

**STATE OF CONNECTICUT  
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION**

**Task Force Meeting – February 13, 2013  
Shoreline Preservation Task Force**

**Testimony Submitted by Commissioner Daniel C. Esty**

**General Comments of the Department of Energy and Environmental  
Protection on the January 14, 2013 REPORT OF THE SHORELINE  
PRESERVATION TASK FORCE**

Thank you *Chairman Albis and members of the General Assembly's Shoreline Preservation Task Force* for the opportunity to present testimony today. I am Dan Esty, Commissioner of the Connecticut Department of Energy and Environmental Protection (DEEP). I would like to use this opportunity to speak in general about the challenges we face along Connecticut's Long Island Sound coastline, as well as address the specific recommendations contained in your recent Shoreline Preservation Task Force report.

As you know, the Department has been a supporter of and active partner in the work of the Task Force over the past year. We have engaged in many productive conversations and provided information that we hope has been useful to you. All of us at DEEP appreciate the work of this Task Force and the magnitude of the issues you are tackling. We also understand the many sensitive issues that each member faces in trying to address the major storms of the past few years, which resulted in catastrophic loss of private and public property – as well in a few cases, loss of human life – in the communities that you represent. I want to assure you that the staff of DEEP and I recognize the importance of both allowing our communities to quickly recover and doing so in a way that makes us all more resilient as a state in the future.

Long Island Sound is a crown jewel of this state's natural resources and part of what makes Connecticut such a special place to live, work and visit. The Sound is a unique urban estuary that brings a rare combination of environmental significance, recreational value, and beauty to a large and diverse population that lives close by.

Long Island Sound is also a remarkable economic engine for our state – with studies placing its impact at more than \$5.5 billion a year.

But, as was made clear from two major storms that hit our coastline within just one year – Irene and Sandy - Long Island Sound is also a fragile and vulnerable resource.

Our agency has been deeply engaged in oversight of the Sound for more than four decades – first as the Department of Environmental Protection and now as DEEP. Over this time period, we have worked closely with members of this legislature, municipal partners, and property owners to balance human use and access with the need to protect and safeguard natural resources and water quality.

We know just how much the Long Island Sound means to people – to those whose families have owned homes on the shore for several generations, and to those who enjoy a vacation on the coast, a day at the beach, a walk along the water, or the joys of boating and fishing in its waters.

We also know firsthand the impact of major storms, the threat to public safety they present, and the damage to public infrastructure and private properties they cause.

So the overarching question we face is a complex one: how to foster the continued use and enjoyment of Long Island Sound while at the same time preparing for the impacts of what are likely to be more frequent and severe storms – complete with higher winds, larger waves, and bigger flood surges.

Through your work, this Task Force has done a remarkable job in identifying many of the critical issues facing our state in defining a thoughtful approach to Long Island Sound for the future. These are issues that merit the attention of the General Assembly and we look forward to a robust conversation about the Sound during this legislative session.

It is important to note that while we explore these issues together during this legislative session, DEEP will not stand pat. We continue to build on work that has been underway at the Department to improve our decisionmaking when it comes to permitting and enforcement, enhancing our support for shoreline communities and residents, and planning for the impacts of climate change.

If you will allow me just a few more minutes, I will offer more specific comments on the recommendations you have put forward. We have also provided more detailed comments on materials that have been distributed to you. After reviewing the many recommendations that the Task Force presents in its report I thought it would be most effective to group my comments into four major categories.

(1) Regulatory jurisdiction: DEEP vs. local permitting

The Task Force report contains a variety of recommendations on permitting and regulatory authority related to coastal structures. I have personally heard from both members of the Task Force and others about the challenges that many face when conducting work along the coast and want you to know that we have made a concerted effort to improve processing of requests submitted to the agency. We welcome the feedback provided by the Task Force and will engage its members as we continue our efforts to improve interactions with those within our regulatory jurisdiction to make the process faster, more predictable, more efficient, more responsive, and more transparent. While the attached materials provide a more detailed response to each recommendation and statistics on progress DEEP has made to date, I would like to assure you that this progress is not static and that DEEP is committed to continuous improvement and ongoing application of LEAN techniques to our coastal permitting programs.

For example, after Storm Irene, DEEP coastal permitting used standardized temporary and emergency authorizations to address needs of constituents along the coast. As a result of this experience, we were able to issue new temporary and emergency authorizations even as Storm Sandy approached, allowing expedited repair of damaged seawalls and the use of equipment to replace sand that had been deposited on roads and streets. After Sandy, DEEP staff was out in the field actively coordinating with applicants and town officials. As we move forward, I have asked my staff to further clarify and document guidelines for coastal projects, and streamline and simplify application requirements. To improve permit processing times we are developing several new general permits, including a general permit aimed specifically at authorizing reconstruction of storm-damaged coastal structures that have previously been permitted. We are also encouraging pre-application meetings with potential applicants, and we are exploring ways to offer suggestions early in the application process of what modifications would be required to make an application ultimately successful. We are also implementing the requirements of last year's Public Act 12-101, which requires DEEP to indicate in its formal denial of certain coastal permits the types of feasible alternatives or mitigation measures and techniques that applicants may pursue so they ultimately can present a permit application that will be approved.

I would also like to briefly explain and clarify how responsibility for coastal development regulation is shared between DEEP and municipalities. DEEP's direct permitting jurisdiction covers tidal wetlands and areas waterward of the Coastal Jurisdiction Line (formerly the high tide line). As such, we largely regulate in-water structures such as docks, seawalls and jetties, while the construction or rebuilding of houses or buildings rarely needs to come before us. Municipal land use jurisdiction extends over the entire municipality down to the mean high water line, which overlaps slightly with the Coastal Jurisdiction Line and marks the extent of private property. Issues concerning the siting, location, and construction of buildings, therefore, are essentially a municipal responsibility. Within the coastal towns, certain activities within the statutorily-defined coastal boundary also require a coastal site plan review, which is integrated into the overall municipal planning and zoning processes and timeframes. DEEP may comment on coastal site plan reviews, but has no authority to veto, delay, or dictate the local decision. If we disagree with a municipal decision, we have the statutory right to appeal to Superior Court, but we have rarely done so.

Through coastal site plans, climate adaptation workshops and otherwise, we already coordinate closely with towns and will continue to do so. As a result, we do not believe that the coastal regulatory process would be improved by shifting responsibilities from the state to the municipal level. The coastal towns have not asked for additional regulatory authority, which would impose additional procedural and financial burdens on them. In addition, since the area waterward of mean high water is owned by the state in trust for the public, and contains valuable coastal resources and habitats of statewide significance, it is appropriate for the state retain its jurisdiction over coastal permitting. We have reviewed other coastal states' policies and have found that several give state agencies a greater role in coastal development than DEEP currently has, and that none of the states we contacted has shifted or delegated regulatory authority for public trust waters to the municipal level.

In fact, when we look at the aftermath of Storms Irene and Sandy, it becomes apparent that many of the problems coastal residents and property owners face are not regulatory problems and cannot be solved solely by streamlining or relaxing the regulatory system. We believe that the flooding, storm and erosion damage brought by Irene and Sandy were primarily caused by the combination of historic development patterns colliding with increased coastal hazards of rising sea levels and more frequent and intense coastal storms. To address these problems effectively will take cooperation, flexibility,

funding, and a realization that the way things were in the past cannot necessarily be sustained into the future.

## (2) Planning for a changing climate

Preparing for and adapting to a changing climate is probably the most critical long-term issue along Connecticut's shoreline. Changing storm patterns and intensity, coupled with rising sea levels, call for careful planning and development of preparedness strategies at both the state and local level.

The statutory definition for sea level rise established in Public Act 12-101 is predicated on historic data. Much like warnings issued to financial investors, however, past performance is not always a reliable indicator of future results. The look backwards to determine sea level rise proscribed in Public Act 12-101 does not account for all possible present and future factors that can impact sea level rise. Based on predictive models for the northeast, sea level may rise between 4 and 12 inches by 2050 and 1 to 2 feet by 2080. Rapid ice melt activity has the potential to increase these numbers to 1 to 2 feet by 2050 and up to 4 ½ feet by 2100. While the range of these numbers reflects scientific uncertainty, that should not be a reason for inaction. Rational planning requires looking forward decades into the future, and I encourage the Task Force to consider allowing the executive branch to establish, based on sound science, a projected value for sea level rise for the 2050 planning horizon. When it comes to public infrastructure, we should account for the impact of sea level rise over the entire life expectancy of a project.

The science on sea level rise continues to evolve and there is a need for more localized modeling. This means that any established number should be updated on a periodic basis. A regular review of the best existing information and application of that information to Connecticut-specific conditions should be conducted by a qualified academic institution.

## (3) Rebuilding with resilience: Reducing risk in vulnerable areas

Having visited shoreline communities that experienced the impact of the last two coastal storms, I am especially sensitive to the sense of loss experienced by homeowners when their property has been destroyed, severely damaged, or become more vulnerable to the next storm. I have also heard from many of you regarding the close connection that these homeowners have to their shoreline communities, some with families who have lived on the shore for several generations. It is understandable that for some, the first reaction to storm damage is often to seek to better armor their property against these storm events.

After Irene, there was much debate on rebuilding and hardening, which led to the enactment of Public Act 12-101. Many of you have heard me frame what I believe is the prudent approach for property owners that are choosing to rebuild: (1) move upland if you can, (2) if you cannot move back, then elevate, (3) choose sustainable shoreline management techniques such as beach nourishment or living shorelines, and (4) only as a last resort consider hardening structures such as sea walls.

After Sandy and other significant weather events over the last two years, I now believe that we should begin a conversation about an additional strategy for those who experienced considerable storm damage and have concluded that the best action going forward would be to not rebuild: (5) development of a "buy out" mechanism to allow these homeowners to leave the shoreline in an

affordable way and have their property returned to its natural condition. Governor Cuomo recently put this approach forward in New York. With the authorization by Congress of Storm Sandy relief money, we may now have an opportunity to craft such a mechanism or a “buy out” fund, without impacting the state’s balanced budget or bonding levels. My staff and I will work with members of this Task Force, the General Assembly, municipal leaders, and other local stakeholders to review what other jurisdictions are proposing, flesh out a diverse set of options, and aggressively pursue federal money to develop a voluntary program to buy damaged homes and help create protected open space.

#### (4) Connecticut Resiliency Center

DEEP fully supports the Task Force’s recommendation to create a coastal resource and research center. We suggest, however, that such a center could play an even more vital and meaningful role if it has a broader charge than that envisioned in the task force report.

An academically-based multi-disciplinary institution could serve both shoreline communities and the rest of the state in a number of ways. A center could aggregate and interpret the best currently available climate science and help customize local projections for sea level rise, flooding, and storms events. It could serve as center for best practices, apply for grants, and conduct necessary research. I would suggest that you consider models such as the agriculture or manufacturing extension programs in our state and also include in the mission for the coastal resource center components for public education and direct technical assistance to homeowners.

I would be happy to offer the assistance of DEEP staff to work with members of the Task Force and staff from UCONN’s Department of Marine Sciences, Sea Grant, and Civil and Engineering programs (among others) to flesh out a more detailed proposal for establishing a coastal resiliency center. Again, I suggest that the potential availability of federal Sandy relief money may present unique opportunities for funding this work.

Finally, I urge the task force to reach out to my fellow commissioners at the Departments of Transportation, Insurance, Construction Services, and Emergency Services and Public Protection to discuss how they may be able to assist with the work of the Task Force.

I thank you for this opportunity to testify today and look forward to continuing to work with this Task Force and other members of the General Assembly on issues facing the future of Long Island Sound. If you should require any additional information, please contact DEEP’s legislative liaison, Robert LaFrance at 424-3401 or [Robert.LaFrance@ct.gov](mailto:Robert.LaFrance@ct.gov).

While there are clearly many tough issues to address, I am confident that working together we will develop positive solutions to the challenges facing our Long Island Sound coastline. In the end, we all share the same goal: maintaining all possible opportunities for the public to enjoy the benefits and beauty of the Sound in a manner that is sensitive to the preservation of natural resources – and in a manner that accounts for the reality of a changing climate.

## **Specific Comments of the Department of Energy and Environmental Protection on the Individual Recommendations in the January 14, 2013 REPORT OF THE SHORELINE PRESERVATION TASK FORCE**

### ***DEEP and Coastal Structures***

*Members of the task force recommend:*

*1. that DEEP develop a user-friendly “best practices guide” for permitting coastal structures and repair work, for use by homeowners, developers, and municipalities, for both print and online, and submit it to the task force for review;*

DEEP agrees that a user-friendly “best practices guide” is a good idea. While the Department already has developed a number of informational materials for the coastal permit program (see, e.g., [Frequently Asked Questions \(FAQs\)](#), [Coastal Permits Fact Sheet](#), [Hurricane-Related Coastal Permitting Information](#), [Post Storm Sandy Coastal Permitting Information](#)), and we are currently in the process of compiling a report on the range of shoreline protection options, we will be happy to review, update and supplement this information to make it more useful to municipalities and the regulated community.

*2. that DEEP streamline its permitting process for seawalls and other coastal structures (not unanimous);*

DEEP agrees that there are always opportunities to continually streamline and improve our coastal permitting process. Thanks to an ongoing process of LEAN innovations and other process improvements, DEEP has been making its permitting process faster and more responsive over the past few years. Overall, our average processing time for a full coastal permit has dropped from 805 days in 2003 to 160 days in 2011. The abbreviated certificate of permission (COP) process takes even less time, averaging 53 days in 2011.

In terms of responsiveness to post-storm reconstruction needs, DEEP promptly and proactively issued Emergency and Temporary Authorizations immediately after both Irene and Sandy (see [http://www.ct.gov/dep/cwp/view.asp?a=2705&Q=513182&depNav\\_GID=1635](http://www.ct.gov/dep/cwp/view.asp?a=2705&Q=513182&depNav_GID=1635)). Even without special storm procedures, DEEP has been dramatically streamlining our authorizations for rebuilding pre-existing seawalls or other coastal structures, and DEEP has greatly increased the use of the faster COP process. We have also launched a General Permit for exact replacement of pre-existing, permitted docks, which simply requires submission of a registration and no DEEP approval.

However, some applicants understandably decide to rebuild differently rather than simply to reconstruct previous structures. New structures generally require additional analysis to ensure that exposure to coastal hazards is not increased and there are no adverse impacts to resources and other properties, which usually entails the full permit process. DEEP ultimately approves the vast majority of these full permit applications. For example, from 2002 through 2012, we issued 281 full permits out of 315 applications for flood and erosion control structures, or 89%. Of those not issued, only one full permit application was denied, the rest were closed for various reasons. (Graphs and tables with permit processing statistics are found in the attached Power Point presentation.)

In essence, the nature and duration of a coastal permit process depends to a great extent on what the applicant seeks to do. Elevating a house or moving it landward, and employing non-structural shoreline

protection measures are straightforward and will always receive DEEP's full support, and may not even be regulated by us. By contrast, an application that seeks to intensify shoreline development may present a difficult situation, and will generally take longer to process.

We understand that the Task Force heard from a number of individuals who were not happy with their interactions with the Department. Many, many people suffered significant loss and hardship from Irene and Sandy and continue to work towards rebuilding their homes, properties, and lives. We recognize that this is a trying and emotionally draining process, and we are working on improving our communications and interactions with these impacted communities.

We would also invite the Task Force to carefully consider the recommendation regarding streamlining seawall permitting. While we sympathize with the desire to return a storm-damaged property to its previous condition as soon as possible, the policy of this State, as reinforced just last year by Public Act 12-101, is to discourage shoreline armoring and promote natural coastal dynamics. This policy of using seawalls as other hard structures as a last resort is supported by best practices recommended by groups as diverse as the Urban Land Institute and NOAA (see attached Lessons Learned document), and met or exceeded by other states (see OLR Report on Seawall Construction Laws in East Coast States, <http://www.cga.ct.gov/2012/rpt/2012-R-0074.htm>). The question of the nature and extent of shoreline armoring deserves additional attention and analysis, for a number of reasons:

- Sandy showed that moving back and moving up were very effective in protecting buildings. In contrast, many hard structures were destroyed or caused additional damage by redirecting wave action, causing scour behind and adjacent to the structures.
- Seawalls, revetments, groins, and bulkheads physically cannot stop storm surge and would not have spared coastal residences from Sandy. At best, they may provide temporary protection from ongoing day-to-day erosion, at the expense of beaches and other public trust resources.
- Shoreline armoring tends to sacrifice long-term adaptation and the public trust beach area, in order to favor short-term property protection. Erosion of bluffs and headlands, along with littoral movement of sand, is part of natural beach dynamics. Seawalls and other hard structures short-circuit this process by cutting off the sand supply for beaches – hence the aphorism, “Seawalls For All means Beaches For None.” The Task Force should keep in mind that it is the natural shoreline habitats and resources that ultimately create the economic value of the Sound and its shoreline. Thus, degrading coastal resources to protect developed property may become self-defeating as well as ineffective over the long-term.
- There are many alternatives to seawalls. Setbacks of houses and elevating houses tends to allow natural shoreline dynamics to operate. Beach nourishment, dune restoration and construction, and living shoreline wetland restorations are all preferable options in many cases. Coastal geologists and environmental professionals routinely regard shoreline armoring as a last resort.

*3. pre-authorizing property owners to reconstruct storm-damaged coastal structures to pre-existing conditions, if the structure was previously legally authorized;*

While DEEP agrees with this recommendation, some additional assessment may be appropriate. As noted above, the Department did issue a pre-Sandy emergency authorization for reconstruction, and we are working on a general permit that would authorize exactly what the Task Force recommends – reconstruction of previously-authorized structures to their approved dimensions. However, the Task Force may wish to explore the wisdom of rapidly rebuilding a storm-damaged structure exactly the way it was. Storm-damaged coastal structures have, by definition, proven to be inappropriate or inadequate to withstand storm forces. One could argue that there ought to be additional review, rather than no review, prior to rebuilding a structure that could not withstand a coastal storm. The “new normal” of sea level rise and more frequent or intense coastal storms may also suggest that rebuilding a damaged structure as it was may not always be the best option.

*4. improving collaboration between DEEP and municipalities to increase consistency and consumer-friendliness (not unanimous);*

DEEP agrees with this recommendation. DEEP staff takes seriously its responsibilities to coordinate with coastal municipalities, and will strive to enhance a consistent approach to shoreline planning and permitting. DEEP is also constantly working on improving its customer service.

DEEP notes that most regulation of coastal development takes place at the municipal level, not through the DEEP coastal permitting process. State regulatory jurisdiction tends to include structures such as docks and in-water seawalls, and at most places along our coastline, DEEP does not regulate construction or rebuilding of houses or buildings. As shown in the attached Power Point presentation, the area regulated by DEEP lies waterward of the coastal jurisdiction line (the high tide line, pre-Public Act 12-101) and encompasses a very narrow band of largely intertidal area. Municipalities, by contrast, regulate all development activities landward of Mean High Water (there is a small area of overlap).

Consistency between state and local levels is already mandated by the Coastal Management Act (CMA), which has for over 30 years required both this Department and municipal land use commissions to follow a common set of policies. At the state level, the CMA policies are applied largely through DEEP’s Office of Long Island Sound Programs (OLISP) coastal permitting program. At the local level the policies are implemented mostly through the coastal site plan review (CSPR), which is not a separate procedure but the application of CMA standards within the existing land use process. Local permit processes are subject to the same deadlines for municipal land use commission action and automatic approval (in the event a zoning commission does not act within the statutory deadline) as any other municipal application. Moreover, the coastal site plan review process applies only within the statutorily-defined coastal boundary, which is a fraction of the land area in each coastal town (see the attached Westbrook map).

CSPR applications may be referred to DEEP staff for review and comment, but there is no mandatory referral unless the application proposes shoreline armoring, and these are relatively infrequent. Starting in 2000 through our most recent federal reporting date of September 30, 2012, DEEP’s OLISP has staff reviewed 4,317 CSPRs, of which 397 were major projects requiring formal detailed comments and 71 were flood and erosion control structures (combined only 1.6% of the total). DEEP’s OLISP staff comments are advisory only and are not legally binding on the municipal board or commission.

Although our experience has been that towns generally appreciate DEEP's expertise and perspective, there is no state override or other sanction against a municipality for not following our advice. If a municipality makes a decision that we believe is inconsistent with CMA standards, the Department's only recourse is to appeal the municipal decision to Superior Court, an action we have taken only five times in the past 25 years.

In sum, while common statutory standards are set by the CMA for both state and municipal agencies, the implementation of those standards by 36 separate and distinct coastal towns will necessarily include some variation. Thus, if the legislature seeks to improve consistency in shoreline land use regulation, it may wish to consider enhancing the planning capacity and expert guidance available to the municipalities.

*5. improving enforcement of existing regulations to reduce the number of illegal coastal structures; and*

DEEP agrees with this recommendation, and welcomes the support of legislators for enforcement actions against unauthorized structures. A permit program is simply not sufficient to ensure compliance with statutory standards. No regulatory program can be effective without an enforcement component to ensure that violations are punished, future noncompliance is deterred, and damage from unauthorized activities is repaired or restored. This is particularly important during a rebuilding period because some people may deliberately or inadvertently build new or expanded illegal structures. In addition, as mentioned above, since most coastal development activity is regulated at the municipal level, the legislature may accordingly wish to consider means to enhance or streamline municipal enforcement authority.

*6. encouraging shoreline neighborhoods and coalitions, perhaps through regional planning organizations, to work together to create solutions that work for the greatest number (including investigating the pilot program for low-impact approaches for shoreline protection detailed in section 10 of PA 12-101), rather than merely allowing individual property owners to take actions that could harm their neighbors.*

DEEP agrees with this recommendation. Shoreline protection projects, such as beach nourishment or dune creation, would be far more effective if undertaken on a neighborhood or landscape scale rather than property by property. However, given the geological and ecological variety of Connecticut's shoreline, as well as the need to raise revenue for the projects, we would suggest that municipal taxing districts or other special districts would allow a more effective institutional framework than would multi-town regional planning agencies.

## ***Municipalities and Land Use Regulation***

*Members of the task force recommend:*

- 1. providing incentives for municipalities to plan for the effects of sea level rise on public infrastructure (not unanimous);*

DEEP agrees with this recommendation, and strongly supports forward-looking planning at all levels of government to deal with all the effects of climate change, not just sea level rise. Inland flood protection, green infrastructure, and resilient transportation systems should all be addressed, taking a long-term perspective corresponding with the expected life of the infrastructure facilities. As a model for Connecticut, we suggest that the Task Force consider a recent report from New York on the resilience of New York's infrastructure: *NYS 2100 Commission, Recommendations to Improve the Strength and Resilience of the Empire State's Infrastructure*, found at <http://www.rockefellerfoundation.org/news/publications/nys-2100-commission-report-building>.

Going beyond infrastructure, the Department has already been engaged in ongoing climate change adaptation efforts. Under Public Act 08-98, *An Act Concerning Connecticut Global Warming Solutions*, the Governor's Steering Committee on Climate Change established an Adaptation Subcommittee charged with evaluating, "the projected impact of climate change in the state on: (1) Infrastructure, including, but not limited to, buildings, roads, railroads, airports, dams, reservoirs, and sewage treatment and water filtration facilities; (2) natural resources and ecological habitats, including, but not limited to, coastal and inland wetlands, forests and rivers; (3) public health; and (4) agriculture." This assessment effort resulted in two reports.

The first, *The Impacts of Climate Change on Connecticut Agriculture, Infrastructure, Natural Resources and Public Health* (2010), can be found on the Connecticut Climate Change website (<http://ctclimatechange.com/wp-content/uploads/2010/05/Impacts-of-Climate-Change-on-CT-Ag-Infr-Nat-Res-and-Pub-Health-April-2010.pdf>). Workgroups, comprised of subject-matter experts, assessed the risk of climate change impacts on Connecticut infrastructure, natural resources, public health and agriculture from changes in precipitation, temperature and sea level rise occurring at three temporal benchmarks during this century (2020, 2050 and 2080).

The second report, *Connecticut Climate Change Preparedness Plan Adaptation Strategies for Agriculture, Infrastructure, Natural Resources and Public Health Climate Change Vulnerabilities* (Draft 2012), can also be found on the Connecticut Climate Change website (<http://ctclimatechange.com/wp-content/uploads/2012/04/Draft-2011-Connecticut-Climate-Change-Preparedness-Plan.pdf>). The workgroups recommended several overarching and specific adaptation strategies, grouped into five basic themes: intensify efforts to ensure preparedness planning, integrate climate change adaptation into existing plans, update existing standards to accommodate change expected during infrastructure design life, plan for flexibility and monitor change, and protect natural areas and landscape features that buffer climatic conditions.

*2. making more explicit the requirement in PA 12-101 that municipalities consider sea level rise (based on a consistent set of data) and climate change adaptation in their plans of conservation and development;*

DEEP agrees with this recommendation. Municipalities should consider future climate-related conditions in assessing their future growth and development. However, in order to consider projected future conditions, the recently enacted definition of “sea level rise” in Public Act 12-101 may need to be amended to incorporate projections as well as historic data, and to set a planning horizon either as a fixed term of years (e.g., 10, 25, or 50 years) or at the useful life of a proposed structure. Neighboring states such as New York and Rhode Island have established official statewide sea level rise projections and timeframes for planning purposes. The Task Force may wish to investigate our neighboring states’ methods and other best practices when considering how to designate sea level projections and planning timeframes for Connecticut.

*3. examining the ability to expedite DEEP responses to applications as well as examining a more meaningful response to said applications upon denial by DEEP and to determine if DEEP will relinquish certain applications to local authority;*

DEEP agrees with the first part of this recommendation. As discussed above, DEEP seeks continuous improvement of its coastal permitting program and has already have made significant progress in expediting certain types of permits. DEEP has encouraged pre-application meetings with potential applicants, and DEEP is improving how it communicates deficiencies in permit applications when they are initially filed. DEEP is finding ways to offer suggestions early in the application process of what modifications would be required to make an application ultimately successful.

Outright denials of coastal land use applications are rare at both state and local level however there have been some recent legislative changes to the coastal permitting process that may help applicants navigate a denial of their application. Last year’s Public Act 12-101 added subsection 22a-92(c)(2)(F) of the Connecticut General Statutes, which applies to shoreline flood and erosion control structures that are denied on the basis of a finding that there may be feasible, less environmentally damaging alternatives or that reasonable mitigation measures and techniques have not been provided. This new section requires the Commissioner to indicate in any formal denial the types of feasible alternatives or mitigation measures and techniques that the applicant may investigate. In addition, Public Act 12-100 also allowed applicants for DEEP coastal permits and 401 Water Quality Certifications to obtain a contested case hearing before a Department hearing officer, and to appeal final decisions on such applications directly to Superior Court.

As to the second aspect of the recommendation, DEEP would not support legislation devolving additional coastal regulatory authority from the State to municipalities, for the following reasons:

- Towns already regulate most aspects of coastal development, using the same statutory standards of the Coastal Management Act as the state does. Additional regulatory responsibilities for coastal structures would create an unfunded mandate on municipal land use agencies, most of which have little or no institutional capacity for implementing new regulatory authority. While some towns do have greater capacity than others, none have requested to take over any state permitting responsibilities.

- Intertidal and offshore areas waterward of mean high water are held in trust by the State for the public, and it would be inappropriate to establish municipal authority over State-owned lands and waters.
- Because of the statewide significance of coastal resources, other states have even a stronger state role in coastal land use regulation than Connecticut does, in an attempt to increase statewide consistency of coastal zone regulatory actions. For example, Rhode Island's coastal management program regulates development activities up to 200 feet inland from a coastal feature, and Florida is considering enacting new statewide standards to ensure consistency among local governments.

*4. increasing financial assistance to municipalities and nonprofit land conservation groups to acquire open space and watershed land for passive or active recreation, tidal wetland preservation, conservation of coastal marine habitats, flood control, and adaptation to climate change and sea level rise;*

DEEP agrees with this recommendation. The Department has a long history of distributing grants funds for exactly these purposes, with a focus on important habitats and implementing the State's Green Plan. As the State's Green Plan evolves in 2013, the importance of coastal preservation will be highlighted. Given available funding, we would be happy to assist with determining acquisition priorities, and we encourage the Task Force to explore creative financing options to provide the necessary assistance given today's constrained budget climate.

*5. requiring local zoning codes to reflect the "new realities" of sea level rise and new flood elevations, and provide for staged adaptation to them, and allow municipalities and the state to consider sea level rise as it may impact a site or site access, as a factor in making decisions regarding natural resources in coastal site plan or public health permit reviews for sub-surface sewage disposal;*

DEEP agrees with this recommendation and will be happy to work with the Task Force to implement it. As the Task Force knows, FEMA Flood Insurance maps are already being updated, and FEMA has recommended that municipalities anticipate the new flood elevations in their zoning ordinances. In addition, issues regarding the effects of saltwater intrusion and rising groundwater levels on on-site septic systems deserve much more analysis.

*6. including detailed assessments of shoreline towns' evacuation and sheltering capabilities in municipal Hazard Mitigation Plans to ensure there are mechanics and facilities to handle future emergency and storm crises; and*

DEEP agrees with this recommendation. Many (if not all) municipalities are already considering evacuation assessments as they update their Hazard Mitigation Plans, in conjunction with FEMA and the Department of Emergency Services and Public Protection. DEEP also has been participating in workshops, trainings, and offering technical support to communities for hazard mitigation and coastal development, including the CHAMP, CART and StormSmartCoasts websites referenced below.

*7. requiring that propane and other fuel tanks be secured prior to an extreme storm event.*

DEEP agrees with this recommendation. Floating propane tanks and overturned and leaking basement home heating oil tanks posed significant environmental hazards during Irene and Sandy, and required action by DEEP's hazardous spill response unit.

### ***Insurance and Real Estate***

*Members of the task force recommend:*

- 1. increasing the transparency of insurance policies, including clear wording to advise the insured that a policy does not provide coverage for flood insurance, identifying when hurricane deductibles apply, and requiring insurance companies to inform the insured at each renewal whenever a percentage deductible is on their policy describing how the deductible would be applied at the time of loss;*

For this section of recommendations, DEEP generally defers to the Department of Insurance.

- 2. requiring the Insurance Department to serve as a facilitator and liaison between insurance companies and the Federal Emergency Management Agency (FEMA) to expedite the paperwork associated with paying for storm-related damages and repairs;*

DEEP agrees with this recommendation, and believes that the Insurance Department is already working with FEMA on this issue. DEEP notes that our staff sit on the FEMA Long Term Recovery Taskforce that is co-chaired by the Insurance Department, and DEEP partners with the Insurance Department on many climate change events and workshops in Connecticut.

- 3. encouraging private insurance companies and other stakeholders to develop a list of incentives to encourage homeowners and small businesses to take measures to mitigate hurricane or major storm impacts (such as appropriate retrofits), possibly in the form of actuarially supported insurance premium credits;*

DEEP agrees with this recommendation, and notes that the National Flood Insurance Program already offers premium reductions for elevating houses above baseline requirements. Also, the FEMA Long Term Recovery Taskforce mentioned above has started to consider additional incentives.

- 4. identifying and informing property and business owners whose properties are in flood zones following the implementation of new FEMA flood maps, so they are aware of the risks and understand the importance of flood insurance;*

DEEP agrees with this recommendation, and supports additional educational and outreach efforts for all property owners and residents affected by the National Flood Insurance Program and flood zone mapping, including both inland and coastal areas.

*5. requiring condominium associations in FEMA flood zones to purchase adequate flood insurance to cover individual units and common property and maintain FEMA-required paperwork;*

DEEP agrees with this recommendation, and supports all property in flood zones having and maintaining adequate flood insurance.

*6. requiring full disclosure in real estate sales transactions of home additions or construction elements that are not fully authorized or have not been given the proper certificate of occupancy; and*

DEEP agrees with this recommendation, and believes it could be broadened. Prospective purchasers should have complete information regarding whether the property they are about to buy complies with all applicable standards. Accordingly, we suggest that this recommendation be expanded to provide notification of any unauthorized coastal structures such as docks or seawalls, as well as of any existing structures that are legally nonconforming but not in compliance with current FEMA or zoning standards.

*7. changing real estate disclosure laws to require property owners to disclose if a property is located in a high erosion area or a FEMA coastal flood zone.*

DEEP agrees with this recommendation. Whether or not changes in existing real estate disclosure laws or practices are necessary, DEEP strongly supports notifying prospective purchasers of the range of coastal hazards they may experience, in addition to the FEMA flood zone designation.

### ***Climate Change and Sea Level Rise***

*Members of the task force recommend:*

*1. Engaging Connecticut academic institutions and non-profits, in conjunction with DEEP and federal agencies, to conduct research and guide development of technology and best management practices from Connecticut municipalities and other states to enhance the resilience of coastal communities to coastal hazards and a rise in sea level, and investigate incentives to become more resilient;*

DEEP agrees with and strongly supports this recommendation. Local governments, consultants and property owners need authoritative, research-based guidance on best practices and appropriate technologies to enhance resilience of landscapes, communities, and individual sites.

*2. identifying the economic and workforce development opportunities associated with climate change adaptation and mitigations strategies;*

DEEP agrees with this recommendation. Appropriate and sustainable shoreline construction or reconstruction will create employment opportunities in the construction trades, and the adoption of new strategies such as adaptive infrastructure design and living shoreline will create potential construction, design, and engineering jobs.

*3. developing computer mapping applications to help envision impacts based on different scenarios of sea level changes and storm activity and strengthening or moving infrastructure assets currently in harm's way;*

DEEP agrees with this recommendation, and would be happy to work with the Task Force to develop and expand awareness of computer-based scenarios of coastal hazards and sea level rise, many of which already exist and are accessible on the Internet. In addition to DEEP's own Coastal Hazards Analysis and Management Project Coastal Hazards Mapping Tool [http://www.ct.gov/dep/cwp/view.asp?a=2705&q=480782&depNav\\_GID=2022](http://www.ct.gov/dep/cwp/view.asp?a=2705&q=480782&depNav_GID=2022) and The Nature Conservancy's Coastal Resilience—Adapting Natural and Human Communities to Sea Level Rise and Coastal Hazards Project <http://coastalresilience.org/geographies/new-york-and-connecticut>, the following visualization and risk assessment tools are available from Connecticut's Adaptation Resource Toolkit (ART, <http://ctclimatechange.com/index.php/towns/art-adaptation-resource-tool-kit-home-page/welcome-to-process/art-conducting-a-vulnerability-assesment/>) to enhance knowledge on how climate change will be manifested at the local level:

- [CT DEEP Coastal Hazards Portal and Visualization Tool](#)
- [FEMA HAZUS Software](#)
- [The Nature Conservancy Visualization Tool](#)
- NOAA's [Coastal Inundation Toolkit](#) and [Habitat Priority Planner](#)
- The [National Resource Conservation Service's Web Soil Survey](#) and [Soil Data Mart](#)
- [New England Environmental Finance Center's COAST tool](#)
- [Can Vis](#) offers advanced photo shop to create visuals of hypothetical futures.
- [Storm Surge Visualization Tool](#) uses Light Detection and Ranging (LIDAR) data that will soon be available to Connecticut communities from [USGS](#).
- [Sea Level Affecting Marshes Model \(SLAM\)](#)

*4. preparing a shoreline map identifying high hazard areas that are vulnerable to extreme weather conditions and rising sea levels, and compiling a statewide coastal infrastructure inventory to assess the risks of infrastructure in high hazard areas and identify potential adaptation strategies;*

DEEP agrees with this recommendation, and would be happy to work with the Task Force to address at-risk infrastructure, using the mapping tools described above, the historic shoreline change analysis DEEP is currently undertaking along with Sea Grant and CLEAR, as well as National Flood Insurance Program maps.

*5. developing historical mapping of changes in shoreline including measurements of erosion, transport, and accretion rates;*

DEEP agrees with this recommendation, and would be happy to work with the Task Force on mapping shoreline change, since Department staff are already engaged in such projects as mentioned above.

*6. adopting legislation to provide clear guidance to DEEP to consider climate change adaptation strategies in coastal permitting;*

DEEP agrees with this recommendation, and would welcome clearer guidance on how to apply climate change adaptation criteria to individual coastal permit applications. However, the most effective adaptation strategies, such as elevation and relocation of houses and integration of natural sedimentation and erosion processes, may not always be those proposed or desired by permit applicants.

*7. adopting legislation to require sea level rise to be addressed in the design for construction or upgrade of sewage treatment plants or supporting infrastructure financed by the state's Clean Water Fund;*

DEEP agrees with this recommendation, and will ensure that any sewage treatment plant construction financed by the Clean Water Fund, which the Department administers, will consider sea level rise and coastal hazards in the design of the project.

*8. amending the statutory definition of "rise in sea level" for planning purposes, to enable planners to consider projected increases in the rate of sea level rise based on National Oceanic and Atmospheric Administration data; and*

DEEP agrees with this recommendation, and believes that it is necessary to reconsider the current statutory definition of sea level rise. Given the evidence that rates of sea level rise are accelerating, it may not be adequate for planning purposes to rely solely on historical sea levels. Perhaps more importantly, it would be very helpful to have a sea level rise planning target, for example, a rise of one foot by 2050, or a number tied to a project's life cycle, at least for state-funded projects. Another alternative would be a legislative prediction recommended for municipal planning use, to be established or revised by the Coastal Resource and Education Center recommended below.

*9. require DOT to develop a plan for addressing the impacts of climate change on transportation infrastructure.*

DEEP agrees with this recommendation, and we support efforts at both state and municipal levels to identify infrastructure facilities at risk from sea level rise and coastal storms, and to plan for their future sustainability. Climate change also brings increased possibility of more intense precipitation events with the attendant risk of inland flooding, which is already occurring to some extent (see <http://precip.eas.cornell.edu/> on New England and New York Extreme Precipitation Events from past 60+ years of data). In fact, many infrastructure facilities, such as frequently flooded coastal roads and sewage treatment plants that must discharge untreated sewage as a result of combined sewer overflows, are already severely impacted under current conditions.

## **Education and Information Resources**

*Members of the task force recommend:*

1. *implementing an aggressive statewide education campaign to capitalize on the raised awareness after Irene and Sandy of the impacts of climate change and sea level rise on the state's economy and shoreline;*

DEEP agrees with this recommendation, and we would be happy to work with the Task Force on further efforts at educating local officials and the public on climate change and sea level rise issues. The Task Force may recall DEEP's outreach activities described in Jennifer Pagach's March 27, 2012 presentation on the CT Climate Change Education Communication workgroup she co-chairs and the Adaptation Resource Toolkit and other information at [www.ctclimatechange.com](http://www.ctclimatechange.com). Currently DEEP staff are working with multiple coastal communities as well as academic, state agency and non-profit partners on adaptation solutions, and would welcome the Task Force's input and support. Attachment A provides a list of some of these initiatives.

2. *developing a Connecticut coastal resource and research center to provide public service information on coastal issues;*

DEEP agrees with and strongly supports this recommendation. Connecticut is one of the few coastal states without a federally-funded National Estuarine Research Reserve (a deficiency that should be rectified, if at all possible), and other states also benefit from university-based research centers such as the Virginia Institute of Marine Science, which has done leading work on living shorelines. However, out-of-state institutions are not best placed for serving the coastal informational needs of Connecticut residents and communities, and our Long Island Sound shoreline is distinctive enough that not all existing research is directly applicable. Since Connecticut is also the home of world-class academic talent and research capacity, we should be able to create the institutional framework to advance practical shoreline adaptation practices to meet current and future needs.

3. *developing education programs to promote rain gardens and similar measures.*

DEEP agrees with this recommendation. The widespread dissemination of green infrastructure and innovative nonpoint source control practices has long been recognized as a major state priority, and is routinely mentioned in DEEP's workshops and presentations to the public. The need for green infrastructure techniques will only become more urgent, especially since increased intensity rainfall and runoff events have already been well documented in the region, see <http://precip.eas.cornell.edu/>. UConn's Center for Land Use Education and Research (CLEAR), particularly its NEMO and Sea Grant programs, conducts a number of programs associated with rain gardens, shoreline/riparian buffers and green infrastructure and will certainly appreciate legislative support.

### **Financial Assistance for Property Owners**

*Members of the task force recommend:*

- 1. providing low interest loans to help property owners improve resiliency (not unanimous); and*

DEEP agrees with the principle underlying this recommendation – that shoreline property owners should be encouraged to undertake projects to improve the resiliency of their property, particularly in terms of moving or elevating buildings. Funding these types of resiliency improvements may prove challenging in today’s budget climate. However, DEEP would welcome the opportunity to work with the Task Force on this issue.

- 2. exploring creation of a program or fund to compensate and assist property owners with voluntary relocation (not unanimous).*

DEEP agrees with this recommendation, and as stated in Commissioner Esty’s general remarks above, supports further investigation and analysis of a relocation fund. The investigation of a relocation program or fund should explore community-level solutions, and not just focus on issues with isolated individual properties. There is a possibility that federal post-Sandy funds may be available for this purpose, as New York Governor Cuomo has already proposed.

### **Open Space and Protected Lands**

*Members of the task force recommend:*

- 1. appointing a group to identify high priority open space acquisition areas that could buffer storm surge and address marsh migration.*

DEEP agrees with and strongly supports this recommendation. Department staff currently review and prioritize parcels for acquisition for a variety of conservation and recreation purposes. DEEP’s acquisition efforts have and will continue to look for opportunities to safeguard our coastline. As additional funding becomes available, DEEP is well positioned to respond.

### **Building Code**

*Members of the task force recommend:*

- 1. ensuring that state-of-the-art building resiliency standards are incorporated in the state building code and*

DEEP agrees with this recommendation, and supports the adoption of best building practices in coastal hazard areas.

- 2. requiring more aggressive updates to the building code to reflect sea level rise and increased flooding risks.*

DEEP agrees with this recommendation. The state building code should be updated as necessary to reflect coastal hazard risks that will foreseeably occur during the life of a structure.

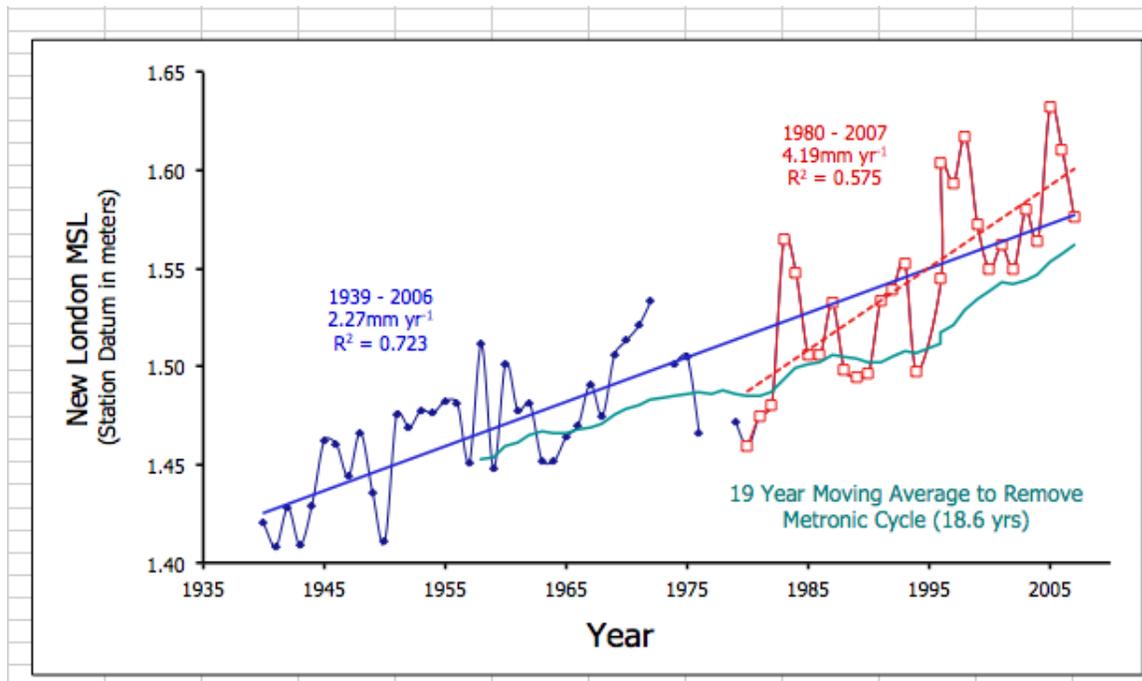
## Appendix A

Climate Change/Coastal Resilience Resources  
Contact Jennifer Pagach (860) 424-3295 [Jennifer.pagach@ct.gov](mailto:Jennifer.pagach@ct.gov)

CT is a leader in adaptation; we have a number of tools developed for communities as well as robust outreach efforts and other support. We have also compiled historic monitoring information to track climate change and inform adaptation strategies so it is done in the most economically and environmentally sound way. The following are notable examples with active links:

The *Connecticut Adaptation Resource Toolkit* or CART is one stop shopping for climate adaptation tools, resources and strategies for Connecticut communities on the official state climate website, <http://ctclimatechange.com/> under “Towns”, direct link <http://ctclimatechange.com/index.php/towns/art-adaptation-resource-tool-kit-home-page/> CART is organized to lead individuals and community staff and leaders to targeted legal, financial education and other resources, including a way to search by profession or area of interest. There is also a whole section to the website organized by where you are in a planning process. Many other resources are on the Adapting to Climate Change page under the “Learn” tab at <http://ctclimatechange.com/index.php/learn/adaptation/>

*Sentinel Monitoring of Climate Change for Long Island Sound* is a bi-state and federal effort to compile and use historic monitoring to track what is happening in LIS, and merge with evolving climate models to inform resource management and adaptation strategies. Since the 1980's, sea level rise has accelerated and water temperatures have risen in Long Island Sound, beyond background levels that had remained constant since the beginning of the last century. Strategic Plan and indicators at: <http://longislandsoundstudy.net/research-monitoring/sentinel-monitoring/> and the Data Citation Clearinghouse with all related data sources is to be posted this year. OLISP is also scaling up this concept for the New England/Gulf of Maine region through the Northeast Regional Oceans Council (NROC).



In 2010, OLISP planned and held cutting edge *Groton Coastal Climate Change Adaptation Workshops* using Groton as a model for what a coastal community adaptation planning process would look like, including coordinating federal, state and local government with academic and NGO partners. The final report and presentations from the series that engaged over 100 people from local state and federal government is here: [Groton Workshops](#) As a result Groton has started considering climate change in their planning process. The [final report](#) contains lessons learned for other communities who would rather start saving than losing money to poor planning, and to state government in CT and beyond. Through the modeling performed by the New England Financial Institute of even modest storm and sea-level acceleration, the most expensive alternative was to do nothing, and even a modest infrastructure enhancement saved many hundreds of thousands of dollars. The March 2010 500-year storm the day before the second workshop on [vulnerabilities](#) illustrated just how expensive business as usual is, as many eastern towns are still faced with expensive bridge, road, and other infrastructure repair bills, and this is even before the multiple coastal storms such as Irene and Sandy.

CHAMP, a *Coastal Hazards and Management Planning* section of the DEEP website that contains choose your own inundation from SLR scenarios for all CT towns and information for what towns and the public can do

[http://www.ct.gov/deep/cwp/view.asp?a=2705&q=480750&deepNav\\_GID=2022](http://www.ct.gov/deep/cwp/view.asp?a=2705&q=480750&deepNav_GID=2022)

In a recent NOAA Grant to New England on "accelerating the pace of municipal response to coastal climate change", CT was only state to have more than one town selected for funding of adaptation projects, Guilford for workshops/town plan and Greenwich is mapping for enhanced emergency response. Both projects are well underway.

OLISP is partnering with CLEAR/UConn/SeaGrant to host additional climate workshops this year with multiple interested coastal towns to identify and support adaptation solutions that have

economic benefit and do not degrade natural resources. We are providing state of the art technical support and leveraging national legal and financial expertise to ensure CT communities stay in the lead. We have already had a workshop in Westbrook and are scheduling with Madison, Waterford, and possibly Greenwich.

CT DEEP has a Municipal Climate Change Network of towns and state staff who are moving forward with cutting edge climate efforts, and a CT Climate Education Communication Committee which is a varied group of educators from the private, government and academic sector who meet virtually or in person every month to keep informed on best available science and educational practices <http://ctclimatechange.com/index.php/act/climate-change-education-communication-group/>