
Capitol Region Pre-Disaster Natural Hazard Mitigation Plan

*Capitol Region Council of Governments
Hartford, CT*

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Introduction

The Capitol Region Council of Governments (CRCOG) received Federal Emergency Management Agency funds to develop a Pre-Disaster Natural hazard Mitigation Plan for the 29 municipalities comprising the region. CRCOG staff municipal officials from each community have contributed to this planning project.

The plan contains a brief introduction to the region and its current conditions. Section I identifies and evaluates the natural hazards that affect the region. Section II establishes regional mitigation goals and strategies. Section III contains the mitigation goals and strategies of each Capitol Region municipality. Section IV describes the planning process. Appendices provide further loss and/or municipal information.

Authority

The Federal Disaster Mitigation Act of 2000 (DMA 2000) amended Section 322, “Mitigation Planning” and other sections of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to promote natural hazard mitigation planning. DMA 2000 requires local governments to have an approved Pre-Disaster Mitigation Plan to be eligible to receive Hazard Mitigation Grant Program project funding. Once adopted locally and approved by FEMA, this regional plan will fulfill that requirement.

Purpose

The purpose of this plan is to set forth mitigation strategies that will reduce the loss of life and property, economic disruptions and the cost of post-disaster recovery for Capitol Region communities. Unlike other emergency plans already adopted for the region, this Pre-Disaster Natural Hazard Mitigation Plan focuses on reducing or eliminating the impacts of natural hazards. Nevertheless, as mitigation measures are only a part of emergency preparedness, this plan will be incorporated into the Regional Emergency Deployment (RED) Plan after adoption.

The plan considers the following natural hazards that affect the region:

- Dam failure
- Drought
- Earthquake
- Flooding
- Forest Fire
- Hurricane
- Tornado
- Winter Storm

Mitigation goals and strategies were developed at both the regional and local levels. CRCOG and the Capitol Region Emergency Preparedness Committee (CREPC), in addition to local and other partners, are responsible for implementation of the regional goals contained herein. Each participating municipality identified its own mitigation goals and strategies and assumes responsibility for implementation of those measures.

Geography and Climate

The Connecticut River valley bisects the Capitol Region from north to south. The western and eastern edges of the Region contain more steep slopes, and narrower tributary river valleys than the relatively flat, central valley (see the topography map on page 6). The region's climate, like the State's overall, is dominated by relatively even distribution of precipitation across four seasons; a significant range in temperatures both seasonally and daily; and, significant variability in weather over brief time spans as well as across years. Generally, the region has a moderate climate with maximum temperatures ranging from 35-40° in winter to 80-85° in summer. The average minimum temperature ranges from about 20° in winter to 60° in summer. Average annual precipitation is about 45 inches, although this can vary widely. About 40 inches of snow can be expected per year, again, with wide variation across the hills and valleys of the region.

Population

Connecticut's Capitol Region encompasses the City of Hartford, Connecticut's capital, and the 28 surrounding suburban and rural communities. It is a region rich in history as well as human and natural resources. Portions of the Farmington and Connecticut Rivers traverse the region, in addition to several smaller river complexes, including the Hockanum, Park and Scantic. The region contains urbanized and heavily developed areas as well as rural enclaves.

The total regional population according to the latest U.S. Census estimates is 741,303. As Table 1 on page 4 indicates, population density across the region varies dramatically, from a low of 214 people per square mile in Andover to a high of 7,324 people per square mile in Hartford. The 2006 population estimate represents a 2.8% increase in the region's population since 2000. In that same time, the region experienced an overall growth in its number of housing units of about 3.1%; however, the region's rural towns account for the bulk of this increase in housing units (see Table 2 on page 3). Overall, the region contains 306,626 housing units.

Land Use

Like most inland areas in New England, the Capitol Region historically developed along its major rivers. That early settlement pattern is still evident in contemporary land uses, with more urbanized areas concentrated along the Connecticut, Farmington, and Hockanum Rivers. Less dense development, and more significant forested and open space lands exist on the western and eastern edges of the region. See Map 2 on page 7 for a map displaying change in land cover across the region from 1985 to 2002. As is evident from the map, more recent development has occurred in a more diffuse pattern, away from the traditional urban core. This map was derived from the Center for Land Use Education and Research (CLEAR) at the University of Connecticut. Town-level land cover change maps for the same time period are available on CLEAR's website, and 2006 data should be available within the next year. These maps can help towns assess the vulnerability of new developments to natural hazard risks.

From the State Capitol and the multitude of state-owned facilities in Hartford to the rapidly developing commercial/industrial Day Hill Road in Windsor, and from Bradley International Airport in Windsor Locks to the various major retail developments in Canton, Manchester, and South Windsor, the region hosts significant commercial, industrial and public properties. According to 2004 equalized net grand list data, the region contains \$88.5 billion in real,

personal and motor vehicle property (see Table 3 on page4). Not all properties are equally vulnerable to all natural hazards as location and building materials influence vulnerability; nevertheless, the region risks substantial financial losses from catastrophic natural hazards affecting not only property, but also business and government operations.

Table 1: Capitol Region Population

Municipality	2006 Population Estimate	Area (sq. mi.)	Pop Density (per sq. mi.)
Andover	3,206	15	214
Avon	17,315	23	753
Bloomfield	20,611	26	793
Bolton	5,133	14	367
Canton	10,065	25	403
East Granby	5,074	17	298
East Hartford	48,857	18	2,714
East Windsor	10,546	26	406
Ellington	14,346	34	422
Enfield	45,231	33	1,371
Farmington	25,000	28	893
Glastonbury	33,025	51	648
Granby	11,169	41	272
Hartford	124,512	17	7,324
Hebron	9,222	37	249
Manchester	55,650	27	2,058
Marlborough	6,311	23	272
Newington	29,539	13	2,283
Rocky Hill	18,806	13	1,443
Simsbury	23,623	34	696
Somers	10,873	28	388
South Windsor	25,989	28	928
Suffield	15,106	42	350
Tolland	14,674	40	364
Vernon	29,622	18	1,638
West Hartford	60,700	22	2,781
Wethersfield	26,016	12	2,185
Windsor	28,658	30	959
Windsor Locks	12,424	9	1,379
Capitol Region	741,303	744	996

Source: U.S. Census Bureau; "Population Estimates of Incorporated Places Only: April 1, 2000 to July 1, 2006."
<http://www.census.gov/popest/cities/SUB-EST2005-states.html>

Table 2: Capitol Region Housing Units, 1990-2006

Municipality	1990	2000	2006	2000-06 Change
Andover	1,054	1,173	1,270	8.27%
Avon	5,639	6,612	7,094	7.29%
Bloomfield	7,853	8,175	8,854	8.31%
Bolton	1,668	1,905	2,042	7.19%
Canton	3,338	3,612	4,173	15.53%
East Granby	1,679	1,931	2,057	6.53%
East Hartford	21,335	21,355	21,297	-0.27%
East Windsor	4,290	4,410	4,749	7.69%
Ellington	4,571	5,328	6,065	13.83%
Enfield	16,520	17,106	17,278	1.01%
Farmington	8,885	9,852	10,523	6.81%
Glastonbury	11,098	12,632	13,214	4.61%
Granby	3,555	3,991	4,228	5.94%
Hartford	57,433	54,353	51,389	-5.45%
Hebron	2,528	3,091	3,382	9.41%
Manchester	22,322	23,249	25,271	8.70%
Marlborough	1,850	2,182	2,291	5.00%
Newington	11,782	12,350	12,602	2.04%
Rocky Hill	7,044	7,927	8,449	6.59%
Simsbury	8,267	8,808	9,032	2.54%
Somers	2,818	3,075	3,238	5.30%
South Windsor	8,185	9,083	9,709	6.89%
Suffield	4,399	5,006	5,299	5.85%
Tolland	3,854	4,789	5,186	8.29%
Vernon	12,629	12,984	13,964	7.55%
West Hartford	24,948	25,361	25,734	1.47%
Wethersfield	11,243	11,256	11,532	2.45%
Windsor	10,709	10,846	11,348	4.63%
Windsor Locks	4,982	5,091	5,356	5.21%
Capitol Region	286,478	297,533	306,626	3.06%

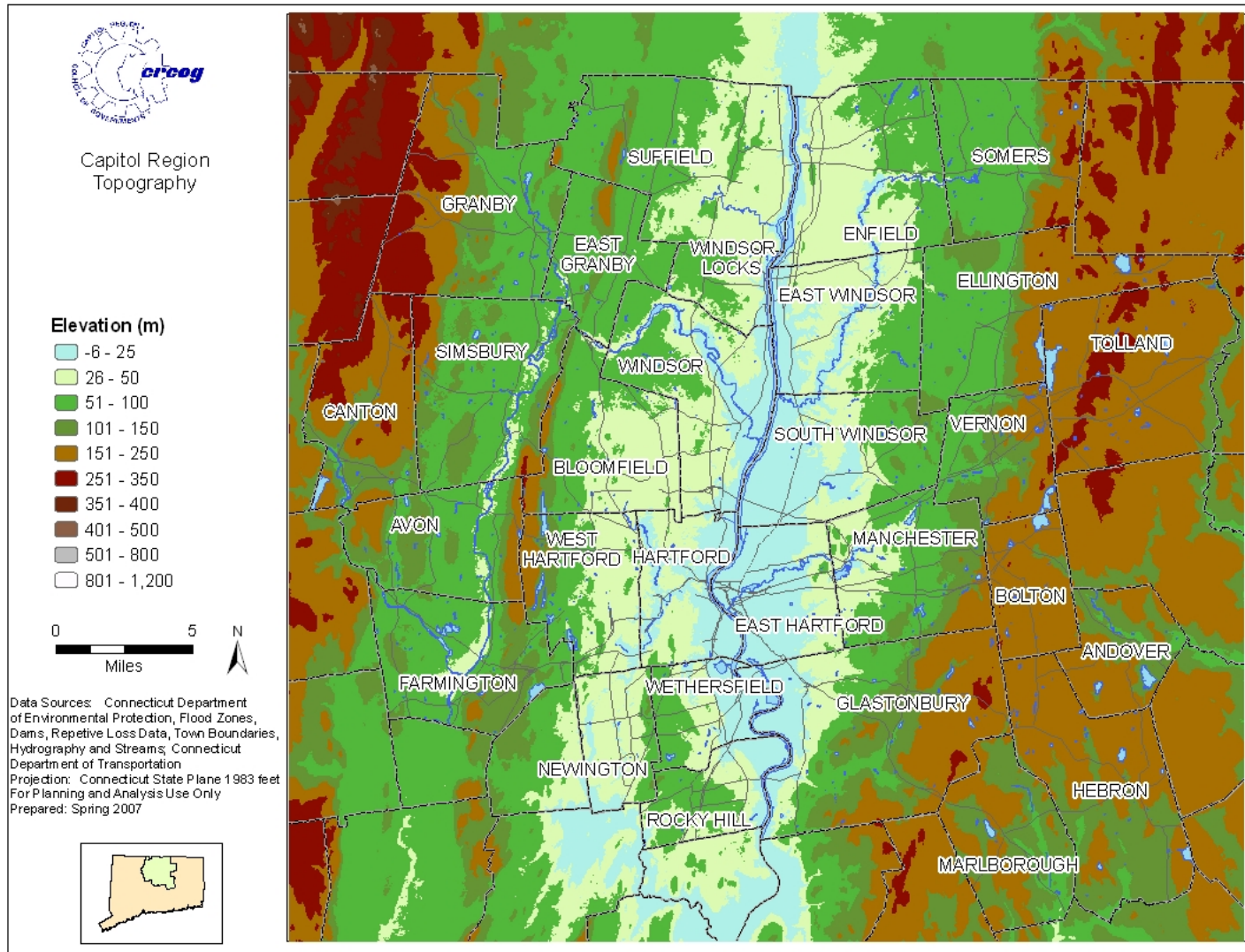
Source: Department of Economic and Community Development Annual Housing Inventory.
<http://www.ct.gov/ecd/cwp/view.asp?a=1106&q=250640>.

Table 3: 2004 Grand List Data by Town

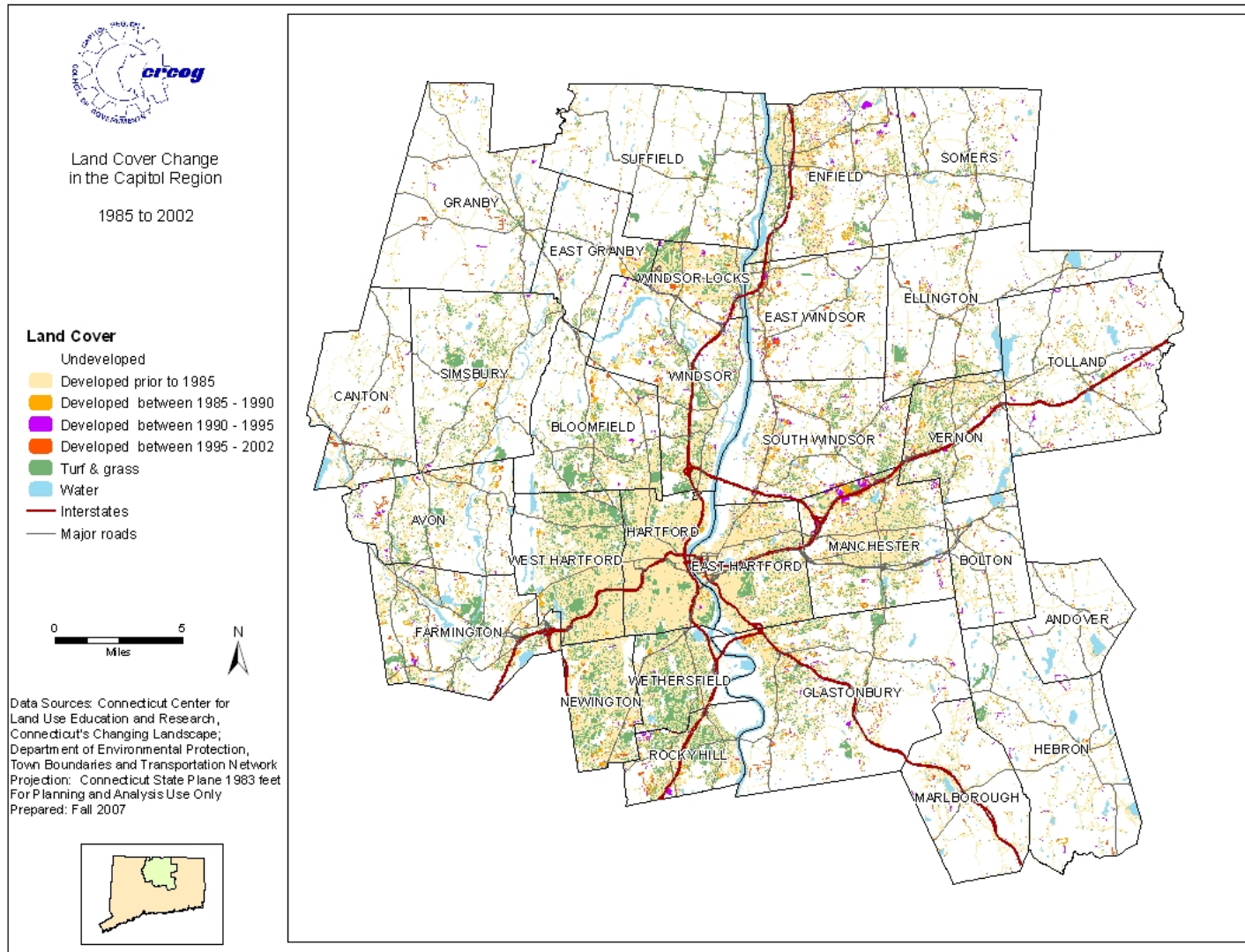
MUNICIPALITY	EQUALIZED NET GRAND LIST 10/1/04	GRAND LIST COMPONENTS				
		Residential	Commercial/ Industrial/ Public Utility	Motor Vehicle	Personal	Other
Andover	\$383,370,381	79.2%	2.8%	12.4%	2.2%	3.3%
Avon	\$3,733,540,848	75.9%	12.6%	6.9%	4.4%	0.3%
Bloomfield	\$2,451,100,334	51.7%	27.3%	6.8%	13.2%	1.1%
Bolton	\$626,577,968	81.5%	5.2%	8.5%	1.9%	2.9%
Canton	\$1,503,385,716	74.9%	12.7%	8.2%	3.9%	0.3%
East Granby	\$763,598,123	62.7%	14.9%	8.8%	10.4%	3.2%
East Hartford	\$4,356,509,975	45.4%	24.2%	9.5%	20.2%	0.8%
East Windsor	\$1,342,083,584	51.8%	27.0%	10.3%	9.2%	1.7%
Ellington	\$1,643,041,583	69.3%	11.6%	11.7%	4.6%	2.8%
Enfield	\$4,320,230,221	58.0%	22.1%	10.6%	8.3%	1.0%
Farmington	\$4,876,994,775	61.1%	23.5%	7.2%	7.9%	0.3%
Glastonbury	\$5,663,902,306	73.6%	13.2%	8.2%	3.9%	1.2%
Granby	\$1,439,837,449	74.8%	5.2%	9.1%	2.1%	8.9%
Hartford	\$8,511,588,775	26.1%	45.6%	7.1%	19.3%	1.9%
Hebron	\$1,152,513,923	81.4%	3.5%	10.2%	2.1%	2.7%
Manchester	\$5,870,881,342	49.2%	30.5%	9.9%	10.4%	0.0%
Marlborough	\$831,987,065	81.5%	5.3%	10.1%	2.1%	1.0%
Newington	\$4,051,823,902	58.2%	20.4%	10.4%	8.3%	2.7%
Rocky Hill	\$2,717,981,445	57.5%	24.8%	10.1%	6.0%	1.7%
Simsbury	\$3,687,323,417	74.5%	11.3%	8.5%	5.3%	0.4%
Somers	\$1,034,451,474	83.4%	4.1%	8.8%	2.1%	1.6%
South Windsor	\$3,563,086,894	66.6%	16.6%	8.8%	6.5%	1.6%
Suffield	\$1,789,754,126	78.9%	7.5%	8.4%	4.3%	0.9%
Tolland	\$1,635,127,180	82.6%	5.8%	8.6%	2.9%	0.1%
Vernon	\$2,597,687,500	58.6%	22.7%	11.5%	5.5%	1.8%
West Hartford	\$8,847,511,973	69.3%	16.3%	9.6%	4.1%	0.6%
Wethersfield	\$3,541,097,244	76.7%	12.0%	7.9%	3.4%	0.0%
Windsor	\$3,744,909,821	54.6%	22.1%	7.3%	14.6%	1.4%
Windsor Locks	\$1,870,948,984	43.1%	23.8%	12.9%	20.2%	0.0%

Source: *Municipal Fiscal Indicators: Fiscal Years Ended 2001-2005*. CT Office of Policy and Management. Downloaded from <http://www.ct.gov/opm/LIB/opm/IGP/munfinsr/FI2001-05%20Final.pdf>.

Map 1: Capitol Region Topography



Map 2: Capitol Region Land Cover Change 1985 to 2002



Plan

Section I of this plan profiles the natural hazards that affect the Capitol Region. Historical information is used to evaluate the potential for loss from further occurrences. Section II contains regional hazard mitigation goals and strategies, while section III details the goals and strategies of individual participating municipalities. Because of the regional nature of natural hazards and common concerns, some mitigation activities are better addressed at the regional level. Finally, section IV describes the planning process undertaken by CRCOG and its member municipalities to complete this plan.