

The Torrent



Revised Coastal Flood Maps

The Federal Emergency Management Agency (FEMA) has issued preliminary revised digital flood insurance rate map (DFIRM) coastal panels to 31 municipalities in Connecticut's four coastal counties. These map changes are in accordance with Appendix D of the *Guidelines and Specifications for Flood Hazard Mapping Partners* (<http://www.fema.gov/library/viewRecord.do?id=2206>).

In **Middlesex County** (Borough of Fenwick, Clinton, Old Saybrook, Westbrook) preliminary DFIRM were issued on September 22, 2011. The 90-day appeal period was held from February 9 to May 10, 2012. FEMA is scheduled to issue its letter of final determination (LFD) to communities on August 6, 2012. **The maps are scheduled to become effective on February 6, 2013.** In **Fairfield County** (Bridgeport, Darien, Fairfield, Greenwich, Norwalk, Stamford, Stratford, Westport) and **New Haven County** (Branford, East Haven, Guilford, Hamden, Madison, Milford, New Haven, North Haven, West Haven) preliminary DFIRM were issued on October 30, 2011. In **New London County** (East Lyme, Groton Long Point Association, Groton City & Town, New London, Noank Fire District, Old Lyme, Stonington Borough & Town, Waterford), preliminary DFIRM were issued on November 15, 2011. **In these counties, maps are scheduled to become effective on May 16, 2013, date subject to change.**

FEMA's mapping contractor (STARR) has posted information related to these map changes on the internet at: <http://www.starr-team.com/starr/RegionalWorkspaces/RegionI/Pages/default.aspx>. The preliminary DFIRMs, flood insurance studies (FIS), summary of map actions (SOMA), appeal and insurance factsheets, timelines, presentations, and other information is posted.

Along with these map updates, municipal floodplain zoning regulations or ordinances will need to be updated to include the new map panel dates. The CTDEEP will provide each community with a regulatory review letter approximately 6 months before the maps become effective outlining the regulatory changes required for compliance. A major change on the revised coastal map panels is the inclusion of the **Limit of Moderate Wave Action (LiMWA)** boundary (see page 2). Model LiMWA language has been developed by the CTDEEP. A municipality has the option to adopt and regulate construction in this area.

Municipalities should also encourage property owners to view the revised maps before they become effective. Property owners should be encouraged to purchase flood insurance prior to the new map date for significant future savings if they find their structure will now be located in the floodplain for the first time (see page 4). Additional resources for community officials, such as fact sheets and toolkits, can be found on the FloodSmart website: http://www.floodsmart.gov/floodsmart/pages/partner/partner_index.jsp.

Spring 2012

Volume 19, Issue 2

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A Publication of the
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What is the LiMWA?

Digital Flood Insurance Rate Maps (DFIRMs) for coastal areas currently depict two types of flood hazard areas: **VE Zones** where flood waters include wave heights of 3 feet or greater, and **AE zones** where the wave height is less than 3 feet (termed coastal AE zones). VE zones are also called **Coastal High Hazard Areas** where traditionally high velocity flow due to waves causes structural damage to building foundations and other critical building elements. It has long been recognized that waves less than 3 feet in height can also cause major damage to coastal structures. Laboratory tests and field investigations following hurricanes and storm events confirm that severe damage is inflicted to structures located in coastal AE zones by waves less as small as 1.5 feet.

In December 2008, the Federal Emergency Management Agency (FEMA) Procedure Memorandum 50 (<http://www.fema.gov/library/viewRecord.do?id=3481>) issued guidance on the identification and mapping of the 1.5 foot wave height line, referred to as the **Limit of Moderate Wave Action (LiMWA)**. The LiMWA will be shown on future coastal DFIRM map panels in Connecticut (see article on page 1).

To map the LiMWA, engineers analyze the full modeled wave profile and plot points along each coastal transect where the wave height crosses 1.5 feet. Then, like a flood zone boundary, the LiMWA is connected via interpolation between transects. In areas where wave run-up (maximum vertical extent of the wave uprush) dominates, such as steeply sloping dunes or bluffs, the LiMWA is placed immediately landward of the VE to AE zone boundary defined by the run-up depth, per the current FEMA guidance, and tied-in with adjacent wave height-dominated zone mapping. An effort is made to keep the LiMWA line as a continuous feature throughout the study area, even when flood zones are at minimum mapped widths in the vicinity.

The LiMWA is discontinued in instances when there are no mapped AE zones (i.e., zone goes directly from VE to X) and is cut-off at the point where the last AE zone ends at the 1% annual chance boundary (100-year flood line).

At this time, FEMA does not impose floodplain management requirements or special insurance ratings based on the LiMWA delineations. The LiMWA is being provided by FEMA as information only. Because the 1.5 foot breaking wave can potentially cause foundation failure, communities are encouraged to adopt building construction standards applicable for VE zones for new construction and substantial improvements within the LiMWA zone.

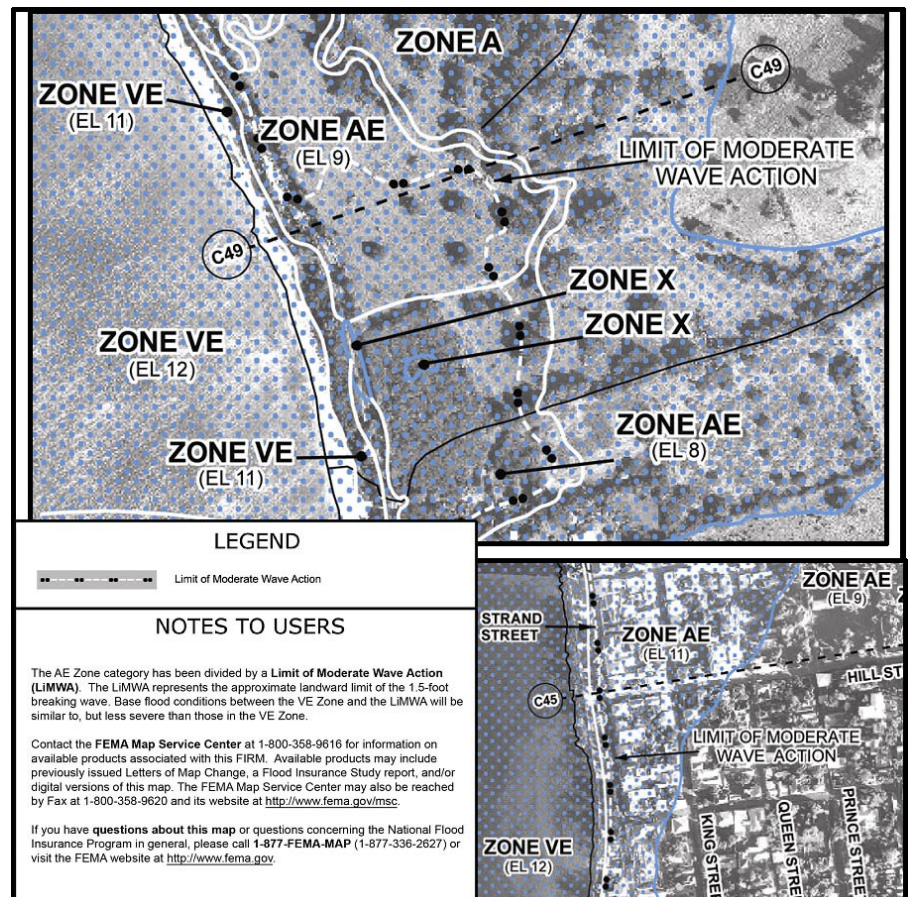
The CTDEEP has developed model LiMWA language that is optional for inclusion in local floodplain zoning regulations or ordinances if the commu-

nity chooses to regulate the LiMWA area to VE zone building standards.

For municipalities that participate in the Community Rating System (CRS) and that adopt VE zone building standards in LiMWA area, credits are available.

Mapping the LiMWA will help give the map users more information when considering buying or developing shoreline property, mitigating current structures, or enforcing floodplain management regulations in the coastal flood hazard areas.

The LiMWA will be identified in the DFIRM legend (see picture below). A note will be added to the “Notes To Users” section of the DFIRM panel to explain the LiMWA boundary.



Hurricane Season 2012

The Atlantic hurricane season begins June 1 and runs through November 30. The Colorado State University Tropical Meteorology Project, headed by Dr. William Gray, predicts the 2012 hurricane season to be less active than normal, with 4 hurricanes and 10 names storms. This compares with an average of 6.5 hurricanes and 12 named storms between 1981 and 2010. Forecasters predict that two of the hurricanes will be major storms of Category 3 or higher.

A combination of cooler than normal sea surface temperatures in the tropical Atlantic Ocean and an expected return to El Niño warmer than normal surface water conditions in the eastern and central Pacific Ocean account for the reduced probability for tropical storm activity. The lower Atlantic water temperatures make it more difficult for storms to form, as does higher air pressures in that region that forecasters say will occur this summer and autumn. The El Niño conditions historically have prompted greater wind shear in the upper atmosphere in the Atlantic, which tends to blow the tops off of thunderstorms, making it more difficult for hurricanes to form. The full forecast can be found at, with updated predictions on June 1, 2012: <http://typhoon.atmos.colostate.edu>.

The National Oceanic and Atmospheric Administration (NOAA) National Hurricane Center estimates a 70 percent chance of nine to 15 named storms, of which four to eight

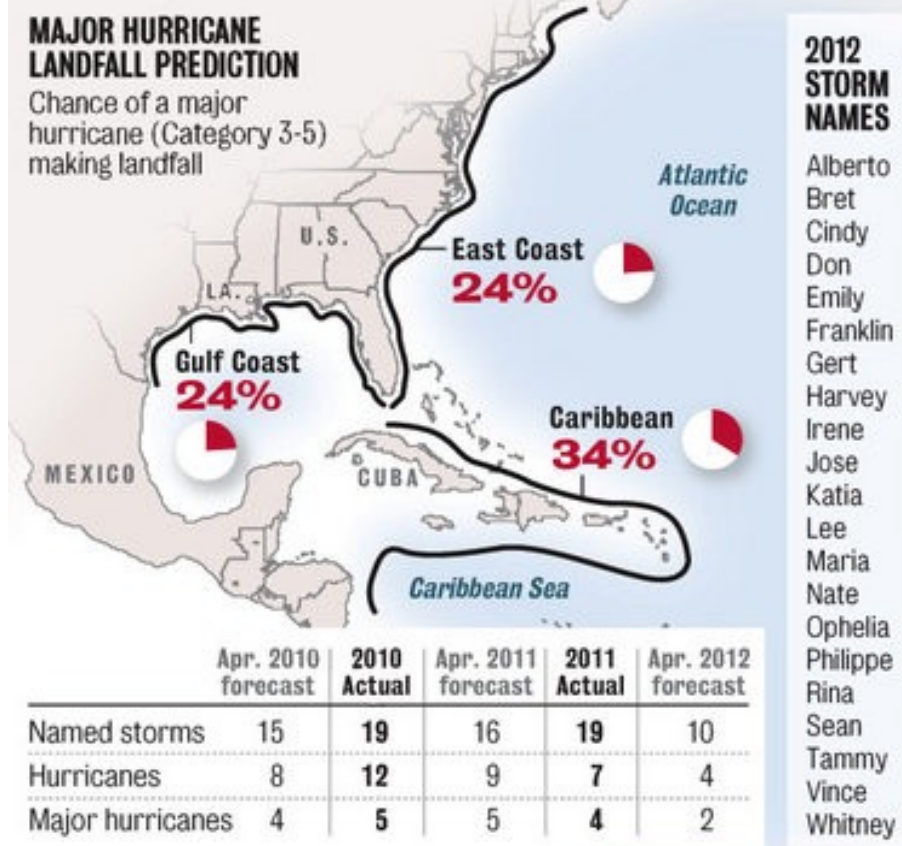


ATLANTIC STORM SEASON

Forecasters at Colorado State University are predicting a below-average number of tropical storms for the Atlantic region in 2012.

MAJOR HURRICANE LANDFALL PREDICTION

Chance of a major hurricane (Category 3-5) making landfall



2012 STORM NAMES

- Alberto
- Bret
- Cindy
- Don
- Emily
- Franklin
- Gert
- Harvey
- Irene
- Jose
- Katia
- Lee
- Maria
- Nate
- Ophelia
- Philippe
- Rina
- Sean
- Tammy
- Vince
- Whitney

	Apr. 2010 forecast	2010 Actual	Apr. 2011 forecast	2011 Actual	Apr. 2012 forecast
Named storms	15	19	16	19	10
Hurricanes	8	12	9	7	4
Major hurricanes	4	5	5	4	2

Source: Colorado State University

will strengthen into a hurricane, and of those three will become major hurricanes. NOAA also predicts a less active season compared to recent years but reminds residents not to let their guard down. This year is the 20th anniversary of Hurricane Andrew, a Category 5 hurricane that devastated south Florida on August 24, 1992 in a late-starting season that produced only six named storms.

National Hurricane Preparedness Week was held May 27 to June 2, 2012. The National Hurricane Center has a webpage dedicated to hurricane preparedness which can be found at:

<http://www.nhc.noaa.gov/prepare>. Hurricane preparedness information can be found at the Ready.gov website: <http://www.ready.gov/natural-disasters>.

Information on hurricanes and preparedness can be found on the FEMA website at: <http://www.fema.gov/hazard/hurricane/index.shtm>. Information on flood insurance related to tropical storms and hurricanes can be found on the Flood Smart website at: http://www.floodsmart.gov/floodsmart/pages/flooding_flood_risks/tropical_storms_hurricanes.jsp.

Grandfathering & Preferred Risk Policy Extension

Many Connecticut communities have had their flood insurance rate maps (FIRM) revised in 2010 and 2011 by FEMA in conjunction with its Map Modernization initiative, or will soon be undergoing changes due to revised coastal map panels (see page 1).

The revised maps may result in changes to flood zone classifications. Some properties may be re-mapped into a lower risk zone (X zone) where flood insurance is usually not required by a lender. For others, a property's risk may change from a low-risk zone to a special flood hazard area (SFHA), AE, A or VE zone. For some properties already located in the SFHA, the flood zone designation may change (e.g. AE zone to VE zone) or the Base Flood Elevation (BFE) may increase.

If a property is mapped into a higher risk zone, or if the BFE changes, the flood insurance premium could increase. Property owners need to understand their options following changes to the FIRM. One of the options may be “**grandfathering**”, which is a NFIP rule that was created in order to recognize property owners who carried a policy before the new maps became effective or built to the correct standards relative to the flood map in effect at the time of construction. This rule can result in significant cost savings to policy holders compared to a potentially higher premium rate that results from a flood map revision.

Preferred Risk Policy Extension

Structures not located in the 100-year floodplain on the current flood map can purchase a low-cost Preferred Risk Policy (PRP). Buildings written under a PRP are required to be located in flood zones B, C or X on the FIRM in effect on the date of application and on the date of each subsequent renewal. At renewal, a structure will become ineligible for a PRP if re-mapped into the SFHA, however, the policy could

be rewritten using a standard flood insurance policy, but rates would be based on the grandfathered low-risk flood zone (B, C or X zone). The resulting premium would typically be lower than if the AE, A or VE zone was used for rating, but higher than the previous PRP premium.

Recognizing the financial burden that this may place on affected property owners, starting January 1, 2011, FEMA extended the eligibility to write the PRP for two policy years after an updated flood map's date. Consequently, the ability to grandfather in a flood zone for future rating for a property newly mapped into a high-risk area has been extended for two years. This is where grandfathering can have significant savings for a property owner through the coming years.

More info on grandfathering and the PRP extension can be found at: www.floodsmart.gov, or on the FEMA website at: http://www.fema.gov/business/nfip/prp_state_local_off.shtm and <http://www.fema.gov/library/viewRecord.do?id=2845>.

Pre-FIRM Structures

A pre-FIRM structure is one that was constructed prior to the date of the community's first FIRM. Before the PRP extension rule, owners of pre-FIRM structures had just one opportunity to use the grandfathering rule, which was to purchase a policy before the updated FIRM became effective. Now, if a pre-FIRM building is newly mapped into a SFHA and it qualifies for a PRP, the property owner has up to two years from the new map's effective date to purchase a PRP to then grandfather in the lower risk zone for future rating. To maintain the grandfathered zone, the policy must stay continuously in effect. Continuity of coverage can be maintained even if the building is sold if the policy is assigned to the new owner.

Post-FIRM Structures

A post-FIRM structure is one that was built after the effective date of the initial FIRM for a community. These structures have two opportunities to apply the grandfathering rules:

- Purchase a policy before the FIRM becomes effective and lock in the zone or BFE for future rating; or
- Purchase after the updated FIRM is effective, but provide evidence that the building was built in compliance with the FIRM in effect at the time of construction (note to grandfather in a flood zone for post-FIRM properties newly mapped into a high-risk area, the two-year extension for PRP eligibility also applies, so this opportunity to grandfather applies after the two-year PRP period).

If a post-FIRM structure was constructed in compliance with the FIRM in effect at the time of construction, the owner is eligible to obtain a policy using the zone and the BFE from that FIRM if it results in a lower insurance rate. To do so, the building cannot have been altered in a way that resulted in a floor being lower than the BFE on that FIRM (e.g., enclosing the area below an elevated building) and the building cannot have been substantially improved or damaged. The property owner must also provide proper documentation to the insurance company or agent that shows: the date of the FIRM; the flood zone on the FIRM panel in which the property is located; the BFE (if any) for that zone; a copy of the map panel showing the location of the building; the rating element that is to be grandfathered, or letter from a community official verify the above information or an Elevation Certificate. Note that continuous coverage is not required to maintain this rate and this method of grandfathering can be used at any time after the new FIRM becomes effective.

News Briefs

Now Online—Municipal Inland Wetland Commissioners Training Program

In March 2012, the Connecticut Department of Energy & Environmental Protection (CTDEEP) made Segment 1 of the Municipal Inland Wetland Commissioners Training Program available as a multi-media on-line course. This training program consists of three segments offered annually. These segments cover a broad range of legal, administrative and scientific subjects relevant to municipal inland wetlands regulations. Each segment consists of an all-day workshop. Segment 1 is tailored for new agency members and will continue to be offered in the traditional all-day workshop format. The online course can be found at: http://www.ct.gov/dep/cwp/view.asp?a=2720&Q=325682&depNav_GID=1907&depNavPage=%7C.

NFIP & Building Code Quick Reference Guide

In March 2012, FEMA published the new *Quick Reference Guide: Comparison of Select NFIP and Building Code Requirements for Special Flood Hazard Areas*. This eight-page guide illustrates the similarities and highlights the differences between the National Flood Insurance Program (NFIP) minimum requirements and the requirements of the International Code Series (I-Codes) and ASCE 24, Flood Resistant Design and Construction, a standard reference by the I-Codes. The illustrations highlight some of the key similarities and differences between foundation types, lowest floor elevations, enclosures below elevated buildings, and utilities requirements contained within the NFIP and I-Codes for most residential and commercial buildings (classified as “Category II” struc-

tures by the building codes). The guide can be found at: <http://www.fema.gov/library/viewRecord.do?id=5701>

eWatermark Newsletter

eWatermark is the newsletter of the National Flood Insurance Program (NFIP). The newsletter can be found at: <http://www.nfipiservice.com/watermark/index.html>. Automatic email subscription and archived newsletters can also be found at the website.

NFIP Extended 60 Days

On May 31, 2012, President Obama signed H.R. 5740, extending the National Flood Insurance Program (NFIP) until July 31, 2012. On July 1, this new legislation phases out subsidized premium rates for secondary homes.

NOAA’s Introduction to Storm Surge Publication

The National Ocean and Atmospheric Administration’s (NOAA) National Hurricane Center has produced a new publication about storm surge which explains storm surge, what causes it, the factors that influence it, how it is observed and measured, and its contribution to total water level. This publication can be found online at: http://www.nhc.noaa.gov/ssurge/surge_intro.pdf

Notice of Intent to prepare PEIS on the NFIP

On May 16, 2012, FEMA announced in the Federal Register its intent to prepare a Programmatic Environmental Impact Statement (PEIS) on proposed modifications to the National Flood Insurance Program (NFIP). FEMA is

proposing to modify the NFIP from the way it is currently administered to include enhanced environmental and historic preservation, impacts to endangered and threatened species, and evaluating the removal of existing policy subsidies. Comments are due July 16, 2012. The Notice of Intent for this PEIS is available at: <http://www.gpo.gov/fdsys/pkg/FR-2012-05-16/pdf/2012-11841.pdf>

Pricing Flood Insurance White Paper Issued

In January 2012, the Wharton Risk Management and Decision Processes Center published a white paper entitled “A Methodological Approach for Pricing Flood Insurance and Evaluating Loss Reduction Measures: Application to Texas” which discusses the pricing of flood insurance, actuarial risk, rating structures, and NFIP reform. The paper can be found at: http://www.law.upenn.edu/blogs/regblog/2012/05/rethinking-federal-flood-insurance.html?utm_source=RegBlog+Subscribers&utm_campaign=b402ec5dec-RegBlog_Weekly_Email_May+14_2012&utm_medium=email

CT River First Blueway

On May 24, 2012, the U.S. Department of the Interior designated the Connecticut River the nation’s first National Blueway, a designation intended to support existing local conservation, recreation and restoration efforts without establishing additional regulations for a river. More information can be found at: <http://www.doi.gov/news/pressreleases/AMERICAS-GREAT-OUTDOORS-RIVERS-Secretary-Salazar-Creates-National-Blueways-System-Designates-Connecticut-River-and-Its-Watershed-as-First-National-Blueway.cfm>

UPCOMING CONFERENCES & WORKSHOPS

August 19-23, 2012. StormCon, Denver, Colorado. www.stormcon.com

October 20-24, 2012. Restore America's Estuaries 6th National Conference on Coastal and Estuarine Habitat Restorations, Tampa, Florida. www.estuaries.org

June 9-14, 2013. Association of State Floodplain Managers (ASFPM) Annual Conference, Hartford, Connecticut. www.floods.org

UPCOMING EMERGENCY MANAGEMENT INSTITUTE COURSES

The Emergency Management Institute (EMI) is located at the Federal Emergency Management Agency (FEMA) National Emergency Training Center (NETC) in Emmitsburg, Maryland. EMI serves as the national center for emergency management training of federal, state, and local government officials. Tuition, housing, and all books and materials are provided at no cost. Participants are responsible for the cost of a meal pass (approximately \$100). The following is a list of upcoming EMI courses through September 2013. To apply, call Diane Ifkovic, CTDEEP, (860) 424-3537 or email at diane.ifkovic@ct.gov. For more information on the courses listed, visit the EMI website: <http://training.fema.gov>.

- E170 HAZUS-MH for Hurricane—January 7-10, 2013
- E172 HAZUS-MH for Flood—July 16-19, 2012, December 3-6, 2012, May 13-16, 2013
- E174 HAZUS-MH for Earthquake—December 10-13, 2012
- E176 HAZUS-MH for Floodplain Managers— March 18-21, 2013
- E179 Application of HAZUS-MH for Disaster Operations—January 28-31, 2013
- E190 ArcGIS for Emergency Managers— October 19-November 1, 2012, March 25-28, 2013
- E194 Advanced Floodplain Management Concepts—August 27-30, 2012, August 26-29, 2013
- E202 Debris Management Planning for State, Tribal & Local Officials— March 4-7, June 10-13, 2013
- E273 Managing Floodplain Development through the NFIP— September 24-27, November 5-8, 2012, March 11-14, April 29-May 2, June 24-27, Sept 9-12, 2013
- E276 Benefit Cost Analysis: Entry Level Training— January 22-24, 2013, May 20-22, 2013
- E278 NFIP/Community Rating System (CRS)— August 6-9, September 17-20, 2012, April 1-4, May 13-16, July 29-August 1, 2013
- E279 Retrofitting Flood-prone Residential Buildings— June 25-28, 2012, May 6-9, 2013
- E282 Advanced Floodplain Management Concepts II—March 25-28, 2013
- E284 Advanced Floodplain Management Concepts III—July 9-12, 2012, July 8-11, 2013
- E296 Application of HAZUS MH for Risk Assessment—January 14-17, 2013, June 24-27, 2013
- E313 Basic HAZUS Multi-Hazards— November 5-8, 2012, April 29-May 2, 2013, July 22-25, 2013
- E317 Comprehensive Data Management for HAZUS-MH—February 4-7, 2013, August 12-15, 2013
- E386 Residential Coastal Construction—August 13-16, 2012, August 5-8, 2013

The Connecticut Department of Energy & Environmental Protection (CTDEEP) is an Affirmative Action and Equal Opportunity Employer that is committed to requirements of the Americans with Disabilities Act. To request an accommodation, please call (860) 424-3194, or email deep.hrmed@ct.gov.