	1	0	1	0	1	0	1	0	0	0	1	0	0	0	
Columbia	Col4	Install bypass culverts and perform culvert repairs and replacements on the Hop River, as described in the permits granted by the USACE.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2023	High	1	0	1	0	1	0	1	0	1	0	1	1	0	0	
Columbia	Col5	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	
Columbia	Col6	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	
Columbia	Col7	Review the LID Manual developed by the Northwest Hills Council of Governments and determine whether LID can be incorporated locally to increase rural resiliency.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget	07/2021 - 06/2022	Medium	1	0	1	0	0	0	0	0	0	0	1	0	1	0	
Columbia	Col8	Progress through planning phase for drainage system upgrade at Parker Bridge Road. Road should be elevated with cross culverts to mitigate against flooding.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$25,000 - \$50,000	Grants	07/2021 - 06/2023	Medium	1	0	1	0	1	0	1	0	1	1	1	1	1	0	

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Columbia	Col9	Replace culvert pipe and perform basin retrofit, if necessary, at Macht Road.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$50,000 - \$100,000	Grants	07/2023 - 06/2024	Medium	1	0	1	0	0	0	1	0	1	0	1	1	0	0	5	
Columbia	Col10	Complete drainage upgrade on Hennequin Road: upgrade/retrofit all culverts on the west side of Hennequin Road, from Recreation Park to Lake Road.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2024	Medium	1	0	1	0	0	0	1	0	1	0	1	1	0	0	5	
Columbia	Col11	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2	
Columbia	Col12	Increase the annual-budget for preventative tree maintenance.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Natural Resources Protection	Public Works	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	1	0	1	0	1	1	1	1	0	0	0	0	0	0	3	
Columbia	Col13	Distribute informational materials regarding emergency preparedness though social media and the Town magazine.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	1	0	1	0	1	1	1	1	1	0	0	0	0	0	4	
Columbia	Col14	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4	
Coventry	Cov1	Work with FEMA to map the Mill Brook floodplain in Coventry Village.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Planning	\$0 - \$10,000	CT DEEP / DEMHS / FEMA	07/2019 - 06/2020	High	0	1	1	1	1	1	1	1	1	1	1	0	1	0	2	
Coventry	Cov2	Develop a dry hydrant maintenance plan to guide hydrant cleaning, dredging, and replacement.	7. Improve the emergency response capabilities of the region and its communities	Prevention	Fire Department	\$10,000 - \$25,000	CT DEEP	07/2019 - 06/2021	High	0	0	1	0	1	1	1	0	1	0	1	0	0	0	6	
Coventry	Cov3	Develop a process, to be built into DPW operations, to identify, evaluate, and address bridges with scour problems.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$10,000 - \$25,000	Grants	07/2019 - 06/2021	High	0	0	1	0	1	0	1	0	1	0	1	0	1	0	8	
Coventry	Cov4	Complete an inventory and vulnerability analysis of trees along municipal rights-of-way (ROW), with a particular focus on tree death due to invasive pests and blight.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2021	High	0	0	1	0	1	0	1	0	1	0	0	0	1	0	6	
Coventry	Cov5	Develop a prioritized list of needed road improvements around the lake area where flash flooding is an issue.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants	07/2020 - 06/2021	High	0	0	1	0	1	0	1	0	1	0	1	0	1	0	8	
Coventry	Cov6	Complete upgrade of town-wide communications system.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$50,000 - \$100,000	Town Operating Budget	07/2021 - 06/2022	High	1	0	1	0	1	0	1	0	1	0	1	0	0	0	8	
Coventry	Cov7	Develop a micro-grid for municipal facilities around, and including, the Town Hall. Ideally the microgrid will service the high school (shelter), middle school, fire department, town hall, fueling station, and elderly housing complex	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$50,000 - \$100,000	Grants / CT DEEP PURA	07/2021 - 06/2022	High	1	0	1	0	1	0	1	0	1	0	1	1	1	0	7	

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Coventry	Cov8	Complete the stormwater collection system improvements along Mill Stream in Coventry Village.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$50,000 - \$100,000	Grants	07/2021 - 06/2022	High	1	0	1	0	1	0	1	0	1	0	1	1	0	0	6	
Coventry	Cov9	Assess the needs, and develop a cost-estimate, for retrofitting the new High School gym to ensure it is up to seismic and wind code and can be used as an emergency shelter.	7. Improve the emergency response capabilities of the region and its communities	Structural Projects	Public Works	More than \$100,000	Grants / Bonding	07/2022 - 06/2023	High	0	0	1	0	1	0	1	0	1	0	1	0	1	0	8	
Coventry	Cov10	Construct a water tower or cistern to serve Coventry Village to improve firefighting capacity in that area.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	More than \$100,000	Grants	07/2022 - 06/2023	High	0	0	1	0	1	0	1	0	1	0	1	0	1	0	8	
Coventry	Cov11	Replace culvert at Jones Crossing over Clark Brook, which drains to the Willimantic River.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants / Bonding	07/2022 - 06/2023	High	1	0	1	0	1	0	1	0	1	0	1	1	0	0	6	
Coventry	Cov12	Complete improvements to the DeCew Dam park property, considering dam safety.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2023	High	1	0	1	0	1	0	1	0	1	0	1	1	0	0	6	
Coventry	Cov13	Increase funding to identify and address bridge scour problems.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	More than \$100,000	Town Operating Budget / Grants	07/2022 - 06/2023	High	0	0	1	0	1	0	1	0	0	0	1	1	1	0	5	
Coventry	Cov14	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Coventry	Cov15	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6	
Coventry	Cov16	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Coventry	Cov17	Review the LID Manual developed by the Northwest Hills Council of Governments and determine whether LID can be incorporated locally to increase rural resiliency.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget	07/2021 - 06/2022	Medium	1	0	1	0	0	0	0	0	0	0	1	0	1	0	6	
Coventry	Cov18	Conduct a wildfire vulnerability and needs assessment to guide construction of additional dry hydrants and/or cisterns.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Fire Department	\$25,000 - \$50,000	Town Operating Budget / Grants / CT DEEP	07/2021 - 06/2023	Medium	0	0	1	0	1	0	0	0	1	0	1	0	1	0	7	
Coventry	Cov19	Develop a plan for implementing lightning protection for the town-wide communication system.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Town Operating Budget / Grants	07/2021 - 06/2023	Medium	1	0	0	0	1	0	0	0	1	0	1	0	0	0	5	

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Coventry	Cov20	Remove 100 to 150 hazardous trees, as identified in the hazardous tree survey completed prior to the previous HMP, over the next five years.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	\$25,000 - \$50,000	Town Operating Budget	01/2021 - 12/2023	Medium	0	1	1	0	1	0	0	1	1	1	1	0	0	0	
Coventry	Cov21	Increase funding for Right of Way tree removal.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants	07/2021 - 06/2023	Medium	1	0	1	0	1	0	1	0	0	0	0	0	0	0	
Coventry	Cov22	Develop an Open Space Plan to guide acquisition and preservation; ensure hazard mitigation is considered in plan development.	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$50,000 - \$100,000	Town Operating Budget / Grants	07/2023 - 06/2024	Medium	1	0	1	0	1	0	1	0	1	0	1	0	1	0	
Coventry	Cov23	Apply for State and Federal funding for drainage improvements to the intersection of South Street, Swamp Road, and Swamp Road Extension.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Town Operating Budget / Grants	07/2022 - 06/2024	Medium	1	0	1	1	0	0	1	0	1	0	1	0	0	0	
Coventry	Cov24	Upgrade all town plows to have magnesium chloride tanks.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	More than \$100,000	Grants	07/2022 - 06/2024	Medium	0	0	1	0	1	0	0	0	0	0	1	0	0	1	
Coventry	Cov25	Acquire a forestry truck with a water tank to assist with fighting fires in areas remote from water sources.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Fire Department	More than \$100,000	Town Operating Budget / Grants	01/2022 - 12/2024	Medium	0	0	1	0	0	0	0	0	0	0	1	1	1	0	
Coventry	Cov26	Acquire all-terrain firefighting trucks and open accessways to fight fires in forested areas.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Fire Department	More than \$100,000	Grants	07/2022 - 06/2024	Medium	0	0	1	0	0	0	0	0	0	0	1	1	1	0	
Coventry	Cov27	Determine whether it is more preferable or cost effective to replace the culvert on Pucker Street that is contributing to flooding of hay and cornfields or to acquire the at-risk land.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	0	0	1	0	1	1	0	1	1	0	1	0	0	0	
Coventry	Cov28	Coordinate with CT SHPO to conduct outreach to	8. Ensure community character and social equity are addressed in mitigation activities	Education & Awareness	Planning, in coordination with SHPO	\$0 - \$10,000	SHPO	01/2021 - 12/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	
Coventry	Cov29	Make progress with the hazard mitigation goals associated with SustainableCT certified actions.	8. Ensure community character and social equity are addressed in mitigation activities	Prevention	Planning	\$0 - \$10,000	Town Operating Budget / CT DEEP	07/2021 - 06/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	1	0	
Coventry	Cov30	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	
Coventry	Cov31	Complete the Regional Sheltering Plan.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Grants	07/2023 - 06/2024	Low	1	0	0	0	1	1	1	0	0	0	0	0	0	0	
Coventry	Cov32	Acquire the Schmidt and Streude-Decew parcels, which are flood-prone.	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Property Protection	Planning	More than \$100,000	Town Operating Budget / CT DEEP / DEMHS	07/2023 - 06/2024	Low	1	0	1	0	0	1	0	1	1	1	0	0	1	0	
East Granby	EG1	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	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

Technical Economic Factors are double-weighted.

Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Weighted STAPLEE Criteria														Total STAPLEE Score
										Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	
East Granby	EG2	Install a generator at the High School to make progress on creating a primary shelter there.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2019 - 06/2020	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6
East Granby	EG3	Conduct a stormwater management study to determine local best management practices to reduce runoff.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Planning	\$25,000 - \$50,000	Grants	07/2019 - 06/2021	High	1	0	0	0	1	0	1	0	1	0	1	0	1	0	7
East Granby	EG4	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	0	0	1	0	0	0	0	0	1	0	1	0	5
East Granby	EG5	Coordinate with NEMO and CROCG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7
East Granby	EG6	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6
East Granby	EG7	Install a dry hydrant or cistern at Hatchett Hill.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Fire Department	\$10,000 - \$25,000	CT DEEP	07/2020 - 06/2021	Medium	0	0	1	0	0	0	0	0	1	0	1	0	1	0	6
East Granby	EG8	Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Property Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	0	0	1	0	1	1	0	0	0	0	1	0	0	0	4
East Granby	EG9	Install a generator at the Congregational Church to make progress on creating a backup shelter there.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6
East Granby	EG10	Construct an access road across the Farmington River at Tongsis/Spoonville to provide an additional access/egress route.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Planning	More than \$100,000	Grants	07/2021 - 06/2023	Medium	0	0	1	0	0	0	0	0	1	1	1	1	0	0	2
East Granby	EG11	Construct a secondary access route to Cowles Park.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Planning	More than \$100,000	Grants	01/2022 - 12/2023	Medium	0	0	1	0	0	0	0	0	1	1	1	1	0	0	2
East Granby	EG12	Educate land use officials on low impact development techniques. Consider contacting UConn Extension for assistance.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2022	Low	1	0	1	1	1	1	1	0	0	0	0	1	0	2	
East Granby	EG13	Develop a formal process of tree evaluation and overhead wires. Consider collaborating with Eversource.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2023	Low	1	0	1	0	1	1	1	1	0	0	0	1	0	5	
East Granby	EG14	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

Technical Economic Factors are double-weighted.

										Weighted STAPLEE Criteria															Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
East Granby	EG15	Develop an open space plan, with special attention paid to land along rivers and streams not only because of flooding concerns, but also for recreation and wildlife management interests.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$25,000 - \$50,000	Grants / CT DEEP	07/2021 - 06/2022	Low	1	0	1	0	1	1	0	1	1	0	0	0	1	0	4	
East Granby	EG16	Acquire equipment necessary to maintain and remove large trees.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	\$50,000 - \$100,000	Grants	07/2023 - 12/2023	Low	0	0	1	0	1	1	0	1	1	0	1	0	0	0	4	
East Hartford	EH1	Pursue accreditation of the Senior Center as an emergency shelter.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	0	0	1	0	1	0	0	0	0	0	0	0	3	
East Hartford	EH2	Consider and document the labor resource needs and benefits of participation in the Sustainable CT program.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8	
East Hartford	EH3	Complete a needs-assessment study to determine what would be needed in a new EOC facility, and to preliminarily identify existing facilities that could house that use.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Town Operating Budget / Grants / DEMHS	07/2020 - 06/2021	High	1	0	0	0	1	0	1	0	1	0	1	0	1	0	7	
East Hartford	EH4	In conjunction with the East Hartford Board of Education Facilities Department acquire an emergency generator for the Middle School as a step towards making it a sustainable emergency shelter.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	More than \$100,000	DEMHS / Town Board of Education Budget	01/2021 - 12/2023	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6	
East Hartford	EH5	In conjunction with the East Hartford Board of Education Facilities Department acquire a true back up generator or improve the capabilities of the current cogeneration system at the East Hartford High School to improve its capabilities as a regional shelter.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	More than \$100,000	DEMHS / Town Board of Education Budget	01/2022 - 12/2023	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6	
East Hartford	EH6	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
East Hartford	EH7	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
East Hartford	EH8	Review maps of flood risk associated with failure of the Flood Control System and determine needs for additional education or action.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	0	0	1	0	0	0	0	0	1	0	1	0	0	0	5	
East Hartford	EH9	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6	

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria															Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
East Hartford	EH10	Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Property Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	0	0	1	0	1	1	0	0	0	0	1	0	0	0	4	
East Hartford	EH11	Have the Town's Community Emergency Response Team run public education and training forums on personal emergency planning at least once annually. Initiate a vulnerability and adaptation study of critical facilities located within the flood zone protected by the Flood Control System; the purpose of this study would be to determine the need for and feasibility of floodproofing or relocating critical facilities that would be affected by flooding if the Flood Control System failed.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2019 - 06/2024	Medium	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7	
East Hartford	EH12		3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Public Works	\$50,000 - \$100,000	Town Operating Budget / Grants	07/2023 - 06/2024	Medium	1	0	0	0	1	0	0	0	1	0	1	0	1	0	6	
East Hartford	EH13	Complete a drainage study of Burnham Brook.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Public Works	\$50,000 - \$100,000	Town Operating Budget / Grants	07/2023 - 06/2024	Medium	1	0	0	0	1	0	0	0	1	0	1	0	1	0	6	
East Hartford	EH14	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2	
East Hartford	EH15	Develop a list of specific upcoming actions as part of the multi-year Flood Control System modification and reconstruction project to and include in the next HMP update.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	0	0	1	0	1	1	0	1	0	0	1	0	0	0	3	
East Hartford	EH16	Develop a list individual drainage improvement projects from the CIP to include in the next HMP update.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	0	0	1	0	0	1	0	1	0	0	1	0	0	0	2	
East Hartford	EH17	Monitor impacts on the Flood Control System and other flood control infrastructure of any CSO separation work in the Region.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Public Works	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	0	0	1	0	0	1	0	1	1	0	0	0	1	0	2	
East Hartford	EH18	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0	3	
East Hartford	EH19	Coordinate with CT SHPO to conduct historic res	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4	
East Hartford	EH20	Replace the McAuliffe Park culvert, repair the Porter/Main Street culvert, repair the Arbutus Street outfall.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2023 - 06/2024	Low	1	0	1	0	0	1	1	1	1	0	1	1	0	0	3	
East Windsor	EW1	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	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8	
East Windsor	EW2	Assign maintenance of special needs population list to specific department to ensure annual updates	8. Ensure community character and social equity are addressed in mitigation activities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	High	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7	

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria															Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCOG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
East Windsor	EW3	Hire an electrical engineer to wire the High School for a permanent generator.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants / DEMHS	01/2020 - 12/2020	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0		
East Windsor	EW4	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
East Windsor	EW5	Coordinate with NEMO and CROCOG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
East Windsor	EW6	Increase use of social media to communicate with the community on planning for emergencies.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	1	0	1	0	1	0	1	0	1	0	0	0	0	0		
East Windsor	EW7	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0		
East Windsor	EW8	Improve ability of emergency responders to prepare and respond to wind events through training drills.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	0	0	1	0	1	0	1	0	1	0	1	0	0	0		
East Windsor	EW9	Conduct an outreach program to recruit volunteers to staff emergency shelters.	7. Improve the emergency response capabilities of the region and its communities	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	01/2020 - 12/2022	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
East Windsor	EW10	Replace the emergency generator at the WPCA	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	1	0	1	0	1	1	1	0	0	0	1	0	0	0		
East Windsor	EW11	Develop an Open Space Plan to guide acquisition, preservation, and efforts to incentivize redevelopment and infill over development of new land. Consider hazard mitigation is in plan development.	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$50,000 - \$100,000	Grants	07/2023 - 06/2024	Medium	1	0	1	0	1	0	0	0	0	0	0	0	1	0		
East Windsor	EW12	Implement the recommendations of the study of the dam on Main Street near Depot Street intersection.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$50,000 - \$100,000	Grants	07/2023 - 06/2024	Medium	1	0	1	0	0	0	1	0	1	0	1	1	0	0		
East Windsor	EW13	Implement recommendations of NRCS, including installation of a detention basin in Rockville Road/East Road area to reduce road closures and washouts.	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Structural Projects	Public Works	\$50,000 - \$100,000	Grants	07/2023 - 06/2024	Medium	1	0	1	0	0	0	1	0	1	0	1	1	0	0		
East Windsor	EW14	Increase the public works staff and equipment availability.	7. Improve the emergency response capabilities of the region and its communities	Prevention	Public Works	More than \$100,000	Town Operating Budget	01/2022 - 12/2024	Medium	0	0	1	0	1	1	1	0	1	0	1	1	0	0		
East Windsor	EW15	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0		
East Windsor	EW16	Install a hookup at the Middle School to allow a portable emergency generator to be connected.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2021 - 06/2023	Low	1	0	1	0	1	1	1	1	0	0	1	0	0	0		

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria																Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CRCOG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
East Windsor	EW17	Conduct a study to identify appropriate flood control measures and monitoring regimes for the WPCA and surrounding area, including Blue Ditch.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Structural Projects	Public Works	\$25,000 - \$50,000	Grants	07/2023 - 06/2024	Low	1	0	0	0	1	1	0	1	1	0	1	0	1	0	4		
East Windsor	EW18	Work with property owners, contractors and the DEEP to regularly remove beaver dams causing flooding on East Road and elsewhere.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants / CT DEEP	01/2023 - 12/2024	Low	1	0	1	0	1	1	1	1	0	0	1	0	0	1	4		
East Windsor	EW19	Buyout property on the west side of South Water Street to avoid repetitive flooding in the area.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	More than \$100,000	Town Operating Budget / CT DEEP / DEMHS	07/2023 - 06/2024	Low	0	1	1	0	1	1	0	1	1	1	1	0	1	0	3		
Ellington	EII1	Assess possible alternate routes to Crystal Lake, or other solutions to the risk of isolation in that area (such as stationing personnel there) in order to determine the cost-effectiveness of different options.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7		
Ellington	EII2	Work with State DOT to advance road improvement and maintenance projects to ensure access to and egress from the Crystal Lake community remains open during and after storms (Routes 140 and 30).	7. Improve the emergency response capabilities of the region and its communities	Structural Projects	Public Works	\$0 - \$10,000	Town Operating Budget / Grants	07/2019 - 06/2020	High	1	0	1	1	1	0	1	0	1	0	1	1	0	0	4		
Ellington	EII3	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	0	0	1	0	0	0	0	0	1	0	1	0	5		
Ellington	EII4	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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7		
Ellington	EII5	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	1	0	1	0	0	0	0	6		
Ellington	EII6	Perform an outreach effort to private fuel dispensaries encouraging them to install back-up generator power to ensure continued access to fuel for residential and business transportation, heating/cooling, and power needs.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	1	0	1	0	0	0	1	0	0	0	1	0	0	0	6		
Ellington	EII7	Explore feasibility and cost/benefit balance of developing a microgrid for the Town Hall / Board of Education / Center School complex and/or the Resident-State-Trooper / Recreation Department / Fire Station 43 / Public Works complex.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	\$10,000 - \$25,000	Town Operating Budget / Grants / CT DEEP	01/2020 - 12/2022	Medium	0	0	1	0	1	0	1	0	0	0	1	0	1	0	7		
Ellington	EII8	Seek Certification within the Sustainable CT program and make progress with the hazard mitigation goals associated with SustainableCT certified actions.	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	1	0	5		

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

Technical Economic Factors are double-weighted.

Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Weighted STAPLEE Criteria																	Total STAPLEE Score
										Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost				
Ellington	Ell9	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	0	4		
Ellington	Ell10	Conduct a wildfire vulnerability and needs assessment to guide construction of additional dry hydrants and/or cisterns and fire roads through forested areas.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Fire Department	\$25,000 - \$50,000	Town Operating Budget / Grants / CT DEEP	07/2023 - 06/2024	Low	0	0	1	0	1	1	0	1	1	0	1	0	1	0	0	5		
Enfield	Enf1	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	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	0	8		
Enfield	Enf2	Implement Vehicle Replacement Plan to upgrade and replace public works fleet.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	More than \$100,000	Town Operating Budget	07/2022 - 06/2023	High	0	0	1	0	1	0	1	0	0	0	1	0	0	0	0	6		
Enfield	Enf3	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	0	7		
Enfield	Enf4	Coordinate with NEMO and CROCG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	0	7		
Enfield	Enf5	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	0	6		
Enfield	Enf6	Complete and implement Freshwater Brook dam action plan to mitigate flooding on I-91 and Route 5.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants / CT DEEP	07/2022 - 06/2024	Medium	1	0	1	0	1	0	0	0	1	0	1	1	1	1	0	6		
Enfield	Enf7	Pursue opportunities to bury utilities in appropriate locations and scenarios, such as during a road reconstruction.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	More than \$100,000	Grants	07/2022 - 06/2024	Medium	1	0	1	1	0	0	1	0	0	0	1	0	0	0	0	4		
Enfield	Enf8	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	0	2		
Enfield	Enf9	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	0	4		
Enfield	Enf10	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	Town Operating Budget / CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0	0	3		
Enfield	Enf11	Send information to residents about emergency preparedness and services available in the event of an emergency by mailing out a newsletter and including information in tax bills.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	01/2021 - 12/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	0	4		

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

Technical Economic Factors are double-weighted.

										Weighted STAPLEE Criteria														Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	
Farmington	Far1	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	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8
Farmington	Far2	Identify funding sources and requirements to conduct a town-wide hydrologic study.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget / Grants / CT DEEP / DEMHS	07/2019 - 06/2020	High	1	0	1	0	1	0	1	0	1	0	1	0	1	0	9
Farmington	Far3	Develop a new concept for a permanent erosion prevention measure at the cemetery on Garden Street that will be accepted by regulatory agencies. Complete a grant application to implement the new concept. 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2021	High	1	0	1	0	1	0	1	0	1	0	1	0	1	0	9
Farmington	Far4		6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7
Farmington	Far5	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7
Farmington	Far6	Develop a scope of work and Request for Proposals (RFP) for an engineering and feasibility study of elevating Meadow Road and installing culverts to allow flow in both directions.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	1	0	1	0	1	0	0	0	1	0	1	0	1	0	8
Farmington	Far7	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6
Farmington	Far8	Explore the feasibility of a fourth bridge over the Farmington River. For the current planning period, develop a report of permitting needs and possible funding sources to allow for next steps to be taken during the next Plan period.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	0	0	1	0	0	0	0	0	0	0	1	1	0	0	2
Farmington	Far9	Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Property Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	0	0	1	0	1	1	0	0	0	0	1	0	0	0	4
Farmington	Far10	Conduct an assessment of the Town's snow-removal capabilities to identify opportunities for improvement.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants	07/2021 - 06/2023	Medium	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7
Farmington	Far11	Establish the Southwest Fire Station as a backup EOC.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Town Operating Budget / Grants / DEMHS	01/2021 - 12/2023	Medium	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

Technical Economic Factors are double-weighted.

Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Weighted STAPLEE Criteria														Total STAPLEE Score
										Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	
Farmington	Far12	Identify, possibly in cooperation with neighboring watershed communities, funding sources and requirements to conduct a hydrologic study of the Farmington River.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	1	0	1	0	1	1	0	1	1	0	1	0	1	0	6
Farmington	Far13	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2
Farmington	Far14	Coordinate with CT SHPO to conduct outreach to Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	8. Ensure community character and social equity are addressed in mitigation activities	Education & Awareness	Planning, in coordination with SHPO	\$0 - \$10,000	SHPO	01/2021 - 12/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4
Farmington	Far15	Coordinate with CT SHPO to conduct historic research.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	Town Operating Budget / CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0	3
Farmington	Far16	Coordinate with CT SHPO to conduct historic research.	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4
Glastonbury	Gla1	Complete the Tryon Street and Doug Road drainage project to reduce flooding in South Glastonbury.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2019 - 06/2021	High	1	0	1	0	1	0	1	0	1	0	1	1	0	0	6
Glastonbury	Gla2	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7
Glastonbury	Gla3	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Engineering	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7
Glastonbury	Gla4	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6
Glastonbury	Gla5	Apply the same flood damage prevention guidelines to the Connecticut River floodplain and other isolated flood zones not associated with Roaring Brook, Salmon Brook, Grindle Brook, and Meadow Drain.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	0	1	1	0	1	0	0	0	1	0	0	0	0	0	3
Glastonbury	Gla6	Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Property Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	0	0	1	0	1	1	0	0	0	0	1	0	0	0	4
Glastonbury	Gla7	Conduct outreach to private property owners encouraging them to remove dangerous trees and branches on their property.	6. Improve public outreach, education, and warning systems	Education & Awareness	Parks & Recreation	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7
Glastonbury	Gla8	Adopt best-practices guidelines for contractors performing major tree clearing projects to minimize impacts on drainage.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning / Parks & Recreation	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	1	0	0	0	1	0	0	0	1	0	1	1	1	0	4

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Weighted STAPLEE Criteria														Total STAPLEE Score
										Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	
Glastonbury	Gla9	Carry out a campaign to educate property owners on the impact of using water, especially private well water, to irrigate turf during droughts. Include alternative options.	6. Improve public outreach, education, and warning systems	Education & Awareness	Health & Communications	\$10,000 - \$25,000	Town Operating Budget	01/2020 - 12/2022	Medium	1	0	1	1	1	0	1	0	0	0	0	0	1	0	4
Glastonbury	Gla10	Update the Storm Drainage Management Reports prepared for the Roaring Brook, Salmon Brook, Grindle Brook and Meadow Drain watersheds to ensure their continued use as policy guidelines for development within these areas to prevent downstream flooding, erosion, and property damage.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	0	0	1	0	1	1	0	0	1	0	0	0	1	0	4
Glastonbury	Gla11	Update the Town-wide storm drainage management program/Master Drainage Studies. Provide recommendations pertaining to the latest innovative techniques to manage stormwater quality and quantity, such as biofilters and rain gardens.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2020 - 06/2022	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6
Glastonbury	Gla12	Identify long-term stream channel erosion problems and prioritize for remediation. Include specific remediation projects in the next HMP update.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$25,000 - \$50,000	Grants	07/2021 - 06/2023	Medium	1	0	1	0	0	0	1	0	1	0	1	0	0	0	7
Glastonbury	Gla13	Make progress with the hazard mitigation goals associated with SustainableCT certified actions.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	1	0	5
Glastonbury	Gla14	Promote the use of drywells and other infiltration structures to direct runoff and precipitation into structures for groundwater recharge	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	0	0	1	0	0	1	0	1	0	0	1	0	1	0	3
Glastonbury	Gla15	Adopt new Drought Ordinances that reflect and promote the findings and recommendations of the 2003 Connecticut Drought Preparedness and Response Plan (or future updates to that document).	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	0	1	1	0	1	1	0	1	1	0	0	0	1	0	2
Glastonbury	Gla16	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.	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4
Granby	Gra1	Review snow removal policy for emergency situations and adopt a policy that will limit road obstruction.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	0	0	0	0	5
Granby	Gra2	Develop the Town's social media presence and utilize that media to improve public communication about natural hazards.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	1	0	0	0	0	0	6
Granby	Gra3	Update the Town website to include up-to-date information about natural hazards.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	1	1	0	1	0	1	0	0	0	7
Granby	Gra4	Develop a standard operating procedure to address trees that fall into streams and block bridges and culverts.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	0	0	1	0	1	0	1	0	0	1	0	0	1	0	4

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria														Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CRCOG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	
Granby	Gra5	Consider and document the labor resource needs and benefits of participation in the Sustainable CT program.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8
Granby	Gra6	Develop and implement timber management program for town-owned property.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / Grants / CT DEEP	01/2019 - 12/2020	High	0	0	1	0	1	1	1	0	1	0	0	0	1	0	5
Granby	Gra7	Increase local budget for tree trimming.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants	01/2020 - 12/2020	High	1	0	1	0	1	0	1	0	0	0	0	0	0	0	5
Granby	Gra8	Replace analog communication system and acquire new computers for the EOC.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Grants / DEMHS	07/2020 - 06/2021	High	1	0	0	0	1	0	1	0	1	0	1	0	0	0	6
Granby	Gra9	Complete the reconstruction of the Silver Street Bridge.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$50,000 - \$100,000	Grants	07/2019 - 06/2020	High	1	0	1	0	1	0	1	0	1	1	1	1	1	0	6
Granby	Gra10	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7
Granby	Gra11	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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7
Granby	Gra12	Pursue opportunities, including MOUs and CRCOG's service sharing initiative, for service and equipment sharing with neighboring communities. Specifically, the Fire Department needs access to a utility vehicle.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	1	0	0	0	0	1	0	1	0	6
Granby	Gra13	Establish ordinance to prevent road obstruction due to illegal snow removal.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	1	1	0	1	0	0	0	1	0	0	0	0	0	4
Granby	Gra14	Draft a regulation requiring dry hydrant installation in new developments.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	0	1	1	0	1	0	0	1	1	0	1	0	1	0	5
Granby	Gra15	Conduct outreach to promote timber management planning with major landholders.	6. Improve public outreach, education, and warning systems	Natural Resources Protection	Public Works	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7
Granby	Gra16	Pursue MOUs with local vendors on an annual basis to provide assistance during and following storms.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	0	0	1	0	0	0	5
Granby	Gra17	Annually evaluate and update training protocols, particularly in relation to flooding.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Public Works	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	1	0	0	0	0	0	0	0	0	2

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

Technical Economic Factors are double-weighted.

										Weighted STAPLEE Criteria															
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	Total STAPLEE Score	
Granby	Gra18	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6	
Granby	Gra19	Evaluate and update the stormwater management plan to state requirements.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2020 - 06/2022	Medium	0	0	1	0	1	0	0	0	1	0	0	0	1	0	5	
Granby	Gra20	Conduct outreach efforts to prevent road obstruction due to illegal snow removal.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Education & Awareness	Public Works	\$10,000 - \$25,000	Town Operating Budget	01/2020 - 12/2022	Medium	1	0	1	0	1	0	0	0	0	0	1	0	0	0	6	
Granby	Gra21	Evaluate and update the zoning, subdivision and wetland regulations to ensure they limit exposure to natural hazards.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget / Grants	01/2020 - 12/2022	Medium	0	1	1	0	1	0	0	0	1	1	1	0	1	0	5	
Granby	Gra22	Conduct a wildfire vulnerability and needs assessment to guide construction of additional dry hydrants and/or cisterns and fire roads through forested areas.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Fire Department	\$25,000 - \$50,000	Town Operating Budget / Grants / CT DEEP / DEMHS	07/2021 - 06/2023	Medium	0	0	1	0	1	0	0	0	1	0	1	0	1	0	7	
Granby	Gra23	Update GIS technology to coordinate and prioritize response.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Planning	\$25,000 - \$50,000	Town Operating Budget / Grants / DEMHS	01/2021 - 12/2023	Medium	0	0	1	0	1	0	0	0	0	0	1	0	0	0	5	
Granby	Gra24	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2	
Granby	Gra25	Generate a list of priority bridge, culvert, and other drainage projects identified in the Capital Improvement Plan to be included as individual actions in the next HMP update.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	1	0	1	0	0	1	1	1	1	0	1	0	0	0	5	
Granby	Gra26	Complete an analysis of costs and benefits of joining the FEMA Community Rating System.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	1	0	1	0	1	1	1	1	0	0	1	0	0	0	5	
Granby	Gra27	Coordinate with CT SHPO to conduct outreach to	8. Ensure community character and social equity are addressed in mitigation activities	Education & Awareness	Planning, in coordination with SHPO	\$0 - \$10,000	SHPO	01/2021 - 12/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4	
Granby	Gra28	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4	
Granby	Gra29	Create a long-range plan for relocating high density utility facilities.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants	07/2023 - 06/2024	Low	1	0	1	0	0	1	1	1	1	0	1	0	0	0	5	
Granby	Gra30	Purchase large wood chipper and new utility vehicle.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	More than \$100,000	Grants	01/2024 - 12/2024	Low	0	0	1	0	0	1	0	1	0	0	1	0	0	0	2	

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Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria																Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
Hartford	Har1	Develop an EAP for the Batterson Park levee in Farmington, and provide it to the Town of Farmington.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Grants	01/2020 - 12/2020	High	0	0	1	0	1	1	1	0	1	0	0	0	0	0	4		
Hartford	Har2	Supplement or replace the generators at the city's Fire Houses to support their roles as emergency places of refuge.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Fire Department	More than \$100,000	Town Operating Budget / DEMHS	07/2022 - 06/2023	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6		
Hartford	Har3	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7		
Hartford	Har4	Coordinate with NEMO and CROCG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7		
Hartford	Har5	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6		
Hartford	Har6	Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Property Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	0	0	1	0	1	1	0	0	0	0	1	0	0	0	4		
Hartford	Har7	Determine the best course for addressing drainage issues at the culvert on New Park Avenue near the tire facility. Complete the determined action or include it in the next plan.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Town Operating Budget / Grants	07/2022 - 06/2024	Medium	1	0	1	0	0	0	1	0	1	0	1	1	0	0	5		
Hartford	Har8	Complete implementation of System Wide Improvement Framework and Semi-Qualitative Risk Assessment for the Hartford Flood Control System, submitted to USACE in 2018.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2024	Medium	1	0	1	0	0	0	1	0	1	0	1	1	0	0	5		
Hartford	Har9	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2		
Hartford	Har10	Coordinate with CT SHPO to conduct outreach to	8. Ensure community character and social equity are addressed in mitigation activities	Education & Awareness	Planning, in coordination with SHPO	\$0 - \$10,000	SHPO	01/2021 - 12/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4		
Hartford	Har11	Make progress with the hazard mitigation goals associated with SustainableCT certified actions.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	1	0	5		
Hartford	Har12	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4		
Hartford	Har13	Conduct tabletop natural hazard emergency response drills with local departments more frequently. Ensure multiple hazard scenarios are drilled.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Town Operating Budget / DEMHS	01/2023 - 12/2024	Low	0	0	1	0	1	1	0	0	0	0	0	0	0	0	2		

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Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria															Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Hartford	Har14	Increase DPW budget or personnel to allow for proper maintenance of drainage swales.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	More than \$100,000	Town Operating Budget	01/2024 - 12/2024	Low	0	0	1	0	1	1	1	1	1	0	1	1	1	0		
Hebron	Heb1	Assess the capability of the RHAM middle and high school to serve as regional emergency shelters.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	0	0	1	0	1	0	1	0	0	0	0	0	0	0		
Hebron	Heb2	Perform study to determine Town's ability to maintain sufficient water supply to use for wildfire suppression in the future given continued development. Consider the effect of droughts and climate change.	7. Improve the emergency response capabilities of the region and its communities	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2019 - 06/2021	High	1	0	0	0	1	0	1	0	1	0	1	0	1	0		
Hebron	Heb3	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
Hebron	Heb4	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0		
Hebron	Heb5	Update floodplain regulations when new FIRM maps are issues by FEMA to be at or higher than regulatory standards.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	0	1	1	0	1	0	0	1	1	1	1	0	1	0		
Hebron	Heb6	Review the LID Manual developed by the Northwest Hills Council of Governments and determine whether LID can be incorporated locally to increase rural resiliency.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget	07/2021 - 06/2022	Medium	1	0	1	0	0	0	0	0	0	0	1	0	1	0		
Hebron	Heb7	Perform upgrades to the electrical system, generators, and fuel capacity of the RHAM Middle and High Schools so that they can operate bathroom and cooking facilities and be used as emergency shelters.	7. Improve the emergency response capabilities of the region and its communities	Structural Projects	Public Works	More than \$100,000	Town Operating Budget / Grants / DEMHS	07/2022 - 06/2024	Medium	1	0	1	0	1	1	1	0	0	0	1	0	0	0		
Hebron	Heb8	Coordinate with NEMO and CROCG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2020	Low	1	0	1	0	1	1	0	1	0	0	1	0	1	0		
Hebron	Heb9	Complete a draft timber management plan for Town-owned forested land.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Fire Department	\$0 - \$10,000	Town Operating Budget / CT DEEP	07/2021 - 06/2022	Low	0	0	1	0	1	1	0	1	0	0	0	0	1	0		
Hebron	Heb10	Make progress with the hazard mitigation goals associated with SustainableCT certified actions.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	1	0		
Hebron	Heb11	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0		
Manchester	Man1	Consider and document the labor resource needs and benefits of participation in the Sustainable CT program.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0		
Manchester	Man2	Require Elevation Certificates for all new development permits in or near floodplains and filing them both in the building department and with land records.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Property Protection	Building Department	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	0	1	1	0	1	1	1	1	1	0	1	1	0	0		

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Benefit or Cost = 1

Neutral = 0

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Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Weighted STAPLEE Criteria															Total STAPLEE Score
										Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Manchester	Man3	Develop a prioritized list of flood prone roadways to be upgraded to reduce potential for access being blocked due to flooding.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	1	0	1	0	1	0	1	0	1	0	1	0	0	0	8	
Manchester	Man4	Assess needs of the new EOC in the facilities management building to determine its resilience to natural hazards, and to identify needs to make it more resilient.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2019 - 06/2021	High	0	0	1	0	1	0	1	0	0	0	0	0	0	0	4	
Manchester	Man5	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Manchester	Man6	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Manchester	Man7	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6	
Manchester	Man8	Address easement issues being worked through with regards to a bridge upgrade, and complete construction.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants	07/2021 - 06/2023	Medium	1	0	1	0	1	0	1	0	1	1	1	1	1	0	6	
Manchester	Man9	Implement an educational system for property owners, including appropriate materials and means for information dissemination. (Include information on importance of properly maintaining private trees).	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$25,000 - \$50,000	Town Operating Budget / Grants	01/2021 - 12/2023	Medium	1	0	1	1	1	0	1	0	0	0	0	0	1	0	4	
Manchester	Man10	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2	
Manchester	Man11	Complete and add on to identification of private properties served by private wells and/or on-site septic systems located within known flood risk zones.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Property Protection	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2021 - 06/2023	Low	0	0	1	0	1	1	0	1	0	0	0	0	1	0	2	
Manchester	Man12	Coordinate with CT SHPO to conduct historic res	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4	
Manchester	Man13	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	Town Operating Budget / CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0	3	

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Neutral = 0

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Community	Action or Strategy Number	Mitigation Actions and Strategies for CRCOG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
Manchester	Man14	Conduct outreach to owners of properties identified as being served by private wells and/or on-site septic systems located within known flood risk zones to educate them about strategies for protecting their properties. Include materials and recommendations for appropriate remediation of private utilities that have been subjected to flooding, for health protection and promotion.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	01/2021 - 12/2023	Low	1	0	1	0	1	1	0	1	0	0	1	0	1	0			
Mansfield	Mans1	Encourage owners of private dams to develop EAPs and share with Town.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	0	0	1	0	1	1	1	0	0	0	0	0	0	0			
Mansfield	Mans2	Encourage owners of private dams to implement recommendations resulting from dam inspections.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	0	0	1	0	1	1	1	0	0	0	0	0	0	0			
Mansfield	Mans3	Establish protocols for evaluation of snow loads on Town buildings.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Preparedness & Emergency Response	Public Works	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	0	0	1	0	1	0	1	0	0	0	0	0	0	0			
Mansfield	Mans4	Complete zoning regulation "clean up" to reflect hazard mitigation best practices. Address issues including potential cistern & dry hydrant requirements in new subdivisions, use of native species, and snow storage needs for streets.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget	01/2019 - 12/2020	High	0	1	1	0	1	1	1	1	1	1	1	0	1	0			
Mansfield	Mans5	Evaluate areas on Higgins Highway (Route 31) that have flooded during large events for possible mitigation actions.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants / DEMHS	01/2020 - 12/2020	High	0	0	1	0	1	0	1	0	0	0	0	0	0	0			
Mansfield	Mans6	Implement recommendations resulting from inspections of Town-owned dams.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Grants / CT DEEP	07/2022 - 06/2023	High	1	0	1	0	1	0	1	0	1	0	1	1	0	0			
Mansfield	Mans7	Improve north side of Bassetts Bridge Road west of the bridge crossing the Naubesatuck Lake; this section of road is frequently washed out in high water events.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2023	High	1	0	1	0	1	0	1	0	1	1	1	1	1	0			
Mansfield	Mans8	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0			
Mansfield	Mans9	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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0			

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria														Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	
Mansfield	Mans10	Make available information on natural disasters and preparedness on the Town's website with links to state and federal resources.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	1	1	0	1	0	1	0	0	0	7
Mansfield	Mans11	Make available literature on natural disasters and preparedness at Town Hall and the Library.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	0	0	1	0	0	0	0	0	0	0	4
Mansfield	Mans12	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6
Mansfield	Mans13	Conduct outreach efforts to educate and train residents on individual actions they can take to prepare for, survive, and recover from disaster events.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	1	0	1	0	1	0	0	0	0	0	1	0	0	0	6
Mansfield	Mans14	Install an emergency generator at the Public Library.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6
Mansfield	Mans15	Develop a list of best practices with regard to sustainable and resilient design to be incorporated into town projects when feasible.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget	01/2020 - 12/2022	Medium	1	0	1	0	0	0	1	0	0	0	1	0	1	0	7
Mansfield	Mans16	Develop communication strategy to better inform public of parking restrictions during snow events. Use Facebook, Website and Code Red Reverse 911.	6. Improve public outreach, education, and warning systems	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	01/2020 - 12/2022	Medium	1	0	0	0	1	0	1	0	1	0	0	0	0	0	4
Mansfield	Mans17	Conduct a wildfire vulnerability and needs assessment to guide construction of additional dry hydrants and/or cisterns.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Prevention	Fire Department	\$25,000 - \$50,000	Town Operating Budget / Grants / CT DEEP	07/2021 - 06/2023	Medium	0	0	1	0	1	0	0	0	1	0	1	0	1	0	7
Mansfield	Mans18	Complete preparation of EAPs for Town-owned and maintained dams, as well as private ones where applicable.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$50,000 - \$100,000	Town Operating Budget / Grants	01/2023 - 12/2024	Medium	0	0	1	0	1	1	0	0	1	0	0	0	0	0	3
Mansfield	Mans19	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2
Mansfield	Mans20	Monitor catch basins to determine whether switch away from sand has had an impact on basin filling.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	0	0	1	0	0	1	0	0	0	0	0	0	1	0	2
Mansfield	Mans21	Seek Certification within the Sustainable CT program and make progress with the hazard mitigation goals associated with SustainableCT certified actions.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	1	0	5
Mansfield	Mans22	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	Town Operating Budget / CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0	3
Mansfield	Mans23	Develop public education programming with regard to tree planting and maintenance on private property.	6. Improve public outreach, education, and warning systems	Education & Awareness	Public Works	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2021 - 06/2023	Low	1	0	1	1	1	1	1	1	0	0	0	0	1	0	2

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Mansfield	Mans24	Coordinate with CT SHPO to conduct historic res	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	
Mansfield	Mans25	Develop a public education program encouraging water conservation that utilizes UConn water usage alerts.	6. Improve public outreach, education, and warning systems	Education & Awareness	Public Works	\$10,000 - \$25,000	Town Operating Budget / Grants	01/2021 - 12/2023	Low	1	0	1	1	0	1	1	0	0	0	0	0	1	0	
Mansfield	Mans26	Educate property owners on vegetation clearing techniques that will reduce water runoff and reduce the amount of combustible fuel.	6. Improve public outreach, education, and warning systems	Education & Awareness	Public Works	\$10,000 - \$25,000	Town Operating Budget	01/2021 - 12/2023	Low	1	0	1	1	1	1	1	1	0	0	0	0	1	0	
Mansfield	Mans27	Explore the feasibility of developing a microgrid that encompasses some or all of the following: Town Hall, Community Center, E.O. Smith High School, Library, Town Garage.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$25,000 - \$50,000	Grants / CT DEEP	07/2023 - 06/2024	Low	1	0	1	0	1	1	0	1	1	0	1	0	1	0	
Mansfield	Mans28	Improve and expand the Town’s GIS system to assist town personnel in the event of an emergency of natural disaster.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Planning	\$50,000 - \$100,000	Town Operating Budget / Grants	01/2024 - 12/2024	Low	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
Marlborough	Mar1	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	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	
Marlborough	Mar2	Develop prioritized list of needed culvert and bridge replacements and upgrades and apply for funding to pursue that work.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2021	High	1	0	1	0	1	0	1	0	1	0	1	0	1	0	
Marlborough	Mar3	Replace one Public Works truck.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	More than \$100,000	Grants	07/2022 - 06/2023	High	0	0	1	0	1	0	1	0	0	0	0	1	1	0	
Marlborough	Mar4	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	0	0	1	0	0	0	0	0	1	0	1	0	
Marlborough	Mar5	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	
Marlborough	Mar6	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	
Marlborough	Mar7	Review the LID Manual developed by the Northwest Hills Council of Governments and determine whether LID can be incorporated locally to increase rural resiliency.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget	07/2021 - 06/2022	Medium	1	0	1	0	0	0	0	0	0	0	1	0	1	0	
Marlborough	Mar8	Increase Public Works staff numbers.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$50,000 - \$100,000	Town Operating Budget	07/2023 - 06/2024	Medium	1	0	1	0	1	1	1	0	1	0	1	1	0	0	

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Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Marlborough	Mar9	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0		
Marlborough	Mar10	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0		
Marlborough	Mar11	Prepare a forest fire suppression study.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Fire Department	\$25,000 - \$50,000	Grants / CT DEEP	07/2023 - 06/2024	Low	1	0	0	0	1	1	0	1	1	0	1	0	1	0		
New Britain	NB1	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	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0		
New Britain	NB2	Acquire a permanent generator at the Steele Street Pump Station to maintain fire protection in that area.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	01/2019 - 12/2020	High	1	0	1	0	1	1	1	0	0	0	1	0	1	0		
New Britain	NB3	Address the section of Willow Brook bank near the soccer fields that is washed out.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$50,000 - \$100,000	Town Operating Budget / Grants	07/2021 - 06/2022	High	1	0	1	0	1	0	1	0	1	1	1	1	1	0		
New Britain	NB4	Address damaged retaining walls along the brook at Stanley Quarter Park.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$50,000 - \$100,000	Town Operating Budget / Grants	07/2021 - 06/2022	High	1	0	1	0	1	0	1	0	1	1	1	1	1	0		
New Britain	NB5	Implement dam repairs at Stanley Quarter Park.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$50,000 - \$100,000	Grants	07/2021 - 06/2022	High	1	0	1	1	1	0	1	0	1	1	1	1	1	0		
New Britain	NB6	Upsize storm drains in Allen street to increase capacity. Designs are in place, implementation is grant dependent. 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2023	High	1	0	1	1	1	0	1	0	1	1	1	1	1	0		
New Britain	NB7	Develop a prioritized list of needed acquisitions, upgrades, and maintenance of critical facility generators.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
New Britain	NB8	Coordinate with NEMO and CROCG 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.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	1	1	0	0	0	1	0	0	0		
New Britain	NB9	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
New Britain	NB10	Incorporate natural hazard mitigation planning into the 2020 POCD update.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0		
New Britain	NB11		2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget / Grants	01/2019 - 06/2020	Medium	0	0	1	0	1	0	1	0	1	0	0	0	0	0		

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New Britain	NB12	Implement plan to line west canal with geo-textile fabric to mitigate flooding from that source. Monitor the effectiveness of this measure and determine whether additional studies need to be performed to address flooding from groundwater.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2024	Medium	1	0	1	1	1	0	1	0	1	1	1	1	1	0		
New Britain	NB13	Acquire a portable generator for sewer pumping stations.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Preparedness & Emergency Response	Emergency Management	More than \$100,000	Town Operating Budget / DEMHS	01/2022 - 12/2024	Medium	1	0	1	0	1	1	1	0	0	0	1	0	1	0		
New Britain	NB14	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0		
New Britain	NB15	Add information about preparedness, mitigation, and City capabilities to the City website.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	1	0	1	0	1	1	1	1	1	0	1	0	0	0		
New Britain	NB16	Develop an emergency preparedness pamphlet for residents in English, Polish, and Spanish, distribute to residents, and post on City website.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	1	0	1	0	1	1	1	1	1	0	1	0	0	0		
New Britain	NB17		8. Ensure community character and social equity are addressed in mitigation activities	Education & Awareness	Planning, in coordination with SHPO	\$0 - \$10,000	SHPO	01/2021 - 12/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0		
New Britain	NB18	Coordinate with CT SHPO to conduct outreach to	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	0	0	1	0	1	1	0	1	0	0	1	0	1	0		
New Britain	NB19	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	Town Operating Budget / CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0		
New Britain	NB20	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0		
New Britain	NB21	Use targeted mailings to particularly vulnerable areas, such as special flood hazard areas and dam failure inundation areas, to encourage signups for the CT Alerts emergency notification system	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	01/2021 - 12/2023	Low	1	0	1	0	0	1	1	1	0	0	0	0	0	0		
New Britain	NB22	Dredge pond at Stanley Quarter Park.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Prevention	Public Works	\$25,000 - \$50,000	Grants	01/2023 - 12/2024	Low	0	0	1	1	0	0	0	0	0	1	1	0	0	1		
Newington	New1	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	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0		
Newington	New2	Explore possibility of increasing annual budgets for waterway maintenance, snow removal, and tree maintenance	7. Improve the emergency response capabilities of the region and its communities	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	High	1	0	1	0	1	0	1	0	0	0	0	0	0	0		

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Newington	New3	Identify cost-effective ways to mitigate or reduce flooding in the Stamm Road area, which includes Repetitive Loss properties, especially those that do not require working with Amtrak.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	CT DEEP / DEMHS	07/2019 - 06/2021	High	0	0	1	0	1	0	1	0	1	0	1	0	0	0	7	
Newington	New4	Equip the Backup EOC (Police Training Facility) with a generator and communication equipment	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$50,000 - \$100,000	Town Operating Budget / Grants	07/2021 - 06/2022	High	1	0	1	0	1	0	1	0	1	0	1	1	0	0	6	
Newington	New5	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Newington	New6	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Newington	New7	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6	
Newington	New8	Perform an assessment of assets located in flood-prone areas.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Engineering	\$10,000 - \$25,000	Town Operating Budget / Grants / DEMHS	07/2020 - 06/2022	Medium	1	0	1	0	1	0	0	0	1	0	1	0	1	0	8	
Newington	New9	Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Property Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	0	0	1	0	1	1	0	0	0	0	1	0	0	0	4	
Newington	New10	Equip backup shelters (Kellog and Wallace Middle Schools) with emergency generators	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	More than \$100,000	Town Operating Budget / Grants	07/2022 - 06/2024	Medium	1	0	1	0	0	0	0	0	0	0	0	0	0	0	3	
Newington	New11	Upgrade equipment related to waterway maintenance, snow removal, and tree maintenance. Include, specifically, adding the purchase of a large-tree bucket-truck for the Parks and Grounds Department to the Town's long-range plans.	7. Improve the emergency response capabilities of the region and its communities	Prevention	Public Works / Parks & Grounds	More than \$100,000	Grants	07/2022 - 06/2024	Medium	0	0	1	0	1	0	0	0	0	0	1	0	0	0	5	
Newington	New12	Pursue opportunities to bury utilities in appropriate locations and scenarios, such as during a road reconstruction.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	More than \$100,000	Grants	07/2022 - 06/2024	Medium	0	0	1	1	1	0	1	0	0	0	0	0	0	0	2	
Newington	New13	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4	
Plainville	Pla1	Encourage residents to register for emergency alerts to their cell phones through the Everbridge Reverse 911 system. Include links and information on the Town website and Facebook page.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7	

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

Technical Economic Factors are double-weighted.

Weighted STAPLEE Criteria																								
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	Total STAPLEE Score
Plainville	Pla2	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.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	1	0	1	0	8	
Plainville	Pla3	Work with upstream communities, dam owners, and CT DEEP to develop a coordinated plan to mitigate peak flows from dam releases on the Pequabuck River.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	0	0	1	0	1	1	1	0	1	0	1	0	0	6	
Plainville	Pla4	Designate a Town floodplain administrator.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Administration	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	0	0	1	0	1	0	1	0	1	0	0	0	1	0	6
Plainville	Pla5	Pursue permitting to remove sediment from the Pequabuck River channel upstream of the railroad crossing and west of Neal Court.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget	01/2019 - 12/2020	High	0	0	1	1	1	0	1	0	0	1	1	0	0	1	2
Plainville	Pla6	Incorporate new Hazard Mitigation priorities, based on this Plan, in the 2019/2020 update to the POCD.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2019 - 12/2020	High	0	0	1	0	1	0	1	0	1	0	0	0	0	0	5
Plainville	Pla7	Upgrade the generator at the Town Hall to provide full backup power to the building.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2019 - 06/2021	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6
Plainville	Pla8	Identify unusable properties on which it would be appropriate to create detention ponds.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2019 - 06/2021	High	0	0	1	0	1	0	1	0	0	0	1	0	1	0	7
Plainville	Pla9	Provide for periodic survey of waterways to remove obstructions.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2021	High	0	0	1	1	1	0	1	0	0	0	0	0	1	1	2
Plainville	Pla10	Acquire emergency generators for the Police and Fire Departments.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2019 - 06/2021	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6
Plainville	Pla11	Adopt stormwater retention regulations.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$25,000 - \$50,000	Town Operating Budget	07/2020 - 06/2021	High	0	1	1	0	1	0	1	1	1	1	1	0	1	0	5
Plainville	Pla12	Complete renovation of Wheeler Elementary School with a generator and steam heat.	7. Improve the emergency response capabilities of the region and its communities	Structural Projects	Public Works	More than \$100,000	Town Operating Budget / Grants / DEMHS	07/2022 - 06/2023	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6
Plainville	Pla13	Purchase a tanker for the fire department to bring water to underserved areas on outskirts of town. 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.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Fire Department	More than \$100,000	Grants	01/2022 - 12/2023	High	0	0	1	0	1	0	1	0	0	0	1	1	1	0	5
Plainville	Pla14	Adopt regulations to promote conservation subdivisions in R-40 residential areas with no sanitary sewer service.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7
Plainville	Pla15	Adopt regulations to promote conservation subdivisions in R-40 residential areas with no sanitary sewer service.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	0	1	1	0	1	0	0	1	1	1	1	0	1	0	4

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria															Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Plainville	Pla16	Assign a municipal staff-member to be a utility liaison responsible for maintaining contact with utility representatives.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	0	0	1	0	1	0	1	0	0	0	0	0	0	0		
Plainville	Pla17	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
Plainville	Pla18	Identify specific potential uses for GIS in emergency planning and pursue development of those capabilities.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Preparedness & Emergency Response	Planning	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	0	0	1	0	1	0	0	0	0	0	0	0	0	0		
Plainville	Pla19	Work with internet providers to help ensure internet remains available after storm events.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	1	0	0	0	1	1	1	0	0	0	1	0	0	0		
Plainville	Pla20	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0		
Plainville	Pla21	Create lists of local resources for residents and business owners and supply that information prior to forecast hazard events.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	1	0	1	0	1	0	1	0	0	0	1	0	0	0		
Plainville	Pla22	Initiate a study to evaluate the effects of climate change on natural hazards in Plainville.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2020 - 06/2022	Medium	1	0	0	0	1	0	0	0	1	0	1	0	1	0		
Plainville	Pla23	Create an informational pamphlet to provide to potential floodplain developers about regulations and codes, and their reasons, relevant to developing in floodplain.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2020 - 06/2022	Medium	1	0	1	0	1	0	0	0	1	0	1	0	0	0		
Plainville	Pla24	Create a Plainville Community Emergency Response Team (CERT).	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / Grants / DEMHS	01/2020 - 12/2022	Medium	1	0	1	0	1	0	1	0	0	0	0	0	0	0		
Plainville	Pla25	Adopt a regulation requiring installation of cisterns or dry hydrants in new developments where public water service will not be provided.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	0	1	1	0	1	0	0	1	1	0	1	0	1	0		
Plainville	Pla26	Expand emergency communication and notification methods to a variety of media, including radio, television, social media, and the Town Website.	6. Improve public outreach, education, and warning systems	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Town Operating Budget / Grants / DEMHS	07/2021 - 06/2023	Medium	1	0	1	0	1	0	1	0	1	0	0	0	0	0		
Plainville	Pla27	Delete the floodplain overlay zone from zoning regulations and replace with an "open space preservation" overlay zone that can be applied to areas outside flood zones to limit development.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$25,000 - \$50,000	Town Operating Budget / CT DEEP	07/2021 - 06/2023	Medium	0	0	1	0	1	0	0	0	1	1	1	0	1	0		

										Weighted STAPLEE Criteria															Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Plainville	Pla28	Perform an assessment of in-stream structures (such as small dams) to identify and prioritize those that can be removed.	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Prevention	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants / CT DEEP	07/2021 - 06/2023	Medium	1	0	0	0	1	0	0	0	1	0	1	0	1	0	6	
Plainville	Pla29	Develop a plan for making the wastewater treatment plant more resilient to flooding. The Pequabuck River Study determined that small-scale floodproofing projects should be considered; this plan should determine which such measures should be implemented. (Examples include structural floodproofing and elevation of the walls of the open tanks).	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$50,000 - \$100,000	Grants	07/2023 - 06/2024	Medium	1	0	1	0	1	0	0	0	1	0	1	0	1	0	8	
Plainville	Pla30	Perform a town-wide drainage study to identify and prioritize culverts that need to be upsized.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$50,000 - \$100,000	Grants	07/2023 - 06/2024	Medium	1	0	0	0	1	0	0	0	1	0	1	0	1	0	6	
Plainville	Pla31	Construct a new EOC.	7. Improve the emergency response capabilities of the region and its communities	Structural Projects	Emergency Management	More than \$100,000	Grants / DEMHS	07/2022 - 06/2024	Medium	1	0	1	0	1	0	1	0	1	1	1	1	1	0	6	
Plainville	Pla32	Reconstruct the Woodford Avenue Bridge over the Quinnipiac River at a higher elevation to allow larger flows and debris to pass through unimpeded.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2024	Medium	1	0	1	0	1	0	1	0	1	1	1	1	1	0	6	
Plainville	Pla33	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas, including property acquisition. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2	
Plainville	Pla34	Have Town staff attend a FEMA or State training in basic GIS use, and/or in the use of GIS in emergency planning.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3	
Plainville	Pla35	Develop formal agreements with neighboring communities to provide emergency assistance in case bridges are washed out by flooding and areas become isolated.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	1	0	1	0	1	1	1	1	0	0	1	0	0	0	5	
Plainville	Pla36	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	Town Operating Budget / CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0	3	
Plainville	Pla37	Coordinate with CT SHPO to conduct historic research.	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4	
Plainville	Pla38	Develop a set of informational resources to which commercial and industrial property owners interested in floodproofing can be directed. Have hard copies of the resources available at Town Hall and electronic links on the Town website.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning	\$10,000 - \$25,000	Town Operating Budget / Grants	01/2021 - 12/2023	Low	1	0	1	0	1	1	1	1	1	0	1	0	0	0	6	

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria															
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	Total STAPLEE Score	
Rocky Hill	RH1	Apply for funding through the State local bridge program to install a box culvert on Beach Road and raising the road above the 1% annual-chance flood elevation.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2023	High	1	0	1	0	1	0	1	0	1	1	1	1	1	0	6	
Rocky Hill	RH2	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Rocky Hill	RH3	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Rocky Hill	RH4	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6	
Rocky Hill	RH5	Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Property Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	0	0	1	0	1	1	0	0	0	0	1	0	0	0	4	
Rocky Hill	RH6	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2	
Rocky Hill	RH7	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4	
Simsbury	Sim1	For the area of Riverside Road near Drake Hill Bridge, monitor for opportunities to justify the CLOMR/LOMR process and environmental permitting, as part of efforts to raise the road.	9. Minimize the economic impact of hazard damages	Prevention	Public Works, Engineering	\$0 - \$10,000	Town Operating Budget / Grants / Bonding	01/2019 - 12/2019	High	0	0	1	0	1	0	1	0	1	0	0	0	1	1	5	
Simsbury	Sim2	Update flood damage prevention regulations to address Increased Cost of Compliance, allowing residents to access those funds.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	1	1	1	0	1	0	8	
Simsbury	Sim3	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	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8	
Simsbury	Sim4	Codify storm water design guidelines derived from the study of impervious cover into zoning, subdivision, and highway regulations.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2019 - 06/2021	High	1	0	1	0	1	0	1	0	1	0	1	0	1	0	9	
Simsbury	Sim5	For the area of Riverside Road near Drake Hill Bridge, address the riverbank, as the road is at risk of slumping due to erosion.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works, Engineering, Planning	\$50,000 - \$100,000	Grants / Bonding	07/2021 - 06/2022	High	1	0	1	0	1	0	1	0	1	1	1	1	1	0	6	

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Weighted STAPLEE Criteria																	Total STAPLEE Score
										Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost				
Simsbury	Sim6	Upgrade Culverts on Riverside Road, West of the Riverside Road and East Weatogue Street Intersection	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works, Engineering	\$50,000 - \$100,000	Grants / Capital Improvement Funds / Bonding	07/2021 - 06/2022	High	0	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	8	
Simsbury	Sim7	Coordinate with CTDOT to Upgrade Culverts along Route 189 at the Intersection of Elm Street	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works, Engineering	\$50,000 - \$100,000	Grants / Bonding	07/2021 - 06/2022	High	0	0	1	0	1	1	1	1	0	1	0	1	0	1	0	1	0	7
Simsbury	Sim8	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	0	1	0	1	0	1	0	7
Simsbury	Sim9	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	0	1	0	1	0	1	0	7
Simsbury	Sim10	Complete an analysis of costs and benefits of joining the FEMA Community Rating System.	9. Minimize the economic impact of hazard damages	Prevention	Planning, Administration	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	1	0	0	0	0	1	0	0	0	0	0	7
Simsbury	Sim11	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	0	6
Simsbury	Sim12	Initiate design and grant application work for elevation of Route 315.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works, Engineering	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	1	0	1	0	1	0	0	0	1	0	1	0	1	0	1	0	0	8
Simsbury	Sim13	Complete a study exploring the feasibility and effectiveness of raising both Route 185 and East Weatogue Street in the area where they intersect.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2020 - 06/2022	Medium	1	0	0	0	1	0	0	0	1	0	1	0	1	0	1	0	0	6
Simsbury	Sim14	Conduct a wildfire vulnerability and needs assessment to guide construction of fire roads through larger open space parcels and of additional dry hydrants and/or cisterns.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Emergency Management	\$25,000 - \$50,000	Town Operating Budget / Grants / CT DEEP	07/2021 - 06/2023	Medium	0	0	1	0	1	0	0	0	1	0	1	0	1	0	1	0	0	7
Simsbury	Sim15	Upgrade culverts associated with Stratton Brook on Town Forest and Stratton Brook Roads	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants	07/2021 - 06/2023	Medium	1	0	1	0	1	0	1	0	1	1	1	1	1	1	1	0	0	6
Simsbury	Sim16	Evaluate the Dike around the Water Pollution Control Facility to determine whether improvements are necessary.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works, Engineering, WPCA, Planning	\$25,000 - \$50,000	Capital Non-Recurring Funds	07/2021 - 06/2023	Medium	0	0	1	0	1	0	0	0	1	0	1	0	1	0	1	0	0	7
Simsbury	Sim17	Construct additional dry hydrants and/or cisterns in wildfire-prone areas not served by public water.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$50,000 - \$100,000	Grants / CT DEEP	07/2023 - 06/2024	Medium	0	0	1	0	0	0	0	0	1	0	1	0	1	0	1	0	0	6

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

Technical Economic Factors are double-weighted.

Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Weighted STAPLEE Criteria																Total STAPLEE Score
										Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
Simsbury	Sim18	Complete replacement with bridges of culverts associated with Bissell Brook on Firetown Road.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works, Engineering	\$50,000 - \$100,000	Grants / Bonding / Capital Improvement Funds	07/2023 - 06/2024	Medium	0	0	1	0	0	0	0	0	1	0	1	0	1	0	6		
Simsbury	Sim19	Acquire parcels with development potential that could worsen flood risk if developed, and preserve as open space.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning, Administration	More than \$100,000	Grants / CT DEEP	07/2022 - 06/2024	Medium	1	0	1	0	0	0	0	0	1	1	0	0	1	0	4		
Simsbury	Sim20	Work with homeowners and Eversource to floodproof or elevate power grid features (connection points, meters, and circuit breakers) in the Riverside Road area so that power can remain on during flood events.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Public Works	More than \$100,000	Town Operating Budget / Grants	07/2022 - 06/2024	Medium	0	1	1	0	1	1	1	0	0	0	1	0	0	0	4		
Simsbury	Sim21	Approve a new Drought Ordinance.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	0	0	1	0	1	1	0	1	1	0	0	0	1	0	3		
Simsbury	Sim22	Coordinate with CT SHPO to conduct outreach to Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	8. Ensure community character and social equity are addressed in mitigation activities	Education & Awareness	Planning, in coordination with SHPO	\$0 - \$10,000	SHPO	01/2021 - 12/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4		
Simsbury	Sim23	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	01/2021 - 12/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2		
Simsbury	Sim24	Assess tree maintenance practices to identify opportunities for improvement.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2021 - 06/2023	Low	1	0	1	0	1	1	1	1	1	0	0	0	1	0	5		
Simsbury	Sim26	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4		
Simsbury	Sim27	Evaluate the costs and benefits of constructing a fuel cell at the Simsbury High School	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management, Engineering, Board of Education	\$25,000 - \$50,000	Grants / Bonding	07/2023 - 06/2024	Low	1	0	1	0	0	1	0	1	0	0	1	0	1	0	4		
Somers	Som1	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	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8		
Somers	Som2	Install one additional needed dry hydrant.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Fire Department	\$0 - \$10,000	Town Operating Budget / CT DEEP	07/2019 - 06/2020	High	0	0	1	0	1	0	1	0	1	0	1	0	1	0	8		
Somers	Som3	Acquire generators for Town Hall, Public Works, and Senior Center.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	01/2019 - 12/2020	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6		

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria															
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	Total STAPLEE Score	
Somers	Som4	Hire a consultant to assist with implementation of the Somers Floodplain Management Study by prioritizing culvert improvements and obtaining necessary permits.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$50,000 - \$100,000	Grants	07/2021 - 06/2022	High	1	0	0	0	1	0	1	0	1	0	1	0	1	0	7	
Somers	Som5	Improve drainage system on Brattle Street.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2023	High	1	0	1	0	1	0	1	0	1	1	1	1	1	0	6	
Somers	Som6	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Somers	Som7	Include in permitting requirements a review of potential impacts, based on the FMS, of proposed development and town projects.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	0	1	1	0	1	0	0	1	1	0	0	0	1	0	3	
Somers	Som8	Educate residents on personal disaster safety and supply kits, through the Town website and social media.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	1	0	1	0	0	0	0	0	6	
Somers	Som9	Establish an ordinance requiring generators for new special needs housing developments.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Preparedness & Emergency Response	Planning	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	0	0	0	0	0	1	1	0	0	0	4	
Somers	Som10	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Somers	Som11	Make information about available assistance for property acquisition or relocation available at Town Hall and on the Town website.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	1	1	1	0	1	1	1	0	1	0	1	0	0	0	6	
Somers	Som12	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6	
Somers	Som13	Conduct an outreach campaign informing residents of the Community Emergency Response Team (CERT) and encouraging public participation.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7	
Somers	Som14	Expand emergency communication and notification methods to a variety of media, including radio, television, social media, and the Town Website.	6. Improve public outreach, education, and warning systems	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Town Operating Budget / Grants / DEMHS	07/2021 - 06/2023	Medium	1	0	1	0	1	0	1	0	1	0	0	0	0	0	6	
Somers	Som15	Designate a secondary shelter (most likely the Senior Center, if sufficient backup generators are installed)	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	1	0	1	0	1	1	1	1	0	0	1	0	0	0	5	
Somers	Som16	Work with CT DEEP to improve the Camp Road dam.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$0 - \$10,000	Town Operating Budget / CT DEEP	07/2021 - 06/2022	Low	1	0	1	1	1	1	1	1	1	1	1	1	1	0	2	
Somers	Som17	Complete an analysis of costs and benefits of joining the FEMA Community Rating System.	9. Minimize the economic impact of hazard damages	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	1	0	1	0	1	1	1	1	0	0	1	0	0	0	5	

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria																Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
Somers	Som18	Coordinate with CT SHPO to conduct historic res	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4		
South Windsor	SW1	Acquire generator for Wapping Elementary School to make progress towards creation of an emergency shelter in that space.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	01/2019 - 12/2020	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6		
South Windsor	SW2	Develop a plan to ensure residents have access to important medications after storm events when roads and pharmacies are closed.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2019 - 06/2021	High	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7		
South Windsor	SW3	Update Open Space Plan in 2020.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$50,000 - \$100,000	Grants	07/2021 - 06/2022	High	1	0	1	1	1	0	1	0	0	0	0	0	1	0	4		
South Windsor	SW4	Perform dam assessment of public and private structures including, but not limited to, Avery Heights dam, dam at Lake St., dam at Veteran's Park off Parkview Dr., and Dzen's dam.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Preparedness & Emergency Response	Public Works	More than \$100,000	Grants	07/2022 - 06/2023	High	1	0	0	1	1	0	1	0	1	0	1	0	1	0	5		
South Windsor	SW5	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7		
South Windsor	SW6	Complete an analysis of costs and benefits of joining the FEMA Community Rating System. Get information from participating Towns, solicit input from residents and from experts, and request assistance from CROG.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7		
South Windsor	SW7	Assign a municipal staff-member to be a utility liaison responsible for maintaining contact with utility representatives.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3		
South Windsor	SW8	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7		
South Windsor	SW9	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6		
South Windsor	SW10	Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Property Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	0	0	1	0	1	1	0	0	0	0	1	0	0	0	4		

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Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria														Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	
South Windsor	SW11	Determine additional updates to town GIS data and capabilities needed to assist with hazard mitigation. Pursue those updates.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Planning	\$25,000 - \$50,000	Town Operating Budget / Grants	07/2021 - 06/2023	Medium	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3
South Windsor	SW12	Develop and prioritize recommended actions based on dam assessment, and work with property owners to implement.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Town Operating Budget / Grants	07/2022 - 06/2024	Medium	1	0	1	1	1	0	1	0	1	1	1	1	1	0	4
South Windsor	SW13	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2
South Windsor	SW14	Improve use of municipal website and social media to educate residents on emergency preparedness.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	1	0	1	0	1	1	1	1	1	0	0	0	0	0	4
South Windsor	SW15	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	Town Operating Budget / CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0	3
South Windsor	SW16	Work with senior housing developments to have them each install emergency generators to power at least a communal space. If this is unsuccessful, consider adoption of regulation.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4
South Windsor	SW17	Coordinate with CT SHPO to conduct historic rescue	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4
South Windsor	SW18	Reach out to local gas stations to encourage and offer assistance with private emergency generator installation.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	01/2021 - 12/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4
South Windsor	SW19	Conduct outreach and education program to provide technical assistance to private owners of generators to ensure they are installed correctly.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	01/2021 - 12/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4
South Windsor	SW20	Install an emergency generator at the Public Library.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2021 - 06/2023	Low	1	0	1	0	1	1	1	1	0	0	1	0	0	0	5
Southington	Sou1	Consider and document the labor resource needs and benefits of participation in the Sustainable CT program.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8
Southington	Sou2	Include procedures specific to the liquid propane plant in the Town's Emergency Operations Plan	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	0	0	1	0	1	0	1	0	1	0	1	0	1	0	8
Southington	Sou3	Purchase new generator for the municipal center.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	01/2019 - 12/2020	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6
Southington	Sou4	Construct dry hydrants and cisterns on the east side of town and near West Ridge	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Fire Department	\$25,000 - \$50,000	CT DEEP	07/2020 - 06/2021	High	0	0	1	0	1	0	1	0	1	0	1	0	1	0	8

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Neutral = 0

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Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Weighted STAPLEE Criteria															Total STAPLEE Score
										Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Southington	Sou5	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	0	0	1	0	0	0	0	0	0	1	0	1	0	5
Southington	Sou6	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	0	1	0	1	0	7
Southington	Sou7	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	0	6
Southington	Sou8	Create and adopt Low Impact Development (LID) regulations.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget / Grants	01/2020 - 12/2022	Medium	1	1	1	0	0	0	1	1	1	1	1	0	1	0	5	
Southington	Sou9	Require installation of underground utilities in all new developments, when feasible, through the Subdivision Regulations.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	0	1	1	0	1	0	0	1	1	1	1	0	1	0	4	
Southington	Sou10	Work with groceries and gas stations to assist them with installation of emergency generators so they can reopen quickly following hazard events.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Town Operating Budget	07/2021 - 06/2023	Medium	1	0	1	0	0	0	1	0	0	0	1	0	0	0	6	
Southington	Sou11	Purchase new equipment for snow removal.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$50,000 - \$100,000	Grants	01/2023 - 12/2024	Medium	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	
Southington	Sou12	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2	
Southington	Sou13	Coordinate with CT SHPO to conduct outreach to	8. Ensure community character and social equity are addressed in mitigation activities	Education & Awareness	Planning, in coordination with SHPO	\$0 - \$10,000	SHPO	01/2021 - 12/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4	
Southington	Sou14	Coordinate with CT SHPO to conduct historic res	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4	
Southington	Sou15	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	Town Operating Budget / CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0	3	
Southington	Sou16	Work with property owners to remove constrictions and/or widen channels on private property to mitigate exacerbation of flooding conditions.	6. Improve public outreach, education, and warning systems	Education & Awareness	Public Works	\$25,000 - \$50,000	Town Operating Budget	07/2023 - 06/2024	Low	1	0	1	1	1	1	1	1	0	0	0	0	0	1	0	
Southington	Sou17	Relocate EOC to Fire Department and convert the current EOC at the Police Station into a backup EOC.	7. Improve the emergency response capabilities of the region and its communities	Structural Projects	Emergency Management	More than \$100,000	Town Operating Budget / Grants / DEMHS	07/2023 - 06/2024	Low	0	0	1	0	1	1	0	1	1	0	1	0	0	0	4	

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria															Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Stafford	Sta1	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	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0		
Stafford	Sta2	Expand hazard warning, advisory, and outreach efforts to social media.	6. Improve public outreach, education, and warning systems	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	1	0	1	0	1	0	1	0	1	0	0	0	0	0		
Stafford	Sta3	Establish an annual education program for private snow-removal contractors and residents on not obstructing roads and the right-of-way.	6. Improve public outreach, education, and warning systems	Preparedness & Emergency Response	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2024	High	1	0	1	0	1	0	1	0	0	0	0	0	0	0		
Stafford	Sta4	Initiate efforts to breach the Hydville Dam. Coordinate with CT DEEP.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants / CT DEEP	07/2020 - 06/2021	High	1	0	1	0	1	0	1	0	1	0	1	0	1	0		
Stafford	Sta5	Perform a study to identify preferred actions to take to provide sufficient egress and access to and from the main fire station downtown, addressing the issues created by the undermined bridge.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Town Operating Budget	07/2020 - 06/2021	High	1	0	0	0	1	0	1	0	1	0	1	0	1	0		
Stafford	Sta6	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
Stafford	Sta7	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0		
Stafford	Sta8	Revise Public Works personnel contracts to allow for the hiring of subcontractors during surge conditions.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Board of Selectmen	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	0	1	0	0	0	0	0	0	1	1	1	0	0	0		
Stafford	Sta9	Educate Town staff on detour protocols, and purchase more detour signage and traffic routing equipment.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	0	0	1	0	1	0	0	0	1	0	0	0	0	0		
Stafford	Sta10	Add language encouraging Low Impact Development and limiting impervious surfaces to the Zoning Regulations	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	0	1	1	0	1	0	0	0	1	1	1	0	1	0		
Stafford	Sta11	Explore possible sites on which to relocate the main fire station out of the floodplain.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	0	0	1	0	1	0	0	0	0	0	1	0	1	0		
Stafford	Sta12	Repair Staffordville and New City dams.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$50,000 - \$100,000	Grants / CT DEEP	07/2023 - 06/2024	Medium	1	0	1	1	1	0	1	0	1	1	1	1	1	0		
Stafford	Sta13	Coordinate with CT SHPO to conduct historic reserch	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0		
Stafford	Sta14	Relocate utilities along Main Street underground during expected road and roundabout rebuild in 2020.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$50,000 - \$100,000	Town Operating Budget / Grants	07/2023 - 06/2024	Low	1	0	1	0	1	1	1	1	1	1	1	1	1	0		
Suffield	Suf1	Develop a list of flood prone areas and share that list with police and fire.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	0	0	1	0	1	0	1	0	0	0	0	0	0	0		

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Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria															
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	Total STAPLEE Score	
Suffield	Suf2	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	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8	
Suffield	Suf3	Preemptively clean debris out of select drainage structures before and during heavy storm events, particularly on Susan & Diane Lanes.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	\$10,000 - \$25,000	Town Operating Budget	01/2019 - 12/2020	High	0	0	1	0	1	1	1	0	0	0	1	0	1	0	6	
Suffield	Suf4	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Suffield	Suf5	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Suffield	Suf6	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6	
Suffield	Suf7	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2024	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Suffield	Suf8	Conduct a study to identify the worst areas of surface flooding and develop methods to alleviate the problem areas.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants / DEMHS	07/2021 - 06/2023	Medium	1	0	0	0	1	0	0	0	1	0	1	0	1	0	6	
Suffield	Suf9	Encourage low impact development techniques in new development in accordance with the POCOD.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	1	0	1	0	0	1	1	1	1	0	1	0	1	0	6	
Suffield	Suf10	Encourage property owners to refrain from dumping debris into stream channels and drainage culverts.	6. Improve public outreach, education, and warning systems	Education & Awareness	Public Works	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	0	0	1	0	0	1	0	1	1	0	0	0	1	0	2	
Suffield	Suf11	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4	
Tolland	Tol1	Develop a list of private contractors that can be utilized for emergency tree service work.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	0	1	1	1	1	0	1	0	1	1	1	0	0	0	3	
Tolland	Tol2	Develop a system for servicing/dredging fire ponds and dry hydrants periodically.	7. Improve the emergency response capabilities of the region and its communities	Prevention	Fire Department	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	0	0	1	0	1	0	1	0	1	0	1	0	1	0	8	
Tolland	Tol3	Update list of special needs populations to include 37 new units and any other new additions to the population.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7	
Tolland	Tol4	Develop a plan to increase municipal sheltering capacity to meet 7% requirement.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2019 - 06/2021	High	1	0	1	0	1	0	1	0	1	0	0	0	0	0	6	

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Benefit or Cost = 1

Neutral = 0

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Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Tolland	Tol5	Hire engineer to repair or replace center pier on Willimantic River.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2023	High	1	0	1	0	1	0	1	0	1	1	1	1	1	0		
Tolland	Tol6	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	07/2019 - 06/2022	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
Tolland	Tol7	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works & Planning	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
Tolland	Tol8	Update bridge and culvert sizing requirements to allow for passage of larger storm events: utilize the Cornell NRCC Extreme Rainfall figures found at http://precip.eas.cornell.edu/ .	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	0	1	1	0	1	1	0	0	1	0	1	0	1	0		
Tolland	Tol9	Add a link to the Emergency Management page on the Town Website with information about the National Flood Insurance Program.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	1	1	0	1	0	1	0	0	0		
Tolland	Tol10	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0		
Tolland	Tol11	Conduct annual outreach campaign to educate residents on signing up for emergency alerts, building and maintaining disaster plans and kits, and improving their disaster readiness. Include notifications on the Town website.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2024	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
Tolland	Tol12	Analyze and make recommendations to improve Gehring Road crossing of Spice Brook.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants	07/2021 - 06/2023	Medium	1	0	1	0	1	0	0	0	1	0	1	0	1	0		
Tolland	Tol13	Analyze and make recommendations to improve natural and artificial drainage in Industrial Park and Gages Brook.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works & Planning	\$25,000 - \$50,000	Town Operating Budget / Grants / CT DEEP	07/2021 - 06/2023	Medium	1	0	1	0	1	0	0	0	1	0	1	0	1	0		
Tolland	Tol14	Implement recommendations to improve Gehring Road crossing of Spice Brook.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2024	Medium	1	0	1	0	1	0	1	0	1	1	1	1	1	0		
Tolland	Tol15	Send out email blasts with information about the National Flood Insurance Program.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	1	0	1	0	1	1	1	1	0	0	1	0	0	0		
Tolland	Tol16	Educate commissioners, developers and the community on Low Impact Development requirements on an ongoing basis.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Low	1	0	1	1	1	1	1	1	0	0	0	0	1	0		

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Community	Action or Strategy Number	Mitigation Actions and Strategies for CRCOG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Tolland	Tol17	Seek Certification within the Sustainable CT program and make progress with the hazard mitigation goals associated with SustainableCT certified actions.	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	1	0		
Tolland	Tol18	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0		
Tolland	Tol19	Develop a scope of work for making recommended improvements, developed as a separate action, to the Industrial Park and Gages Brook.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2021 - 06/2023	Low	1	0	1	0	1	1	0	1	1	0	1	0	1	0		
Tolland	Tol20	Explore creation of a new EOC with improved capabilities and technologies	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2021 - 06/2023	low	1	0	1	0	1	1	0	1	0	0	0	0	0	0		
Tolland	Tol21	Identify private bridges that may need repair, and reach out to owners to determine best means of evaluating and implementing necessary upgrades. Because this is expected to be a long term, multi-year project, for the current Plan period, the action to be taken is to develop a scope of work for the project.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$25,000 - \$50,000	Town Operating Budget / Grants	07/2023 - 06/2024	Low	1	0	1	1	1	1	0	1	1	0	1	0	1	0		
Vernon	Ver1	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	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0		
Vernon	Ver2	Develop a scope of work and a request for proposals to study improvements to the Manchester Flats area, around Route 83 and Welles and Main Streets, to alleviate flooding issues.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	1	0	1	0	1	0	1	0	1	0	1	0	1	0		
Vernon	Ver3	Develop a scope of work and a request for proposals to study improvements to Frederick Road to alleviate flooding issues.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	1	0	1	0	1	0	1	0	1	0	1	0	1	0		
Vernon	Ver4	Complete upgrades to the generators at the Town Hall Annex and Parks & Recreation Facility	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Town Operating Budget / Grants	07/2020 - 06/2021	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0		
Vernon	Ver5	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
Vernon	Ver6	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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0		
Vernon	Ver7	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0		
Vernon	Ver8	Review water level monitoring systems that can provide real-time data and alerts to inform critical decision making to identify those appropriate for the Town. Explore grant funding options	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	0	0	1	0	1	0	0	0	0	0	0	0	0	0		

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										Weighted STAPLEE Criteria														Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	
Vernon	Ver9	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2
Vernon	Ver10	Evaluate the costs and benefits of joining the FEMA Community Rating System.	9. Minimize the economic impact of hazard damages	Property Protection	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	1	0	1	0	1	1	1	1	0	0	1	0	0	0	5
Vernon	Ver11	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4
Vernon	Ver12	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	Town Operating Budget / CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0	3
Vernon	Ver13	Pursue grants to purchase portable generators and modify buildings for hook-up.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$50,000 - \$100,000	Grants	07/2023 - 06/2024	Low	1	0	1	0	1	1	1	1	0	0	1	0	0	0	5
West Hartford	WH1	Develop a prioritized list of emergency generator acquisition, upgrade, or maintenance needs.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6
West Hartford	WH2	Incorporate Low Impact Development requirements into the Subdivision and Zoning Regulations.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	1	1	0	1	0	1	1	1	1	1	0	1	0	6
West Hartford	WH3	Establish pet sheltering alternatives.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / Grants	01/2019 - 12/2020	High	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7
West Hartford	WH4	Increase the ability of residents and visitors to safely shelter in place and when necessary, evacuate to safer locations, through education, trainings, and warnings.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / Grants / DEMHS	01/2019 - 12/2020	High	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7
West Hartford	WH5	Improve transportation access for residents and visitors to emergency shelters.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / Grants / DEMHS	01/2019 - 12/2020	High	1	0	1	0	1	0	1	0	0	0	0	0	0	0	5
West Hartford	WH6	Determine sheltering supplies needs and increase supplies if needed (cots, water, food, etc.).	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$25,000 - \$50,000	Town Operating Budget / Grants / DEMHS	07/2020 - 06/2021	High	0	0	1	0	1	0	1	0	0	0	0	0	0	0	4
West Hartford	WH7	Complete the North Branch Trout Brook flood study.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Public Works	\$50,000 - \$100,000	Grants	07/2021 - 06/2022	High	1	0	0	0	1	0	1	0	1	0	1	0	1	0	7
West Hartford	WH8	Implement needed improvements to the Emergency Operations Center to withstand high wind and other natural and manmade disasters.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Emergency Management	More than \$100,000	Grants / DEMHS	07/2022 - 06/2023	High	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
West Hartford	WH9	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7
West Hartford	WH10	Define a set of actions to be taken by the Town to increase its Community Rating System rating by at least one tier.	9. Minimize the economic impact of hazard damages	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

Technical Economic Factors are double-weighted.

										Weighted STAPLEE Criteria																Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CRCOG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
West Hartford	WH11	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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7		
West Hartford	WH12	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6		
West Hartford	WH13	Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Property Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	0	0	1	0	1	1	0	0	0	0	1	0	0	0	4		
West Hartford	WH14	Develop a list of local resources, including non-profits, volunteers, and gas-stations and grocery stores with emergency generators, to distribute to residents prior to forecast hazard events.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7		
West Hartford	WH15	Provide specific incident action plan development training to positions and functions of EOC representatives.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / Grants / DEMHS	07/2020 - 06/2022	Medium	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3		
West Hartford	WH16	Provide Incident Command training to all personnel for position and function.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / Grants / DEMHS	01/2020 - 12/2022	Medium	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3		
West Hartford	WH17	Provide shelter management training to all personnel for position and function.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / Grants / DEMHS	01/2020 - 12/2022	Medium	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3		
West Hartford	WH18	Explore feasibility and cost/benefit balance of developing a microgrid for the Town Hall and Police Department.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	\$10,000 - \$25,000	Town Operating Budget / Grants / CT DEEP	01/2020 - 12/2022	Medium	0	0	0	0	1	0	0	0	0	0	1	0	1	0	4		
West Hartford	WH19	Construct a new fueling facility for municipal vehicles.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	More than \$100,000	Grants	07/2022 - 06/2024	Medium	0	0	1	0	1	0	0	0	0	0	1	1	0	0	3		
West Hartford	WH29	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2		
West Hartford	WH21	Coordinate with CT SHPO to conduct outreach to	8. Ensure community character and social equity are addressed in mitigation activities	Education & Awareness	Planning, in coordination with SHPO	\$0 - \$10,000	SHPO	01/2021 - 12/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4		
West Hartford	WH22	Make progress with the hazard mitigation goals associated with SustainableCT certified actions.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	1	0	5		

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Weighted STAPLEE Criteria																Total STAPLEE Score
										Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
West Hartford	WH23	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	Town Operating Budget / CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0	3		
West Hartford	WH24	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4		
West Hartford	WH25	Send property owners along streams a mailer with information about ordinances against, and dangers of, dumping and placing obstructions into streams.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning	\$10,000 - \$25,000	Town Operating Budget	01/2021 - 12/2023	Low	1	1	1	0	0	1	1	1	1	0	0	0	1	0	3		
West Hartford	WH26	Perform a Repetitive Loss Area Analysis (RLAA).	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Planning	\$50,000 - \$100,000	Town Operating Budget / Grants / DEMHS	07/2023 - 06/2024	Low	1	0	0	0	1	1	0	1	1	0	1	0	1	0	4		
West Hartford	WH27	Replace undersized and/or degraded culverts on Trout Brook.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2023 - 06/2024	Low	1	0	1	0	1	1	1	1	1	1	1	1	1	0	4		
West Hartford	WH28	Stabilize unstable streambanks along Trout Brook.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2023 - 06/2024	Low	1	0	1	0	1	1	1	1	1	1	1	1	1	0	4		
West Hartford	WH29	Replace the Fern Street Bridge over Trout Brook to ensure continued operation during future emergency events.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2023 - 06/2024	Low	1	0	1	0	1	1	1	1	1	1	1	1	1	0	4		
Wethersfield	Wet1	Identify strategies for making expansion of capacity for public works trucks and equipment storage more achievable.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	0	0	1	0	1	0	1	0	0	0	0	1	0	0	2		
Wethersfield	Wet2	Identify strategies for making replacement or enlargement of sand/salt storage facility more achievable. Track damages to sand/salt storage facility so that a BCA can be completed.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	0	0	1	0	1	0	1	0	0	0	1	0	0	0	6		
Wethersfield	Wet3	Develop a long-range plan for expansion of the Public Works building capacity and relocation outside of flood zone.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2019 - 06/2021	High	0	0	1	0	1	0	1	0	0	0	1	1	0	0	4		
Wethersfield	Wet4	Repair washout around the east abutment for Jenson Dam at 45 Highland Street.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$50,000 - \$100,000	Grants	07/2021 - 06/2022	High	1	0	1	0	1	0	1	0	1	1	1	1	1	0	6		
Wethersfield	Wet5	Add a double catch basin at 222 Ridge Road to address road flooding, which overflows and floods downstream homes in Ridge Crest Place (requires CCTV inspection first).	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2023	High	1	0	1	0	1	0	1	0	1	0	1	1	1	0	7		
Wethersfield	Wet6	Perform the necessary repairs to the spillway at Wintergreen Woods.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2023	High	1	0	1	0	1	0	1	0	1	1	1	1	1	0	6		
Wethersfield	Wet7	Reconstruct the earthen berm at Spring Street Skate Pond Dam, perform emergency spillway and outlet improvements (compare to Dam Inspection Report).	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2023	High	1	0	1	0	1	0	1	0	1	1	1	1	1	0	6		
Wethersfield	Wet8	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7		

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Benefit or Cost = 1

Neutral = 0

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Weighted STAPLEE Criteria																				
Community	Action or Strategy Number	Mitigation Actions and Strategies for CRCOG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit
Wethersfield	Wet9	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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	1	0
Wethersfield	Wet10	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	1	0	1	0
Wethersfield	Wet11	Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Property Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	0	0	1	0	1	1	0	0	0	1	0
Wethersfield	Wet12	Complete an analysis of costs and benefits of joining the FEMA Community Rating System. If benefits outweigh the costs, perform outreach to gain public and stakeholder support for joining FEMA CRS.	9. Minimize the economic impact of hazard damages	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2020 - 06/2022	Medium	1	0	1	0	1	0	0	0	0	1	0
Wethersfield	Wet13	Dredge sediment from Griswold Pond to improve the water quality.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$25,000 - \$50,000	Grants	01/2021 - 12/2023	Medium	1	0	0	1	1	0	1	0	1	1	0
Wethersfield	Wet14	Olsen House Ditch improvements: design and construct a 24" RCP to replace an open rip rap ditch and backfill the area to eliminate the need for guiderail. Perform design and permitting for Bell Pond dredging and reconstruction of Bell Pond Dam spillway with miscellaneous improvements to improve water quality and protect downstream properties (Moderate Hazard Class Dam per DEEP).	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$50,000 - \$100,000	Grants	07/2023 - 06/2024	Medium	1	0	1	0	1	0	1	1	1	1	0
Wethersfield	Wet15	Olsen House Ditch improvements: design and construct a 24" RCP to replace an open rip rap ditch and backfill the area to eliminate the need for guiderail. Perform design and permitting for Bell Pond dredging and reconstruction of Bell Pond Dam spillway with miscellaneous improvements to improve water quality and protect downstream properties (Moderate Hazard Class Dam per DEEP).	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$50,000 - \$100,000	Grants	07/2023 - 06/2024	Medium	1	0	1	0	1	0	1	1	1	0	0
Wethersfield	Wet16	Complete Culvert Replacements listed in the CIP: Carriage Hill Drive, Coppermill Road, Fox Hill Road, Highland Street, and Lantern Lane.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2024	Medium	1	0	1	0	1	0	1	1	1	1	0
Wethersfield	Wet17	Complete extension of storm drainage (piping & CBs) in Nott St and reconstructing a portion of Heather Dr with new underdrains to address persistent icing problem.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2024	Medium	1	0	1	0	1	0	1	0	1	1	0
Wethersfield	Wet18	Install 2 CBs and piping at intersection of Timber Trail with Cornish Rd to address issues with flooding homes on Timber Trail. Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2024	Medium	1	0	1	0	1	0	1	0	1	1	0
Wethersfield	Wet19	Identify additional space for snow storage and disposal.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	0	0	0
Wethersfield	Wet20	Identify additional space for snow storage and disposal.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Public Works	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	0	0	1	0	1	1	0	1	1	0	0
										Total STAPLEE Score										

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Weighted STAPLEE Criteria															Total STAPLEE Score
										Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Wethersfield	Wet21	Seek Certification within the Sustainable CT program and make progress with the hazard mitigation goals associated with SustainableCT certified actions.	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2022	Low	1	0	1	0	0	1	1	1	0	0	1	0	1	0	5	
Wethersfield	Wet22	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	Town Operating Budget / CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0	3	
Wethersfield	Wet23	Coordinate with CT SHPO to conduct historic rescue excavation.	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4	
Wethersfield	Wet24	Install an underdrain on Olney Road behind eastern curb line to protect road base and alleviate flooding.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	\$50,000 - \$100,000	Grants	07/2023 - 06/2024	Low	1	0	1	0	1	1	1	1	1	0	1	1	1	0	5	
Wethersfield	Wet25	Perform actions listed in the 1995 Town Wide Drainage Study as listed in the CIP: Goff Road Detention Pond Construction, Sunset Boulevard, Surrey Drive Swale, Tanglewood construction.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Structural Projects	Public Works	More than \$100,000	Grants	07/2023 - 06/2024	Low	1	0	1	0	1	1	1	1	1	0	1	1	1	0	5	
Willington	Wil1	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.	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8	
Willington	Wil2	Petition FEMA to conduct a detailed flood study of the Willimantic River near Route 74, where currently it is an unnumbered A zone.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Prevention	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	1	0	0	1	1	0	1	0	1	0	1	0	1	0	5	
Willington	Wil3	Encourage ConnDOT to improve drainage culverts and road grading on Route 320 to prevent periodic flooding and icing at the intersection of Hancock Road, at the culvert crossing of Ruby Pond discharge south of the Truck Stop facility just off I-84, at the culvert just south of the Town bus parking area, at the wetland beaver areas north of Cisar Road and north of Eldredge and Pinney Hill Roads, and at the culvert crossing at the north side of the Cosgrove Road intersection.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	1	0	1	1	1	0	1	0	0	1	1	0	1	0	5	
Willington	Wil4	Install generators at Town Hall and Public Works.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2019 - 06/2021	High	1	0	1	0	1	1	1	0	0	0	1	0	0	0	6	
Willington	Wil5	Perform a town-wide drainage study to identify and prioritize locations requiring increased drainage capacity or other drainage-flooding mitigation measures.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$50,000 - \$100,000	Grants	07/2021 - 06/2022	High	1	0	0	0	1	0	1	0	1	0	1	0	1	0	7	
Willington	Wil6	Improve drainage culverts and install new catch basins and drainage systems along Village Hill Road and Schofield Road to reduce flooding and icing problems.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Grants	07/2022 - 06/2023	High	1	0	1	0	1	0	1	0	1	0	1	1	1	0	7	
Willington	Wil7	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

Technical Economic Factors are double-weighted.

										Weighted STAPLEE Criteria															Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCOG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost		
Willington	Wil8	Coordinate with NEMO and CROCOG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	1	0	1	0	0	0	0	0	1	0	1	0	7	
Willington	Wil9	Add a requirement to subdivision regulations that new developments construct underground cisterns for firefighting.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	0	1	1	0	1	0	0	1	1	1	1	0	1	0	4	
Willington	Wil10	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0	6	
Willington	Wil11	Designate and prepare a debris management area.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2020 - 06/2022	Medium	0	0	1	0	1	0	0	0	1	0	0	0	1	0	5	
Willington	Wil12	Identify or hire a municipal staff member responsible for regularly updating the Town's website and Facebook page with hazard-relevant information.	6. Improve public outreach, education, and warning systems	Education & Awareness	Administration	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	1	0	1	0	1	0	1	0	1	0	1	0	0	0	8	
Willington	Wil13	Review the LID Manual developed by the Northwest Hills Council of Governments and determine whether LID can be incorporated locally to increase rural resiliency.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$10,000 - \$25,000	Town Operating Budget	07/2021 - 06/2022	Medium	1	0	1	0	0	0	0	0	0	0	1	0	1	0	6	
Willington	Wil14	Develop a GIS application to assist town personnel in the event of an emergency or natural disaster, including mitigation plan maps as layers.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Planning	\$25,000 - \$50,000	Town Operating Budget / Grants / DEMHS	07/2021 - 06/2023	Medium	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3	
Willington	Wil15	Identify specific properties located in FEMA flood zone; including the identification of losses that occurred in 2005, 1995, and 1938.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$25,000 - \$50,000	Town Operating Budget / Grants / DEMHS	07/2021 - 06/2023	Medium	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3	
Willington	Wil16	Add 6 additional dry hydrants near wildfire susceptible areas of State forest and municipal woodlands within the central portion of the Town.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Fire Department	\$50,000 - \$100,000	Grants / CT DEEP	01/2023 - 12/2024	Medium	0	0	1	0	0	0	0	0	1	0	1	0	1	0	6	
Willington	Wil17	Re-publish all Town ordinances and regulations on Selectmen the Town's website, particularly those dealing with hazard mitigation for storms, flood events, and other natural hazards or disasters.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	1	0	1	0	1	1	0	1	1	0	0	0	0	0	3	
Willington	Wil18	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4	
Willington	Wil19	Use "right tree, right place" model to educate municipal staff, contractors, and the public about planting trees.	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.	Education & Awareness	Public Works	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2021 - 06/2023	Low	1	0	1	1	1	1	1	1	0	0	0	0	1	0	2	
Willington	Wil20	Perform a study of municipal buildings to determine their snow load ratings.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Preparedness & Emergency Response	Public Works	\$50,000 - \$100,000	Town Operating Budget / Grants	07/2023 - 06/2024	Low	1	0	0	0	1	1	0	1	1	0	1	0	1	0	4	

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Weighted STAPLEE Criteria														Total STAPLEE Score
										Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	
Windsor	Win1	Require "Inspection & Maintenance Agreement" recorded on land records for private developments. Conduct outreach on ongoing maintenance with respect to flooding, wind, freezing and other hazards. Use town web page for information in addition to social media.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Engineering	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	0	1	1	0	1	1	0	1	0	0	0	0	0	0	3
Windsor	Win2	Conduct outreach on ongoing maintenance with respect to flooding, wind, freezing and other hazards. Use town web page for information in addition to social media.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2020	High	1	0	1	0	1	0	1	0	1	0	0	0	0	0	6
Windsor	Win3	Replace the Town's emergency services communications system.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Safety Services	More than \$100,000	Town Capital Improvement Budget	07/2022 - 06/2023	High	1	0	1	0	1	0	1	0	1	0	1	1	0	0	6
Windsor	Win4	Identify, prioritize and implement local road improvements on an annual basis.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	1	0	1	0	1	1	0	1	1	1	1	1	0	0	4
Windsor	Win5	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	07/2019 - 06/2020	Medium	1	0	0	0	1	0	0	0	0	0	1	0	1	0	5
Windsor	Win6	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	1	0	0	0	1	0	0	0	0	0	1	0	1	0	5
Windsor	Win7	Increase sheltering capacity by identifying additional shelter facilities. Consider looking at new shelter at 330 Windsor Ave.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2023	Medium	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
Windsor	Win8	Increase training for hazard response, e.g. National Incident Management System (NIMS). Include fire, police, EOC and schools.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$0 - \$10,000	Town Operating Budget / Grants / DEMHS	07/2020 - 06/2023	Medium	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3
Windsor	Win9	Review and revise, as necessary, zoning regulations to ensure developers maintain stormwater retention capacity in compliance with MS4 zoning requirements.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Engineering	\$10,000 - \$25,000	Town Operating Budget / Grants / CT DEEP	07/2019 - 06/2021	Medium	0	1	1	0	1	0	0	1	1	1	1	0	1	0	4
Windsor	Win10	Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Property Protection	Public Works	\$10,000 - \$25,000	DEMHS / MDC	07/2020 - 06/2022	Medium	0	0	1	0	1	1	0	0	0	0	1	0	0	0	4
Windsor	Win11	Develop and implement maintenance plan for all identified stormwater facilities.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	\$50,000 - \$100,000	Town Operating Budget / Grants	07/2023 - 06/2024	Medium	0	0	1	0	1	0	0	0	0	0	0	0	1	0	4
Windsor	Win12	Identify and develop a secondary emergency operations center.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	More than \$100,000	Grants / DEMHS	07/2021 - 06/2023	Medium	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3
Windsor	Win13	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Engineering	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Low	0	0	1	0	1	1	0	1	1	0	1	0	0	0	4

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria														
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost	Total STAPLEE Score
Windsor	Win14	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2
Windsor	Win15	Complete an analysis of costs and benefits of joining the FEMA Community Rating System.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	07/2021 - 06/2023	Low	1	0	1	0	1	1	1	1	0	0	1	0	0	0	5
Windsor	Win16	Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$10,000 - \$25,000	Town Operating Budget / CT DEEP / DEMHS	07/2021 - 06/2023	Low	0	1	1	0	1	1	0	1	1	0	1	0	0	0	3
Windsor	Win17	Perform a flood risk assessment of the Mill, Meadow, and Deckers Brooks watersheds. Consider flood extents from the 1984, 2003, and 2005 events.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Property Protection	Engineering	\$25,000 - \$50,000	Grants	07/2023 - 06/2024	Low	1	0	0	0	1	1	0	1	1	0	1	0	1	0	4
Windsor	Win18	Develop and implement maintenance plan for River Street retaining wall.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$50,000 - \$100,000	Town Operating Budget / Grants	07/2023 - 06/2024	Low	1	0	1	0	1	1	1	1	1	1	1	0	0	0	5
Windsor Locks	WL1	Maintain trash rack at Chestnut and Main Streets.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	0	0	1	0	1	1	1	0	1	0	0	0	1	0	5
Windsor Locks	WL2	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.	4. Increase the use of natural, “green,” or “soft” hazard mitigation measures, such as open space preservation and green infrastructure.	Natural Resources Protection	Planning	\$0 - \$10,000	Town Operating Budget	01/2019 - 12/2019	High	1	0	1	0	1	0	1	0	0	0	1	0	1	0	8
Windsor Locks	WL3	Address plumbing issues at Waterworks Property, particularly exposed and eroded pipe.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2021	High	0	0	1	0	1	0	1	0	1	0	1	0	0	0	7
Windsor Locks	WL4	Develop designs and a cost-estimate for elevation of the fueling tank at the 1 Stanton Road DPW site; tank is currently underground and at-risk of being impacted by flooding.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	\$10,000 - \$25,000	Town Operating Budget / Grants	07/2019 - 06/2021	High	0	0	1	0	1	0	1	0	1	1	1	0	1	0	7
Windsor Locks	WL5	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.	6. Improve public outreach, education, and warning systems	Education & Awareness	Planning, in coordination with DEEP	\$0 - \$10,000	Materials & Resources Provided by CT DEEP	01/2019 - 12/2019	Medium	1	0	0	0	1	0	0	0	0	0	1	0	1	0	5
Windsor Locks	WL6	Coordinate with NEMO and CROG 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.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Prevention	Public Works	\$0 - \$10,000	Town Operating Budget	01/2020 - 12/2020	Medium	1	0	0	0	1	0	0	0	0	0	1	0	1	0	5

Notes on STAPLEE Criteria:

Benefit or Cost = 1

Neutral = 0

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										Weighted STAPLEE Criteria																Total STAPLEE Score
Community	Action or Strategy Number	Mitigation Actions and Strategies for CROCG Communities	Regionalized Municipal Goal	FEMA Strategy Category	Responsible Department	Approximate Cost	Potential Funding Sources	Timeframe	Community Priority	Social Benefit	Social Cost	Technical Benefit	Technical Cost	Administrative Benefit	Administrative Cost	Political Benefit	Political Cost	Legal Benefit	Legal Cost	Economic Benefit	Economic Cost	Environmental Benefit	Environmental Cost			
Windsor Locks	WL7	Review land use regulations (other than the recently updated flood regulations) to determine their effectiveness at minimizing natural hazard exposure, and amend as necessary.	2. Ensure Municipal Codes and Regulations support hazard mitigation	Prevention	Planning	\$0 - \$10,000	Town Operating Budget	07/2020 - 06/2021	Medium	0	1	1	0	1	0	0	1	1	1	1	0	1	0			
Windsor Locks	WL8	Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies	Education & Awareness	Planning	\$0 - \$10,000	Town Operating Budget	07/2019 - 06/2024	Medium	0	0	1	0	1	0	0	0	1	0	1	0	0	0			
Windsor Locks	WL9	Work with MDC to identify potential hazard mitigation actions for MDC facilities, and list those actions in the next HMP Update.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Property Protection	Public Works	\$10,000 - \$25,000	Town Operating Budget / DEMHS	07/2020 - 06/2022	Medium	0	0	1	0	1	1	0	0	0	0	1	0	0	0			
Windsor Locks	WL10	Develop a list of local resources, including non-profits, volunteers, and gas-stations and grocery stores with emergency generators, to distribute to residents prior to forecast hazard events.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	1	0	1	0	1	0	1	0	0	0	1	0	0	0			
Windsor Locks	WL11	Add generator to South Elementary and add natural gas to Public Safety Complex.	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget / DEMHS	01/2020 - 12/2022	Medium	1	0	1	0	1	1	1	0	0	0	1	0	0	0			
Windsor Locks	WL12	Conduct annual outreach campaign to educate residents on signing up for emergency alerts, building and maintaining disaster plans and kits, and improving their disaster readiness.	7. Improve the emergency response capabilities of the region and its communities	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2024	Medium	1	0	0	0	1	1	0	0	1	0	1	0	0	0			
Windsor Locks	WL13	Identify emergency response needs and possible	7. Improve the emergency response capabilities of the region and its communities	Preparedness & Emergency Response	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2020 - 06/2022	Medium	1	0	1	0	1	1	1	0	0	0	1	0	0	0			
Windsor Locks	WL14	Address drainage issues on Papermill Brook at Center Street/ Whitton Street.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Town Operating Budget / Grants / DEMHS	07/2022 - 06/2024	Medium	1	0	1	0	1	0	1	0	1	0	1	1	1	0			
Windsor Locks	WL15	Address drainage issues on Kettle Brook at Middle School on Center Street in conjunction with homeowner.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Town Operating Budget / Grants / DEMHS	07/2022 - 06/2024	Medium	1	0	1	0	1	0	1	0	1	0	1	1	1	0			
Windsor Locks	WL16	Address drainage issues on Industrial Road.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Town Operating Budget / Grants / DEMHS	07/2022 - 06/2024	Medium	1	0	1	0	1	0	1	0	1	0	1	1	1	0			
Windsor Locks	WL17	Address drainage issues at West and Spring Streets.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Town Operating Budget / Grants / DEMHS	07/2022 - 06/2024	Medium	1	0	1	0	1	0	1	0	1	0	1	1	1	0			

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Windsor Locks	WL18	Address drainage issues in the Smally Road area.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Town Operating Budget / Grants / DEMHS	07/2022 - 06/2024	Medium	1	0	1	0	1	0	1	0	1	0	1	1	1	0	7
Windsor Locks	WL19	Address drainage issues on Bristol Rd.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Town Operating Budget / Grants / DEMHS	07/2022 - 06/2024	Medium	1	0	1	0	1	0	1	0	1	0	1	1	1	0	7
Windsor Locks	WL20	Address drainage issues at Dibble Hollow & Bel Air Circle.	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Town Operating Budget / Grants / DEMHS	07/2022 - 06/2024	Medium	1	0	1	0	1	0	1	0	1	0	1	1	1	0	7
Windsor Locks	WL21	Address drainage issues at Gaylord and Lowndes Drive	5. Improve the resilience of local and regional utilities and infrastructure using strategies including adaptation, hardening, and creating redundancies.	Structural Projects	Public Works	More than \$100,000	Town Operating Budget / Grants / DEMHS	07/2022 - 06/2024	Medium	1	0	1	0	1	0	1	0	1	0	1	1	1	0	7
Windsor Locks	WL22	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	1. Minimize the impact of natural hazards on physical buildings and infrastructure	Property Protection	Planning	\$0 - \$10,000	Town Operating Budget / DEMHS	07/2021 - 06/2022	Low	1	1	1	0	0	1	1	1	1	0	0	0	0	0	2
Windsor Locks	WL23	Work with school systems to conduct outreach using Everbridge and Parent Link.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$0 - \$10,000	Town Operating Budget	01/2021 - 12/2022	Low	1	0	0	0	1	1	0	1	1	0	1	0	0	0	3
Windsor Locks	WL24	Coordinate with CT SHPO to conduct historic resc	8. Ensure community character and social equity are addressed in mitigation activities	Property Protection	Planning, in coordination with SHPO	\$10,000 - \$25,000	SHPO	07/2021 - 06/2023	Low	1	0	1	0	0	1	1	1	0	0	1	0	0	0	4
Windsor Locks	WL25	Conduct natural hazard education outreach at least once annually using social media, occasional mailings, and town events.	6. Improve public outreach, education, and warning systems	Education & Awareness	Emergency Management	\$10,000 - \$25,000	Town Operating Budget	07/2019 - 06/2024	Low	1	0	0	0	1	1	1	1	1	0	0	0	0	0	2

Appendix F

Narrative Description of Prior Planning Processes

Planning Process for Previous Hazard Mitigation Plans

The narrative of the planning processes for the previous Hazard Mitigation Plans that cover current CROCOG communities have been preserved here to memorialize the detailed steps taken and the consensus reached. These narratives are provided below.

Planning Process for the 2014 CROCOG Natural Hazard Mitigation Plan Update

The update planning process began in early 2012 when the Federal Emergency Management Agency (FEMA) awarded the Capitol Region Council of Governments (CROCOG) a Pre-Disaster Mitigation Planning Grant to update its multi-jurisdiction natural hazard mitigation plan. This Plan Update was developed in collaboration with the Capitol Region Emergency Planning Commission (CREPC), the Region's 30 municipalities and the Department of Energy and Environmental Protection (CT DEEP). A sub-committee of CREPC, ESF-5 Emergency Management (which was expanded to reach out to additional officials from all 30 municipalities for the purposes of this update) served as the planning committee for the update process and provided guidance to the project. CROCOG staff coordinated efforts to involve officials from each town in efforts to update individual municipal sections. Finally, members of the public were provided opportunities to provide input throughout the development of the Plan Update.

Overall, the extensive and detailed 2014 CROCOG Natural Hazard Mitigation Plan Update planning process laid the groundwork for that undertaken in 2017-2018 toward the 2019 Natural Hazard Mitigation Plan Update.

Hazards Identification for 2014 Natural Hazard Mitigation Plan Update

In the development of the 2008 Pre-Disaster Natural Hazards Mitigation Plan, CROCOG staff proposed a list of the natural hazards to be addressed in the Plan based on the State Natural Hazard Plan; historical weather records from a variety of media sources, the United State Geological Survey, the National Weather Service and other agencies; and, from discussions with DEEP staff. The hazards were discussed with the CREPC planning sub-committee in late 2006, the Regional Planning Commission in early 2007, and officials from member municipalities in early 2007. The following hazards were agreed upon for inclusion in the Plan due to their likelihood to occur in, and/or their potential impacts, on the Region: dam failure, drought, floods, forest fires, severe winter storms, hurricanes and tornadoes/high winds. Several hazards were dismissed due to their low likelihood of occurrence or their minimal impacts on the Region, including avalanches, expansive soils, land subsidence, landslide, tsunamis, and volcanoes.

As the update to the 2008 plan was initiated, CROCOG staff researched natural hazards and major storm events impacting the Region and State in the last several years. In July 2012, the expanded CREPC ESF-5 planning committee met to reexamine the list of hazards impacting the Capitol Region. The committee agreed that the list of eight natural hazards identified in the 2008 Plan should continue to be considered the natural hazards addressed in the Plan Update. Committee members considered suggestions to

include ice jams, heat waves and solar flares among hazards to be addressed; however, there was not a consensus of the whole committee to include these in the Plan Update. The committee was also asked to rate the hazards for their significance and impact on the Region. Flooding ranked as the number one hazard of concern, followed closely by hurricanes and then by winter storms and tornados.

Data Collection and Analysis/Risk Assessment for 2014 Natural Hazard Mitigation Plan Update

As in the development of the 2008 Plan, CRCOG staff collected and analyzed the hazards and loss data for participating municipalities to reduce duplication of efforts and to provide a common ground for evaluating mitigation strategies. The data came from a wide variety of sources including FEMA, DEEP, the National Weather Service, regional newspapers, the United States Geological Survey, United States Census Bureau, municipalities and CRCOG's internal geographic information system as well as other resources. The data were used to evaluate natural disasters in terms of frequency, magnitude, areas of impact and economic loss.

The collected data were analyzed using the CRCOG's geographic information system software, specifically ESRI ArcMap 10, and HAZUS-MH. HAZUS-MH is loss estimation software developed by FEMA under contract with the National Institute of Building Sciences. This software works in conjunction with ESRI ArcMap 10 to perform complex spatial analyses necessary to estimate losses from earthquake, hurricanes and floods. While the 2008 Plan only incorporated the results from the hurricane model at the regional level because of difficulties in running the flood model, for this update, we were able to perform flood modeling at the municipal level for this update. CRCOG also ran the earthquake model at the regional level and hurricane model at the local level for the update.

Municipal and regional plans of conservation and development, municipal zoning and floodplain regulations, municipal budget and capital improvement program documents, and flood management studies were also reviewed during the course of the update.

Municipal Plans Review/Update for 2014 Natural Hazard Mitigation Plan Update

While the analysis of hazards was undertaken, CRCOG staff also led meetings with municipal officials to initiate updates to individual city and town plans. These meetings were held in each of the thirty municipalities and included local staff from a variety of departments including administration, planning, emergency management, police, fire, public health, sanitation, public works, engineering, information technologies, social services, human resources, boards of education, ambulance services, among others. In some towns citizens and elected officials also participated. Following these municipal meetings, CRCOG staff worked with the municipally designated staff contacts to incorporate the updates prepared by the municipalities. CRCOG staff conducted the following meetings locally with municipal officials to initiate the local update process:

Table 1: Planning Meetings with Local Officials

Municipality	Local Planning Meeting
Andover	April 23, 2013; 9:30 am; 1 attendee
Avon	October 22, 2012; 9:30 am; 12 attendees
Bloomfield	April 30, 2013; 10 am; 4 attendees
Bolton	February 22, 2013; 9am; 6 attendees
Canton	December 11, 2012; 9:30 am; 5 attendees
East Granby	April 30, 2013; 1pm; 2 attendees

Municipality	Local Planning Meeting
East Hartford	June 18, 2012; 9:30 am; 4 attendees
East Windsor	November 28, 2012; 1:30 pm; 10 attendees
Ellington	November 30, 2012; 9:30 am; 4 attendees
Enfield	December 11, 2012; 2 pm; 4 attendees
Farmington	November 5, 2012; 11:30 am; 3 attendees
Glastonbury	July 16, 2012; 1:30 pm; 10 attendees
Granby	December 19, 2012; 9:30 am; 9 attendees
Hartford	February 7, 2013; 10 am; 7 attendees
Hebron	February 27, 2013; 9 am; 12 attendees
Manchester	November 16, 2012; 10:30 am; 6 attendees
Marlborough	March 14, 2013; 1 pm; 9 attendees
Newington	February 28, 2013; 9 am; 4 attendees
Rocky Hill	March 15, 2013; 9:30 am; 9 attendees
Simsbury	November 19, 2012; 9:30am; 3 attendees
Somers	May 6, 2013; 9:30 am; 3 attendees
South Windsor	November 7, 2012; 1:30 pm; 12 attendees
Stafford	December 18, 2012; 9:30 am; 4 attendees
Suffield	April 25, 2013; 10 am; 3 attendees
Tolland	January 29, 2013; 9:30 am; 4 attendees
Vernon	April 26, 2013; 11 am; 12 attendees
West Hartford	January 18, 2013; 9:30 am; 7 attendees
Wethersfield	January 28, 2013; 1:30 pm; 5 attendees
Windsor	December 13, 2012; 9:30 am; 9 attendees
Windsor Locks	December 19, 2012; 1:30 pm; 8 attendees

Following the initial municipal meetings, local staff and officials worked to consider their communities' risks and vulnerabilities and update local mitigation strategies. Table 27 below summarizes the departments and functions of municipal representatives involved in the planning process in each community. Over 400 municipal officials and staff were involved in developing this plan update. These officials and staff included those representing the local administration such as town managers, financial directors, risk managers and human resources directors; elected officials such as mayors, first selectmen and selectmen; health and human services personnel such as health directors, human, social and senior services directors, as well as sanitarians; land use and development officials including planners, zoning and building officials, community and economic development directors; public safety personnel from police, fire, emergency management and ambulance services; public works personnel including engineering, highway, sanitation, water and sewer, and facilities management; other municipal staff such as GIS, IT, and parks and recreation staff; and public schools and boards of education representatives including superintendents and school facilities directors. The majority of towns involved officials from a range of municipal functions in the planning process and most included land use/development, public safety and public works staff.

Table 2: Municipal Representatives Involved in the Plan Update Process

Municipality	Administration	Elected Official	Health & Human Services	Land Use/ Development	Other	Public Safety	Public Works	Schools/Education
Andover		X						
Avon	X		X	X	X	X	X	
Bloomfield				X		X	X	
Bolton	X			X			X	
Canton	X			X		X	X	
East Granby		X		X				
East Hartford	X	X				X	X	
East Windsor		X	X	X		X	X	X
Ellington		X		X		X	X	
Enfield	X	X					X	
Farmington	X			X	X	X	X	X
Glastonbury	X		X	X	X	X	X	
Granby	X			X		X	X	X
Hartford			X	X		X	X	
Hebron	X	X		X		X	X	X
Manchester	X		X	X		X	X	
Marlborough	X	X		X		X	X	
Newington				X		X	X	
Rocky Hill	X			X		X	X	
Simsbury	X	X		X		X	X	
Somers		X					X	
South Windsor	X		X		X	X	X	X
Stafford		X		X			X	X
Suffield			X	X		X	X	
Tolland	X		X	X		X	X	X
Vernon	X	X		X		X	X	
West Hartford				X		X	X	X
Wethersfield				X		X	X	
Windsor	X		X	X		X	X	
Windsor Locks		X		X		X	X	X

Strategy Analysis and Prioritization for 2014 Natural Hazard Mitigation Plan Update

In the development of the 2008 Plan, CRCOG and municipal staff considered a broad array of mitigation strategies to achieve regional and municipal goals. Mitigation strategies were prioritized according to a variation of the STAPLEE evaluation process recommended in FEMA's *Developing the Mitigation Plan: Identifying Mitigation Actions and Implementation Strategies* (April 2003). Each strategy was scored according to the following criteria:

Criteria	Yes	No
1. Is the action socially acceptable (compatible with community values)?		
2. Is the strategy technically feasible?		
3. Does the community have the capacity to implement and maintain the action?		
4. Is there public support to implement and maintain the action?		
5. Does the community have the legal authority to implement the strategy?		
6. Is the action cost-effective?		
7. Is the strategy consistent with environmental policies and goals?		

1-2 yes = low priority

3-4 yes = medium priority

5-6 yes = high priority

During the Plan Update process, the STAPLEE method was again presented to municipal staff as a means for the municipalities to evaluate their current and proposed mitigation strategies. STAPLEE also formed the basis for the evaluation of the benefit-cost comparison of mitigation strategies.

In the reevaluation of the regional strategies proposed in 2008 and consideration of new regional mitigation strategies to undertake in the 2014-2019 Plan Update term, CRCOG sought the advice of the CREPC planning committee at a workshop held in February 2013. The meeting was attended by fourteen municipal officials from eleven member-towns as well as representatives from FEMA, CT DEMHS, the Metropolitan District Commission and officials from two neighboring communities. At this workshop, a status report on the 2008 regional mitigation goal, objectives and strategies/actions was presented. CRCOG staff presented a number of proposed revisions to current strategies and several additional strategies/actions based on our findings and discussions with local officials at the individual municipal meetings. These proposed revisions as well as proposed new strategies/actions were discussed with attendees. Attendees were then asked to reassess the priorities assigned to the 2008 strategies as well as those proposed for the new strategies. Attendees were asked to consider the following priority definitions in their assessments:

Priority Designations for Mitigation Strategies

- **High:** Accomplishment or substantial work toward accomplishing this strategy is critical and essential to achieving the goal and objective. Successful execution of this mitigation action is expected to make a substantial contribution to the advancement of our goal. A concerted effort should be made to undertake this action. This is a **“Must Do”** action.
- **Medium:** This mitigation strategy is clearly supportive of the goal and objective, however, it is not absolutely essential to their achievement. Successful implementation of this strategy is expected to make an incremental contribution to achieving the goal and objective. This is a **“Should Do”** action.
- **Low:** Although important and advisable, this mitigation strategy should be undertaken as long as it does not interfere with the accomplishment of higher priority strategies. This is a **“Would Be Nice to Do”** action.

Based on input from the committee members, revisions were made to one objective and to several mitigation, strategies and priorities. An additional mitigation strategy was also proposed and accepted by the planning committee. (Meeting Notes are included in the Appendix.)

During the public comment period on the draft plan, a request was made that CRCOG assist municipalities in outreach to those with functional needs. This request was brought to the planning committee which agreed to incorporate this as a new regional mitigation strategy. A high priority was assigned to this action based on similar priorities for related municipal actions and on its benefit-cost ratio.

Municipal officials were also asked to consider the above priority designations and STAPLEE criteria in the development of municipal strategies, both in the reassessment of existing strategic actions that would be continued and in the consideration of new initiatives to be addressed.

Public Participation for 2014 Natural Hazard Mitigation Plan Update

A variety of means were used to inform the public of the planning process and to gain public input on hazards, areas and issues of concern, and on mitigation measures. These specific outreach efforts are described below.

Reports and Presentations to Local Officials

These included regular reports to the CRCOG Policy Board and CREPC. Also, articles describing update activities and progress were included in the CRCOG Newsletters of October 2011, June 2013, and September and October 2013. Two presentations were made on March 15, 2012 to introduce the plan update project to municipal officials. The first presentation was made at the DEMHS Region 3 Citizens Preparedness & Emergency Management Seminar which had an audience of over 100 emergency management directors and chief municipal officers. The second was made at the bimonthly meeting of the Capitol Region Regional Planning Commission which had an audience of a dozen local planning and zoning commission members. Presentations on the draft Plan Update were also made to the Policy Board, to a subcommittee of CREPC, and to the Regional Planning Commission in September 2013. Policy Board, Regional Planning Commission, and CREPC meeting are public meetings with meeting notices, agendas, and minutes published on CRCOG’s website.

Web Pages

CRCOG's web page related to the Natural Hazards Mitigation Plan was updated throughout the planning process. Translations of CRCOG's web pages are available in over seventy languages. Additional links to the Natural Hazard Mitigation Plan page were also added from other web pages on CRCOG's site. Initial drafts of the Introduction, Hazards Evaluation and Regional Mitigation Strategies sections of this Plan Update were posted to the CRCOG website in February 2013. All municipal CEOs and the planning committee were notified of their availability. Revised drafts of the Introduction and Hazards Evaluation sections were posted in June 2013. The draft for public review was posted in September 2013.

Opinion Survey

A survey was developed to solicit input from the public on local mitigation activities and strategies. The survey was posted online on the CRCOG website in March 2013 and on the Get Ready Capitol Region website in April 2013. Paper survey forms were also brought to the sub-regional public workshops. Survey answers were tabulated by the respondents' hometown and results were shared with municipal officials for consideration in updating the municipal strategies sections. In all, 147 persons responded to the survey. Most respondents resided in one of the thirty municipalities participating in the Plan Update; however, eight lived outside the region. Most respondents (84%) live in single-family homes while 7% live in two or three family homes and 9% live in multifamily homes.

The survey asked participants to review a list of twenty-four mitigation measures and select the five most important measures their city or town should take, or continue to take, to prevent or lessen the impacts and damages caused by natural hazards. The table below lists the measures chosen in order of the frequency of their selection.

Table 3: Mitigation Measures by Frequency of Selection

Answer Options	Response Percent	Response Count
Use an emergency alert system to contact residents	49.3%	72
Provide back-up power to critical municipal facilities (police & fire stations, town hall, etc.)	43.8%	64
Support training of municipal staff and volunteers for emergency response	43.2%	63
Encourage local gas stations, pharmacies and grocery stores to install back-up generators	41.1%	60
Encourage residents to prepare family disaster plans and supply kits	40.4%	59
Trim or remove trees which could bring down power lines	39.0%	57
Ensure that roads are passable quickly after storms	36.3%	53
Undertake a public outreach program on emergency preparedness	32.2%	47
Contact and assist the elderly and others with special needs in the event of natural disasters	31.5%	46
Encourage utilities to consider burying existing electric and cable lines	19.9%	29
Ensure electric and cable lines are installed underground in new development	17.8%	26
Encourage nursing homes, senior housing, and group homes to install back-up generators	17.1%	25
Fix drainage problems that cause flooding on roads	16.4%	24

Answer Options	Response Percent	Response Count
Keep development out of flood plains and other environmentally sensitive areas	14.4%	21
Strengthen regulations to ensure development does not create drainage or ground water problems	11.0%	16
Improve local maps to better identify areas vulnerable to natural disasters	11.0%	16
Ensure that dams are routinely inspected and maintained	8.2%	12
Analyze potential snow load problems on local buildings	4.1%	6
Analyze the potential for forest and wild fires in the community	2.7%	4
Acquire and remove buildings that flood repeatedly	2.1%	3
Identify buildings and structures that might be susceptible to earthquake damage	2.1%	3
Encourage residents and businesses to purchase flood insurance	1.4%	2
Encourage residents and businesses to flood proof their buildings	0.7%	1
Enact a drought ordinance	0.0%	0

As can be seen, the strongest support among all respondents was expressed for using an emergency alert system to contact residents. In addition to the strong support shown for emergency communications, strong support was also expressed for measures which could help restore a sense of normalcy after a significant event. Over 40% of respondents expressed the need for back-up power for critical municipal facilities such as town halls, and police and fire stations, as well as for private facilities that provide important community functions such as gas stations, pharmacies, and grocery stores. Over a third of all respondents also urged municipalities to, “Ensure that roads are passable quickly after storms.”

Support was also expressed for ensuring that the public is prepared for natural disasters. Forty percent of respondents said municipalities should “Encourage residents to prepare family disaster plans and supply kits” and nearly a third wanted municipalities to “Undertake a public outreach program on emergency preparedness.” Support for preparation among those who need to respond in the event of natural disasters was also expressed among many respondents. Forty-three percent supported training of municipal staff and volunteers for emergency response.

Reduction in the potential for power outages was also heavily supported among respondents. Thirty-nine percent supported trimming or removing trees which could bring down power lines. Support was also shown for undertaking other measures which could reduce power outages. Nearly 20% wanted utilities to be encouraged to bury existing electric and cable lines and nearly 18% wanted to see electric and cable lines installed underground in new developments.

Concern for the needs of vulnerable populations was also strongly supported. Over thirty percent of respondents selected “Contact and assist the elderly and others with special needs in the event of natural disasters.” Also, 17% of respondents wanted municipalities to “Encourage nursing homes, senior housing, and group homes to install back-up generators.” Responses to the open-ended Question 7, which asked respondents to identify vulnerable areas, buildings, structures, and groups of people, showed overwhelming concern for vulnerable populations. At least 44 of the 68 responses to this question identified vulnerable people such as the elderly, disabled, and others with medical or special

needs in their communities. The need for sheltering pets was also expressed by a number of respondents to this question.

There was not as strong support expressed for a number of measures which could mitigate natural hazards. Less than one-sixth of respondents felt their municipality should fix drainage problems that cause flooding on roads; keep development out of environmentally sensitive areas; strengthen development regulations; improve mapping to identify vulnerable areas; or ensure that dams are inspected and maintained. Even fewer expressed a concern for analyzing snow loads on buildings or the potential for wild fires; acquiring and removing buildings subject to repeated flooding; identifying buildings susceptible to earthquake damage; or encouraging residents and businesses to purchase flood insurance or flood proof their buildings. No one expressed a need for their municipality to consider enacting a drought ordinance.

Experiences over the past few years with prolonged power outages and blocked roads due to Storms Irene, Alfred, and Sandy, as well as the Blizzard of February 2013, colored the survey takers responses. Also, the lack of recent widespread experience locally with drought, wild fire, and earthquakes influenced responders' choices. However, the perceived lack of support for some measures should also be tempered by the fact that survey takers were limited to selecting only five of 24 listed measures. This limitation required responders to prioritize measures without the ability to indicate a ranking among the various measures.

Survey respondents were also given the opportunity to identify additional measures not included in the list of twenty-four measures or to highlight additional choices from the list they were not able to select. These additional measures are listed in the full survey results which are presented in more detail in the Appendix. Survey takers were also asked to identify specific areas, facilities or groups of people particularly vulnerable to natural hazards. Responses indicated a strong concern for the elderly, disabled, and those with special and/or medical needs. The survey results report in the Appendix lists all responses to this question.

Survey takers were also asked about the use of emergency shelters. Forty-two of 147 respondents indicated they had used a local shelter. Of these 42 respondents, 27 or 64% used a local shelter for charging a cell phone or laptop; 19 or 45% obtained meals at a shelter; 17 or 40% showered at a shelter; and six or 14% slept overnight at a shelter. The survey also asked respondents if they needed to go to a shelter in the event of a natural disaster, would they be willing to go to a multi-town shelter. One hundred thirty-one people responded to this question. Overall, there was a strong support for the use of multi-town shelters. Ninety-six or 73% expressed a willingness to use a multi-town shelter; 35 or 27% said they would not be willing to go to a multi-town shelter.

Public Meetings

Upon completion of a draft hazard vulnerability analysis and initial meetings with local officials, CRCOG staff conducted several public meetings in the spring and summer of 2013 (listed below) to solicit feedback from residents and other stakeholders. CRCOG sent meeting notices to various municipal officials including chief elected officials, school superintendents, public housing authorities, planning and zoning commission chairs, CERT leaders, as well as to local libraries, hospitals, colleges, chambers of commerce, news media, utilities, the Red Cross, abutting towns, congressional offices, state senators and representatives, and community organizations. Meeting notices and summaries were also posted on the CRCOG website. Each town was also asked to advertise the meeting. Town outreach included postings on municipal websites, press releases, e-mail distributions, announcements at other local

public meetings, among other means. Formal attendance was not taken at these meetings, however, over 53 residents, legislative representatives, members of the press and other local stake holders attended this series of meetings. In addition, over fifty municipal and school representatives attended. Below are brief summaries of each of the seven subregional meetings. More detailed meeting summaries can be found in the Appendix.

Sub-region: Farmington River Watershed - Avon, Canton, Farmington, Simsbury

Date: June 10, 2013; 6 pm – 8:30pm

Location: Farmington Police Department Community Room

Meeting Highlights: Ten members of the public attended: three residents of Avon, one resident of Canton, one state senator, two congressional staff persons and two members of the press. Public comment focused on dealing with power outages, notifying the public in times of emergency, and sheltering issues.

Sub-region: South East - Andover, Bolton, Hebron, Marlborough

Date: June 17, 2013, 7 pm – 8:30 pm

Location: Hebron's Gilead Hill Elementary School

Meeting Highlights: Three members of the public attended: two residents of the Amston section of Hebron and an unidentified man. Public comment focused on expanding volunteer participation, sheltering issues and storm clean up and tree trimming efforts

Sub-region: Connecticut River North - East Granby, Granby, Suffield

Date: July 1, 2013, 7 pm – 8:30 pm

Location: Granby Senior Center

Meeting Highlights: Fourteen members of the public attended including at least ten residents of Granby. The meeting was taped by Granby Community Television. Public comment focused on expanding training for the public in dealing with natural disasters and ensuring means of communicating with the public during times of power outages

Sub-region: Central West - Bloomfield, Newington, Rocky Hill, West Hartford, Wethersfield

Date: July 2, 2013, 7pm – 8:30 pm

Location: Bloomfield Volunteer Ambulance

Meeting Highlights: Seven members of the public attended including a resident of West Hartford, two representatives from CL&P, a state senator, and a local newspaper reporter. Public comment focused on CL&P's efforts to lessen the potential for power outages and a request that municipalities be encouraged to pursue mitigation projects which are likely to qualify for grant funding.

Sub-region: Connecticut River North – Windsor, Windsor Locks, Enfield

Date: July 9, 2013, 7 pm – 7:45 pm

Location: Windsor Locks Town Hall

Meeting Highlights: Two representatives from Connecticut Light & Power attended. There was no public comment.

Sub-region: Connecticut River South – East Hartford, Glastonbury, Hartford, Manchester, South Windsor

Date: July 11, 2013, 7 pm – 8:15 pm

Location: Glastonbury Academy Building

Meeting Highlights: Seven members of the public attended including representatives from the press, CL&P and the Glastonbury Chamber of Commerce as well as a staff person from State Senator Gary LeBeau's office. A CL&P representative highlighted the utility's efforts to strengthen its infrastructure.

Sub-region: North East - East Windsor, Ellington, Somers, Stafford, Tolland, Vernon

Date: July 18, 2013, 7 pm – 8:45 pm

Location: Vernon Senior Center

Meeting Highlights: At least eleven members of the public attended including CERT team members, the press, and CL&P representatives. In addition, twenty-one representatives from municipal departments and public-school systems attended. Public comment focused on the need for improved alert systems, assistance in acquisition of equipment and better coordination between municipal governments and school systems, as well as issues with the State's storm clean up and supply distribution.



Public Meeting in Farmington, June 10, 2013. Credit: CRCOG



Public Meeting in Vernon, July 18, 2013. Credit: CRCOG

Review of Draft Plan Update - To solicit public comment on the draft plan, CRCOG advertised the availability of the draft Plan Update, made presentations to local officials, and held two public input meetings. CRCOG requested that each participating municipality post on its own website, newsletter and any other appropriate media that the draft plan was available for review and comment beginning. CRCOG also notified potentially interested agencies including regional watershed groups, conservation districts, colleges, hospitals, chambers of commerce, and others. A public service announcement was

provided to the Connecticut Radio Information System (CRIS), a radio reading service. Articles were placed in the September 20th and October 4th editions of the CRCOG Newsletter.

Presentations on the draft plan were made on September 17th to the Policy Board and on September 19th to the UAWG/MMRS (Urban Area Working Group/ Metropolitan Medical Response System, a subcommittee of CREPC) and to the Regional Planning Commission. At these meetings, attendees were given copies of the Executive Summary and the Municipal Plan for their respective community.

Public meetings on the draft plan update were held in the evenings at the Hartford Public Library on Tuesday, October 1, 2013 and at the Enfield Town Hall on Wednesday, October 2, 2013. These public input sessions and the availability of the draft for review and comment were advertised in The Hartford Courant, the Hartford News, and the Journal Inquirer. The advertisement in the Hartford News was also translated into Spanish. Several towns posted notices on their websites and sent out press releases. More detailed meeting summaries, newspaper and website advertisements and news articles can be found in the Appendix.

Summary of public comment received at public meetings:

October 1, 2013, Hartford Public Library, 5:30 pm – Attendance included three municipal representatives (two from Hartford and one from Glastonbury) and a resident of Hartford who requested that CRCOG assist municipalities in outreach to and involvement of those with functional needs in natural hazard mitigation efforts. As the commenter, who serves on CREPC's Regional Support Function-19 for Functional Needs Management noted, it is often difficult to develop and maintain lists of those with functional needs because registration and inclusion in a list or database is voluntary and privacy must be maintained. Involvement of persons with functional needs in mitigation activities can be also difficult for a number of reasons including the specifics of the functional need, transportation issues, and lack of personal familiarity with those undertaking the activities, among others. CRCOG staff responded that one regional objective is to, "Assist municipalities in implementing hazard mitigation strategies" and that a number of the region's municipalities have identified mitigation strategies to meet the needs of special needs populations.

After the meeting ended and attendees had left, a representative of the Connecticut Coalition for Environmental Justice entered the meeting room. CRCOG staff discussed the draft plan with her and gave her a copy of the plan document and several copies of the executive summary. She also expressed concern for those with functional needs.

October 2, 2013, Enfield Town Hall, 7:00 pm – Attendance included two residents of Enfield, the mayor of Enfield, and a reporter from The Hartford Courant. One resident expressed concern about flooding in the vicinity of I-91 and Route 5 and the Mayor described the Town's plans to address the issue. The other resident expressed her concern for improving outreach and community involvement regarding disaster preparedness. Mr. Perkins described some of the techniques towns and the region are using to involve the public in disaster preparedness. She also expressed her support for and interest in low impact development (LID) techniques. Mr. Perkins said information is available on CRCOG's website. Mayor Kaupin added that information is also available on Enfield's website.

Written Comments Received:

The comment period was originally advertised as open until October 11, 2013; however, it was extended to October 31st to respond to requests from Hartford residents for increased opportunity for comment. The City of Hartford issued a media advisory on the extension of the public comment period. CRCOG also posted an announcement of the public comment period extension on its website. An e-mail comment was received asking if micro grids had been considered, particularly for the Town of West Hartford. In response to this comment, the Town advised that they had initiated conversations with CL&P. We were also notified that several land use boards in the Town of Simsbury had reviewed the plan update and were particularly supportive of the regional objective to improve stormwater management and groundwater recharge. No other written comments were received as of November 4, 2013.

Response to Comments Received:

In response to the request for regional assistance to communities for outreach to persons with functional needs, the ESF-5 Planning Committee members were asked to consider the addition of a regional mitigation action to *“Assist member communities in efforts to develop and maintain lists of functional needs populations and in improving involvement of functional needs persons in planning and training for hazard mitigation.”* The committee agreed to amend the regional mitigation strategy to add this additional action. The draft plan update was also revised to incorporate a brief description of the State’s grant program for micro grids and a description of resources for planning and responding to the needs of vulnerable populations into the Resources section.

Coordination with Neighboring Communities and Other Agencies

Opportunities for input from neighboring communities and other regional bodies were provided throughout the update process. The Capitol Region Emergency Planning Committee (CREPC) which represents all thirty of the CRCOG municipalities contributing to this multi-jurisdictional plan plus eleven other neighboring communities in Connecticut was regularly briefed on plan update activities. CREPC member communities correspond to the DEMHS Region 3 communities. The map which follows shows the CRCOG communities in green and the additional CREPC/DEMHS Region 3 communities in white.

CREPC’s Emergency Support Function 5 – Emergency Management serves as the basis for the planning committee which provides oversight to the Plan Update process. Outreach for the planning committee meetings included ESF-5 members from communities outside CRCOG as well as other regional agencies. Attendance at the February 2013 planning committee meeting included representatives from the neighboring communities of New Britain and Portland as well as representatives from DEMHS, FEMA and the MDC. (The MDC, or Metropolitan District Commission, is a regional water and wastewater agency serving Hartford and neighboring municipalities.) Attendance at the ESF-5 meeting of October 22, 2013, included a representative from Middletown and Portland. In addition, other regional natural hazard mitigation plans, as well as the state plan were reviewed during the preparation of this plan update.

CRCOG staff also staffed a booth at the Hartford Springfield Economic Partnership (HSEP) “State of the Region” Conference in Windsor, Connecticut on June 7, 2013, and provided materials describing the update planning process. The HSEP, also known as New England’s Knowledge Corridor, is an interstate partnership of regional economic development, planning, business, tourism and educational institutions

from throughout the Hartford, Springfield and New Haven metropolitan areas. The website for the Sustainable Knowledge Corridor, a partnership of three regional planning agencies, CRCOG, the Pioneer Valley Planning Commission (PVPC) in Massachusetts, and Central Connecticut Regional Planning Agency (CCRPA), as well as a consortium of some thirty diverse organizations which evolved from associations formed through the HSEP, includes a link to CRCOG's natural hazards mitigation planning web page: <http://www.sustainableknowledgecorridor.org/site/content/climate-natural-hazards>.



Map 1: CRCOG and CREPC Municipalities

Municipal planners or other local representatives in communities adjacent to CRCOG, including those in Massachusetts, were e-mailed notices of the subregional public meetings held in June and July of 2013. Representatives of other regional bodies were also e-mailed these meeting notices including CL&P (Connecticut Light & Power, the regional electric utility), MDC, Red Cross, chambers of commerce, regional health districts, and community organizations. Multiple news media representatives were also notified of each public meeting. Although formal attendance was not taken at these meetings, representatives from CL&P attended six of the seven meetings and a Red Cross volunteer leader and representatives of a U.S. Congresswoman attended a meeting. Input from those outside the thirty CRCOG municipalities was also obtained through the online survey. Notices of the subregional meetings included links to the survey. Of the 147 respondents to the survey, eight were from outside the region.

Outreach to organizations outside the Capitol Region and to regional organizations to announce the availability of the draft plan and public input meetings was similar to that of the subregional meetings. Municipal planners or other local representatives in communities adjacent to CRCOG including those in Massachusetts; representatives of regional bodies including utilities, regional planning agencies, the Red Cross, chambers of commerce, regional health districts, and community organizations; and multiple news media representatives were e-mailed notices of the October public meetings.

Planning Process for the 2015 Former Windham Region Hazard Mitigation Plan Update

Initial Planning Process

The chief elected officials in the region designated the Windham Region Council of Governments (WINCOG) Regional Emergency Planning Workgroup to act as an advisory board for the preparation of the initial plan. The Workgroup consists of at least one representative from each town, and includes a mix of emergency management directors, town engineers, fire marshals/chiefs, first selectmen and other representatives from public and private organizations. They provide a forum for municipalities to share ideas throughout the development of the initial plan. The committee contributed in gathering historical accounts of natural disaster impacts, determining critical areas of concern, providing existing mitigation strategies, reviewing and providing revisions for draft copies of the risk and vulnerability assessment, and determining mitigation strategies for each municipality.

The Workgroup members, along with additional representatives from the towns as appointed to assist with developing the plan, were largely responsible for coordinating the planning efforts in their respective municipalities, which included data collection, identifying existing mitigation strategies, and developing proposed mitigation strategies. The town-specific sections were developed through a series of personal interviews, e-mail exchanges, and/or meetings among the various municipal departments.

Plan Update Process

WINCOG completed its initial multi-jurisdictional hazard mitigation plan in 2006. The plan update process commenced in 2012. WINCOG met with each community to perform data collection for the plan update, including identifying new risks and vulnerabilities and updating strategies and actions. In addition, each meeting of the Board of the Windham Region Council of Governments and of WINCOG's Regional Emergency Planning Workgroup included opportunities for public comment, and many of these meetings included agenda items relating to the Natural Hazard Mitigation Plan Update. In particular, these meetings provided a forum for discussion of the plan update specific to hazards and issues that were shared across municipal boundaries. The meetings of both groups were open to the public and the agendas are posted on WINCOG's website, distributed to town clerks to be posted, offered to the media to be announced at their discretion, and sent to the Board members.

During the plan update process, each community reaffirmed the goal of the natural hazard mitigation plan, which is to reduce the loss of life and property and economic consequences as a result of natural disasters. All communities also reaffirmed its list of objectives to meet this goal, although some communities added and/or deleted objectives.

Chief elected officials, town managers, local emergency management directors, town planners, town engineers, public works directors and other staff of the nine member towns had several opportunities to review and assist in developing this plan update. In addition, WINCOG offered the opportunity for the public and other stakeholders to comment on the updated plan. The public comment period was held beginning in November 2013 by hosting the updated plan on the WINCOG website and municipal websites and holding public hearings. A public information session was scheduled in each town either as a stand-alone meeting or as part of a Board of Selectman or Town Council Meeting. Information sheets and the town section of the plan were handed out at each meeting. Some towns also posted the

drafts on their web sites, and a draft of Part I had been continuously available to view on the WINCOG web site.

As of 2015, documentation of the website posting was no longer available for WINCOG and for some of the pertinent communities, but are referenced where available as follows:

- The section of the updated plan pertinent to the Town of Columbia was placed on the Town of Columbia website in November 2013. The Board of Selectmen reviewed the plan at their December 17, 2013 regular meeting and issued comments to town staff. No public comments were received at the meeting.
- The section of the updated plan pertinent to the Town of Coventry was placed on the Town of Coventry website¹²³ for public review and comment in November 2013. A public meeting to review the plan was held on December 12, 2013 for 90 minutes. No public comments were received at the meeting.
- The section of the updated plan pertinent to the Town of Mansfield was placed on the Town of Mansfield website⁴ for public review and comment on November 12, 2013. A public meeting was held in Mansfield as part of the Mansfield Town Council meeting of November 25, 2013. Two members of the public provided comments to the plan and several of the suggestions were incorporated into various objectives.
- The section of the updated plan pertinent to the Town of Willington was placed on the Town of Willington website⁵ for public review and comment in December 2013. A public meeting was held in Willington as part of the Willington Board of Selectmen meeting of December 13, 2013. No public comments were received at the meeting.

WINCOG reportedly incorporated public and municipal comments into the final draft plan update that was submitted for FEMA for review in 2014.

WINCOG officially dissolved in July 2014 when the Connecticut Office of Policy and Management consolidated the number of planning regions in Connecticut under Section 16a-4c of the Connecticut General Statutes. The former WINCOG member communities became part of the Southeastern Connecticut Council of Governments (SCCOG), the Capitol Region Council of Governments (CRCOG), or NECCOG as indicated below:

- The Towns of Chaplin, Hampton, and Scotland joined NECCOG;
- The Towns of Columbia, Coventry, Mansfield, and Willington joined CRCOG; and
- The Towns of Lebanon and Windham joined SCCOG.

FEMA provided review comments on the draft plan update subsequent to WINCOG's dissolution. By then, the towns of Chaplin, Hampton, and Scotland had elected to participate in the hazard mitigation

¹ <http://www.coventryct.org/AgendaCenter/ViewFile/Item/549?fileID=723>

² <http://www.coventryct.org/AgendaCenter/ViewFile/Item/549?fileID=724>

³ <http://www.coventryct.org/AgendaCenter/ViewFile/Item/549?fileID=725>

⁴ http://www.mansfieldct.gov/filestorage/1904/4724/20131125_natural_hazards_mitigation.pdf

⁵ http://willingtonct.virtualtownhall.net/Public_Documents/WillingtonCT_Webdocs/Hazard

plan update being undertaken by NECCOG. SCCOG secured funds to address FEMA comments for the remaining six towns, and the draft WINCOG Hazard Mitigation Plan Update was revised by Milone & MacBroom, Inc. to address FEMA's comments and remove textual references to Ashford, Chaplin, Hampton, and Scotland. The plan was renamed *Hazard Mitigation Plan Update, 2015 – A Multi-jurisdictional Plan for the former Windham Region Council of Governments (WINCOG) Towns of Columbia, Coventry, Lebanon, Mansfield, Willington, and Windham*.

Following the incorporation of required edits, FEMA issued the "approval pending adoption" and a draft of the completed plan was distributed to each of the six participating communities for adoption. Of those six communities, four (Columbia, Coventry, Mansfield, and Willington) are now part of CRCOG.

Planning Process for the 2016 Former Central Connecticut Hazard Mitigation Plan

Initial Planning Process

Preparation of the initial Plan began in 2003. The planning process was overseen by key staff from each of the seven municipalities in the CCRPA region as well as the CCRPA Board of Directors comprised of representatives from each community. CCRPA staff based the list of hazards to be evaluated based on the 2007 State Hazard Mitigation Plan Update, other regional Hazard Mitigation Plans, and data collected from state and federal agencies. Hazards that posed little or no risk to the region (e.g. tsunamis and mudslides) were eliminated from consideration.

Interviews were conducted with staff from each community as well as utilities in the region. Data was compiled from local, regional, state, and federal plans and used to create a cohesive picture of likely hazard impacts in the region. Hazard mitigation goals, objectives, and strategies were developed in consultation with representatives from each of the seven municipalities of the CCRPA region in fall 2009. Strategies were prioritized using a modified version of the Social, Technical, Administrative, Political, Legal, Economic, and Environmental (STAPLEE) schema.

Drafts of the Plan were made available on the CCRPA website for public comment. Following internal and community review, the draft Plan was circulated to neighboring communities, neighboring regional planning agencies, chambers of commerce, local universities, and emergency management associations for comment. The final draft was presented at a public hearing on February 24, 2010. The plan was reviewed by the Connecticut Department of Environmental Protection (now the Department of Energy and Environmental Protection, or DEEP) and FEMA with approval pending adoption being issued on January 24, 2011. Each of the seven communities adopted the Plan at meetings held between February and April 2011.

Planning Process for Plan Update

The planning process for the Plan update began in 2013 through correspondence and/or meetings with municipal staff. CCRPA officially dissolved in July 2014 when the Connecticut Office of Policy and Management consolidated the number of planning regions in Connecticut under Section 16a-4c of the Connecticut General Statutes. CRCOG assumed the Plan update process from CCRPA as of January 1, 2015. In order to complete the Plan update in a timely manner, CRCOG retained the services of Milone & MacBroom, Inc. on April 1, 2015.

Follow-up meetings to finalize data collection with municipal staff were held in 2015. A public information meeting was held in each of the seven communities, and an online survey was distributed for public comment. Residents and business owners (including those of neighboring communities) were

asked via press release and/or the community's website to attend the public information meeting and/or fill out the online survey. Community officials were asked at each municipal staff meeting about the impacts of hazards that cross municipal boundaries. In addition, CRCOG requested comments from neighboring communities within the CRCOG region, and also asked for comments from NHCOG, NVCOG, and the South Central Region Council of Governments (SCRCOG) and their member communities adjacent to the former CCRPA communities. The timing of these items is presented below.



Community or Entity	Date	Type	Topic
Plainville	4/30/2013	Written Briefing	Discuss impacts of recent storms
Southington	9/17/2013	Staff Meeting	Discuss impacts of recent storms, general flooding impacts, and potential strategies and actions
Burlington	9/23/2013	Staff Meeting	Discuss impacts of recent storms, status of strategies and actions, and potential hazard mitigation projects
New Britain	9/23/2013	Staff Meeting	Discuss impacts of recent storms, general impacts of flooding and winter storms, and potential strategies and actions
Bristol	9/24/2013	Staff Meeting	Discuss impacts of recent storms and status of existing strategies and actions
Greater New Britain Chamber of Commerce	9/26/2013	Meeting	Discuss impacts of recent storms on business and potential mitigation measures to reduce impacts to businesses
Berlin	10/2/2013	Staff Meeting	Discuss impacts of recent and historical storms and flooding areas
Emergency Management Directors	Summer 2014	Questionnaire	Questions related to local preparedness, critical transportation infrastructure, and effects of recent disasters
Advisory Committee	11/7/2014	Presentation	CCRPA updated the Advisory Committee consisting of representatives from each of the seven communities on the status of the plan update that would transfer to CRCOG as of January 1, 2015
Plainville	12/15/2014	Public Meeting	Presented draft Plan update and solicited public comment
Plainville	4/9/2015	Staff Meeting	Discussed capabilities and effects of natural hazards, reviewed existing strategies and actions, discussed new strategies and actions
Berlin	4/24/2015	Staff Meeting	Discussed capabilities and effects of natural hazards, reviewed existing strategies and actions, discussed new strategies and actions
Bristol	4/27/2015	Staff Meeting	Discussed capabilities and effects of natural hazards, reviewed existing strategies and actions, discussed new strategies and actions
Southington	4/28/2015	Staff Meeting	Discussed capabilities and effects of natural hazards, reviewed existing strategies and actions, discussed new strategies and actions
Plymouth	4/30/2015	Staff Meeting	Discussed capabilities and effects of natural hazards, reviewed existing strategies and actions, discussed new strategies and actions
Burlington	5/1/2015	Staff Meeting	Discussed capabilities and effects of natural hazards, reviewed existing strategies and actions, discussed new strategies and actions
New Britain	5/12/2015	Staff Meeting	Discussed capabilities and effects of natural hazards, reviewed existing strategies and actions, discussed new strategies and actions
Berlin	5/19/2015	Public Meeting	Presented Plan update process and sections of draft plan and solicited public comment
Burlington	5/28/2015	Public Meeting	Presented Plan update process and sections of draft plan and solicited public comment

Community or Entity	Date	Type	Topic
Southington	6/16/2015	Public Meeting	Presented Plan update process and sections of draft plan and solicited public comment
Bristol	6/30/2015	Public Meeting	Presented Plan update process and sections of draft plan and solicited public comment
New Britain	7/7/2015	Public Meeting	Presented Plan update process and sections of draft plan and solicited public comment
Plymouth	7/22/2015	Public Meeting	Presented Plan update process and sections of draft plan and solicited public comment
New Britain	8/5/2015	Public Meeting (for State Univ.)	Discussed hazard mitigation planning process for Charter Oak College and Central Connecticut State University, both located in New Britain
Public	5/1/2015 to 8/14/2015	Online Survey	Questionnaire for the public regarding the impact of natural hazards on their property and community

Table 1-3 – Planning Process for Plan Update.

The City of New Britain coordinated with the two institutes of higher education located in the city. Specifically, the Connecticut State Colleges and Universities (CSCU) system is preparing a multi-campus hazard mitigation plan in 2015. Two campuses are located in New Britain – Charter Oak State College and Central Connecticut State University. The planning team responsible for the multi-campus hazard mitigation plan (Woodard & Curran and the CSCU Board of Regents) coordinated directly with the City of New Britain during the plan development process in 2015. Additionally, Milone & MacBroom, Inc. discussed the New Britain annex update with Woodard & Curran and the CSCU Board of Regents on August 5, 2015. Ultimately, all participants agreed that none of the hazard mitigation actions developed for Charter Oak State College and Central Connecticut State University would need to be listed in the New Britain annex. All participants concurred that the New Britain annex could discuss the sheltering capabilities of Charter Oak State College and Central Connecticut State University, as well as the ongoing emergency services coordination between the City of New Britain and the two colleges.

A draft of the plan was submitted to DEMHS in October 2015. Following revisions requested by DEMHS, a draft was submitted to FEMA in March 2016. FEMA determined that the plan was “approvable pending adoption” without any need for revisions. The local governmental body of each participating community then adopted the Plan update. FEMA’s formal approval was dated September 15, 2016 and applied to all seven of the former CCRPA municipalities. Of those seven communities, four (Berlin, New Britain, Plainville, and Southington) are now part of CRCOG.