



The Municipal Primer

Your Guide to
Creating a
"Green and Growing"
Community



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Commissioner





Photo: University of Connecticut

Land Use Boards, Commissions, Agencies and Committees



Pictured — Jordan Cove
Urban Watershed National
Stormwater Monitoring Project,
Waterford, Connecticut

Land Use Boards, Commissions, Agencies and Committees

Includes: Planning, Zoning, Combined Planning and Zoning, Inland Wetlands and Watercourses, Conservation, Economic Development, Historic Districts, Aquifer Protection and all others that control or have an interest in the use of land.

A variety of municipal boards, commissions, agencies and committees have responsibilities associated with land use that may coincide with CT DEP programs and authorities, such as stormwater management, sediment and erosion control, wetlands and watercourses protection, surface water quality, aquifer protection, public water supply, site remediation, and open space preservation. Some of these connections are obvious, such as with inland wetlands commissions; others are less so, such as with economic development agencies, cemetery commissions, boards of education, or building committees.

Most of the information in this section is intended for use by land use boards and commissions (planning, zoning, combined planning and zoning, zoning appeals, and inland wetlands); however, other boards, commissions and committees will find it helpful in understanding some CT DEP recommendations and requirements.

To aid in coordination between municipal boards, commissions, agencies and committees and the CT DEP, this section of *The Municipal Primer* provides fact sheets on the following topics:

- *Avoiding Jurisdictional Conflicts*

Planning Considerations

- *Environmental and Landscape Stewardship*
- *Watershed Management*
- *Floodplain Management*
- *Aquifer Protection Area Program*
- *Nonpoint Source Pollution Management*
- *Coastal Management*
- *Streets and Roads Planning*
- *Brownfields Remediation*

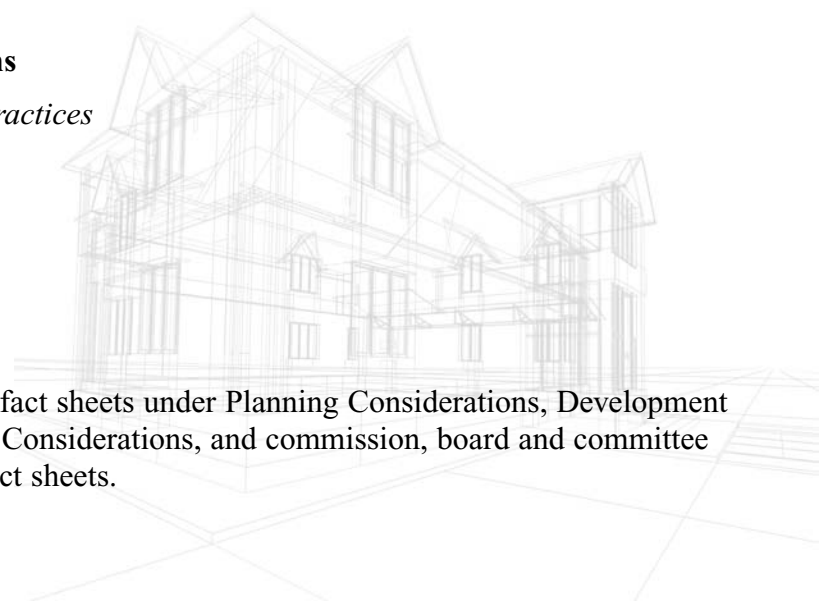
Development Standards Considerations

- *Environmentally Sensitive Land Use Practices*
- *Low Impact Development*

Resource Considerations

- *Water as a Natural Resource*
- *Endangered Species*

There is substantial overlap between the fact sheets under Planning Considerations, Development Standards Considerations, and Resource Considerations, and commission, board and committee members are encouraged to review all fact sheets.



Land Use Boards, Commissions, Agencies and Committees

Other related fact sheets in *The Municipal Primer* are:

Stormwater Management (Public Works)

Indoor and Outdoor Lighting and Appliances (Public Works)

Landscape and Lawn Care (Public Works)

Municipal Wastewater Management Planning (Wastewater Planning and Management)

Protected Open Space (Parks and Recreation)

Greenways (Parks and Recreation)

Outdoor Recreation (Parks and Recreation)

Outdoor Wood-burning Furnaces and Woodstoves (Public Safety and Building Official)

Wildlife Issues: Animal Possession, Nuisance Animals & Wildlife Rehabilitators (Public Safety and Building Official)



Description

The Connecticut General Statutes and associated regulations grant direct regulatory authority and responsibility to both municipalities and the CT DEP. Some of these authorities and responsibilities are exclusive and others overlap. Several of these areas have routinely been sources of confusion.

Municipal Responsibility

Municipal officials need to consider where they have exclusive regulatory authority and responsibilities, where municipal and CT DEP authorities and responsibilities coincide, and where municipal jurisdiction is excluded.

Statutory Citations

Inland Wetlands: CGS Sections 22a-36 through 22a-45a

Dams: CGS Sections 22a-401 through 22a-411

Stream Channel Encroachment Lines: CGS Sections 22a-342 through 22a-349a

Tidal Wetlands: CGS Sections 28 through 35a

High Tide Line: CGS Section 22a-359(c)

Coastal Management Act: CGS Sections 22a-90 through 22a-112

Harbor Management: CGS Sections 22a-113k through 22a-113t

Discussion

Jurisdictional questions frequently arise regarding the regulation and management of inland wetlands, dams, tidal wetlands, coastal waterfront, coastal development and harbors. Each of these is discussed below.

Inland Wetlands

In general, except for activities conducted by state or federal agencies, the responsibility and authority for regulating activities in and adjacent to inland wetlands and watercourses lies with the municipal inland wetlands commission. An appeal of a local decision

must be taken to Superior Court. As discussed below, some activities in inland wetlands will also require CT DEP issuance of a Section 401 Water Quality Certification.

Dams

Dams can be characterized based on their hazard classification as either: 1) those dams whose failure might endanger life or property downstream; and 2) all other dams. The CT DEP generally regulates the construction and major repair of dams that fall under the first category. Other dams are typically regulated by local inland wetlands agencies and, in some instances, other municipal authorities. Still other dams, typically those used for hydroelectric power generation and those on federal property, are managed by the federal government and are not subject to state or local permitting authorities; however, in some instances federal agencies will voluntarily coordinate with state and local authorities when planning dam construction or maintenance.

Routine dam maintenance activities (cutting and removal of brush and trees, mowing of dam embankments, removal of debris, restoration of minor erosion, etc.) on all non-federally controlled dams, are also regulated locally, by the inland wetlands agency and, in some instances, other municipal authorities. However, this local authority is overridden when the CT DEP issues either an order or a permit for dam repairs or construction. In these instances, the wetlands impacts associated with these activities are regulated by the CT DEP to the exclusion of the local inland wetlands agency. Notices of the Department's intention to issue a permit for dam repair or construction and the issuance of a dam repair order are provided to both the local inland wetlands agency and the chief executive official of the municipality where the dam is located.

Stream Channel Encroachment Lines

Stream Channel Encroachment Lines (SCEL) are limits beyond which the placement of encroachments or obstructions is regulated by the CT DEP to reduce hazards to life and

Avoiding Jurisdictional Conflicts

property due to flooding. SCEL have been established for about 270 linear miles of riverine floodplain throughout the state. The presence of designated SCEL does not prevent a municipality from regulating the activity pursuant to the inland wetlands and watercourses statutes.

Tidal Wetlands

All activities proposed within tidal wetlands are subject to CT DEP permitting to the exclusion of municipal inland wetlands commissions. However, the CT DEP does not regulate activities occurring on uplands adjacent to tidal wetlands. Regulation of upland activities is done through the coastal site plan review process (see Coastal Development, below).

High Tide Line vs. Mean High Water

Under its coastal permitting authority, the CT DEP has direct regulatory jurisdiction over activities occurring from the high tide line towards the water (waterward) in tidal, coastal and navigable waters in the State of Connecticut. Municipalities regulate activities on the upland down to mean high water under their local planning and/or zoning authorities. The high tide line is not the same as mean high water. Except for portions of shoreline that have a vertical face (e.g., along bulkheads or seawalls), the high tide line generally falls higher (landward) than mean high water resulting in an area that lies between mean high water and the high tide line where both the CT DEP and municipal planning and/or zoning authorities have jurisdiction. In areas between the high tide line and mean high water, proposed activities must meet the standards and criteria of both regulating entities.

Coastal Development

Standards for coastal development in Connecticut are contained in the goals and policies of the Connecticut Coastal Management Act (CCMA). The CT DEP has responsibility for ensuring that state and federal activities and permitting are consistent

with these goals and standards. Coastal municipalities are responsible for implementing the CCMA goals and policies for all other activities within their respective coastal boundaries. This is accomplished through the Coastal Site Plan Review (CSPR) process. CSPRs are conducted on a case-by-case basis as part of the local land use approval process. The Commissioner of CT DEP is party to all CSPRs; however, an appeal of a local CSPR decision must be taken directly to Superior Court.

The CT DEP Office of Long Island Sound Programs provides technical assistance to the planning commission, zoning commission (or combined planning and zoning commission) and the zoning board of appeals of the coastal municipalities to help them understand the proper application of the CCMA goals and policies. This assistance is provided through comments on individual projects and through training that can generally be provided upon request.

Harbor Management vs. Coastal Permitting

Any municipality that has navigable water within its borders may establish one or more Harbor Management Commissions (HMC). Inter-municipal HMCs can also be established where navigable waters straddle municipal boundaries. Each municipal ordinance establishing an HMC must specify the areal limits of its jurisdiction (the harbor). Such planning must be done in conjunction with the CT DEP and the CT Department of Transportation, and the final plan must be approved by the CT DEP before it is adopted locally.

Once a harbor management plan has been approved and adopted, the HMC has the authority to review land use proposals on abutting upland, and activities regulated by others on or in the water, for consistency with the adopted plan. Permit decisions made by the CT DEP and Army Corps of Engineers within the harbor must almost always be consistent with an approved and adopted plan.

An HMC does not have independent permitting authority but provides guidance to state and local permitting authorities that are making regulatory decisions affecting the HMC's defined harbor. The purpose of an HMC is to plan for the most desirable use of their harbor. Establishing an HMC does not negate the CT DEP's authority to regulate activities in tidal wetlands, or in tidal, coastal or navigable waters.

Section 401 Water Quality Certification

The Federal Clean Water Act Section 401 Water Quality Certification Program is administered by the Bureau of Water Protection and Land Reuse's Inland Water Resources Division and Office of Long Island Sound Programs. The Program applies to activities requiring federal licenses or permits when the activity may result in a discharge into navigable waters, which include wetlands, watercourses, natural and man-made ponds, and other surface waters. Certification that the discharge is consistent with the Federal Clean Water Act and the Connecticut Water Quality Standards must be obtained from CT DEP prior to the start of the activity. In making a decision on a request for 401 Water Quality Certification, the CT DEP must consider the effects of a proposed discharge on ground and surface water quality, as well as existing and designated uses of receiving waters. Any conditions contained in a water quality certification become conditions of the federal permit or license.

An applicant for a federal license or permit, including a dredge and fill permit from the U.S. Army Corps of Engineers, a bridge construction permit from the U.S. Coast Guard, or a permit from the Federal Energy Regulatory Commission (FERC), must obtain a 401 Water Quality Certificate from CT DEP if the proposed activity may result in a

discharge into the state's navigable waters. Such discharges include the discharge of dredged and fill material; incidental discharge of sediments from dredging or excavating; the discharge of stormwater both during construction and from a constructed facility; and any excavation, flooding, draining, clearing or grading in or affecting navigable waters, including wetlands, watercourses, natural and man-made ponds, and other surface waters.

Potential CT DEP Permits, Registrations and/or Certifications

CT DEP:

Inland Wetland Permits for state projects

Construction and major repair of dams whose failure might endanger life or property downstream

Encroachments or fill waterward of stream channel encroachment lines

Coastal permits for activities waterward of the high tide line in tidal, coastal or navigable waters or in tidal wetlands.

Section 401 Water Quality Certification for discharges to inland or coastal waters

Municipal:

Inland Wetlands Permits for non-state and non-federal Projects

Also, municipalities have responsibility for coastal site plan approvals and harbor management consistency reviews, where applicable.

Financial Assistance

Financial assistance is not available at this time (6/2008).

Avoiding Jurisdictional Conflicts

Model Regulations For Municipal Consideration

See www.ct.gov/dep/landscapestewardship and select “Tools for Towns and Cities” from the left navigation bar to find links to model regulations for:

Aquifer Protection

Inland Wetlands

Tidal Wetlands Buffers

Coastal Site Plan Review Exemptions

Web Pages

Inland Wetlands

www.ct.gov/dep/wetlands

Dam Construction

www.ct.gov/dep/permits&licenses Select “Air, Waste, Water and Land Use” then select “Land Use Permits.”

High Tide Line vs. Mean High Water

www.ct.gov/dep/coastalmanagement Select “Coastal Planning” on the left navigation bar, then select “Coastal Management Manual,” open Section I of the Manual and select the “State and Municipal Regulatory Jurisdictions Fact Sheet.”

Tidal Wetlands

www.ct.gov/dep/wetlands

Coastal Site Plan Review / Coastal Management Manual

www.ct.gov/dep/coastalmanagement Select “Coastal Planning” on the left navigation bar then select “Coastal Management Manual” and open Section I.

Model Regulations

www.ct.gov/dep/landscapestewardship Select “Tools for Towns and Cities” on the left navigation bar.

Contacts

Inland Wetlands

Inland 401 Water Quality Certification

Dams

Stream Channel Encroachment Lines

Bureau of Water Protection and Land Reuse

Inland Water Resources Division

Phone: 860-424-3706

Coastal 401 Water Quality Certification

Tidal Wetlands

High Tide Line vs. Mean High Water

Coastal Site Plan Review Responsibilities

Harbor Management vs. Coastal Permitting

Bureau of Water Protection and Land Reuse

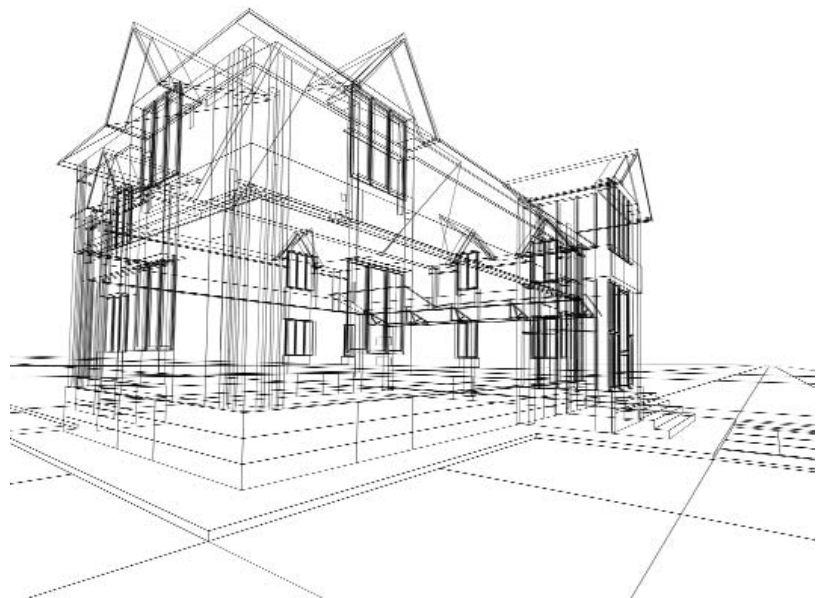
Office of Long Island Sound Programs

Phone: 860-424-3034



Boards,
Commissions,
Agencies and
Committees

Planning
Considerations



Description

Environmental stewardship is the careful and responsible management of the state's natural resources and the environment for both present and future generations.

Landscape stewardship is a broader effort by the CT DEP to promote environmental stewardship combined and balanced with thoughtful and responsible growth, with the overall goal of enhancing the quality of life in the state.

Municipal Connection

Municipalities are on the front line of environmental and landscape stewardship through the implementation of their regulatory authorities and responsibilities related to land use.

Municipal Responsibility

Municipalities are encouraged to make land use and development decisions in a manner that supports both environmental and landscape stewardship, and provides for sustained economic health.

Statutory Citations

Municipal Zoning: CGS Sections 8-1 through 8-13a

Municipal Planning: CGS Sections 8-18 through 8-30f

Coastal Management: CGS Sections 22a-90 through 22a-112

Discussion

There are several basic tenets in environmental and landscape stewardship:

- design with the land by avoiding:
 - steep slopes
 - significant blasting
 - significant grading

- development in floodways
- highly erodible soils
- prime agricultural soils
- notable trees;
- preserve sensitive resources by protecting them from direct (e.g., dredging, filling) and indirect adverse impacts (e.g., changes in hydrology, temperature, shading, nutrient loading, water quality). Sensitive resources include:
 - vernal pools
 - other wetlands, both inland and tidal, including floodplains
 - habitats for species of greatest conservation need (federally or state-listed as rare, endangered and threatened species of plants and animals)
 - FEMA (Federal Emergency Management Agency) floodways and NFIP (National Flood Insurance Program) 100-year floodplains
 - coastal resources (with some exceptions such as “shorelands,” developed shorefront, and certain areas of coastal hazard zones);
- preserve cultural resources and traditional working lands including:
 - stone walls
 - cemeteries and graveyards
 - historic sites
 - working farms;
- minimize environmental impacts by encouraging “green building” practices including:
 - implementing low impact development techniques to maintain site hydrology
 - landscaping with native species
 - utilizing energy efficient site and building design; and

Environmental and Landscape Stewardship

- promote vibrant urban, suburban and village centers by encouraging:
 - infill development
 - brownfields reuse
 - mixed uses
 - “walkable” downtowns
 - transit oriented development
 - alternate transportation (e.g., providing bikeways, trail connections)
 - variety in housing opportunities.

These basic tenets can be applied at all levels of land use planning, from statewide and regional planning through municipal planning and zoning to the design of neighborhoods or individual sites. Municipalities are encouraged to participate in regional planning activities, which may include watershed planning, aquifer protection area management and/or coastal management. Town-wide planning and design efforts are likely to include reviews and updates of local plans of conservation and development, water pollution control plans, sewer service areas, subdivision regulations, and/or zoning regulations. Those responsible for planning for neighborhood revitalization and/or the development of individual site plans are encouraged to incorporate the tenets noted above.

Potential CT DEP Permits, Registrations and/or Certifications

None specific to this program.

Financial Assistance

Financial assistance is not available at this time (6/2008).

Model Regulations for Municipal Consideration

Yes. On the Web at:
www.ct.gov/dep/landscapestewardship. Select “Tools for Towns and Cities” on the left navigation bar.

Web Pages

www.ct.gov/dep/landscapestewardship

Although not a CT DEP Web page, information on creating a sustainable community is available through *ICLEI - Local Governments for Sustainability*. ICLEI is an international association of local governments and national and regional local government organizations that have made a commitment to sustainable development. Several Connecticut municipalities are members. Additional information can be found on-line at:
www.iclei.org/.

Contacts

Office of the Commissioner
Planning and Program Development
Landscape Stewardship Initiative
Phone: 860-424-3618

Bureau of Water Planning and Land Reuse
Watershed Coordinators Program
Phone: 860-424-3020

Bureau of Water Planning and Land Reuse
Office of Long Island Sound Programs
Coastal Planning Section
Phone: 860-424-3034

Descriptions

Watershed

A watershed is an area of land that drains or sheds water into a specific body of water, such as a lake or a river. Every body of water (e.g., rivers, lakes, ponds, streams, estuaries and Long Island Sound) has a watershed and everybody living in Connecticut lives within a watershed.

Watershed Management

Watershed management describes the process of integrating, coordinating and implementing comprehensive land use and water management practices to protect and improve the quantity and quality of the water and other natural resources within a watershed.

Municipal Connection

With few exceptions, municipalities are responsible for planning and regulating land development within their boundaries (state and federal actions and tribal actions on reservation lands are the key exceptions). Unless carefully designed, constructed and maintained, land use and/or development can have a detrimental impact on water resources, including contributing nonpoint source pollution, which is the number one threat to water quality (see the fact sheets on *Stormwater Management* (Public Works) and *Nonpoint Source Pollution Management* (Boards, Commissions, Agencies and Committees) for more information).

By actively participating in watershed-based planning efforts, municipalities can effectively and efficiently reduce the impact of development on water quality and quantity. Incorporating principles of responsible growth, and considering and mitigating the effects of development on downstream waters are typically part of these efforts. Implementing Low Impact Development best management practices can further protect water quality and quantity (see fact sheet on *Low Impact Development* (Boards, Commissions, Agencies and Committees) for further information).

Municipal Responsibility

Municipalities have no regulatory responsibilities under CT DEP's watershed management program; however, they are strongly encouraged to participate in any local watershed management effort. The CT DEP will coordinate with municipalities on a regional level on any such effort.

Because municipalities are principally responsible for planning and zoning for growth, development, and land use, they assume responsibility for ensuring that land use is consistent with public goals for maintaining and protecting water quality. Participation in watershed-based planning efforts is an effective way to ensure that water quality goals are addressed effectively and growth is managed in a responsible manner.

Statutory Citation

Not applicable.

Discussion

Land and water resources are naturally connected and together, they support the state's entire environment. As rainwater or melted snow runs downhill in a watershed, it collects and transports sediment and other materials and carries them into the receiving waterbody (wetlands, rivers, streams, lakes, ponds and Long Island Sound), which can result in significant amounts of pollution over time. Watershed management helps control pollution of the water and other natural resources in the watershed by identifying the different kinds of pollution present in the watershed, where the pollutants come from, and how they are transported. Watershed management can also recommend ways to reduce or eliminate these pollution sources. Watershed management balances the demands on natural resources to provide for multiple uses including adequate water supply, recreation, ecological demands and aesthetic purposes. Watershed management integrates multiple environmental concerns related to land use and water

Watershed Management

resources into a single comprehensive approach.

Watershed management is a process that results in a unified plan or blueprint of how to best protect and improve the quality and quantity of water and other natural resources in a watershed, while simultaneously supporting economic development and growth. Integrating resource management in this manner is an effective and efficient way to ensure long-term quality of the land and water resources in the state's watersheds.

The CT DEP has a statewide Watershed Management Program with coordinators assigned to various geographic regions (see map at www.ct.gov/dep/watershed). The Watershed Coordinators work with municipalities, non-profit organizations and others on a wide variety of watershed projects and issues. The issues to be resolved in a watershed management plan vary depending on the specific characteristics of the watershed and may include: ensuring adequate stream flows; addressing flooding, erosion, or siltation; protecting riparian habitat; managing invasive species; and providing for recreation and water supply. Other watershed issues relate to chemical quality, low flows, high flows, fish passage, habitat, and activities on the upland that impact all of these environmental components. Watershed management is the integration of all aspects of water resources management that may impact water quality and quantity, including how it relates to land use.

Very often, watershed boundaries extend beyond political boundaries into adjacent municipalities and/or states. That is why a comprehensive planning process that involves all affected municipalities in the watershed is essential to successful watershed management. Since all partners have a stake in the health of the watershed, the process should be inclusive and engage all affected parties in the watershed as a means to successful, long-term management of the land and water resources. Involving all affected parties, including municipalities, is also an efficient way to

prioritize the implementation of watershed management plans in times when resources may be limited.

Potential CT DEP Permits, Registrations and/or Certifications

This is not a regulatory program so there are no specific CT DEP permits associated with it. However, please be aware that CT DEP permits may be required for individual actions identified in a watershed management plan.

Financial Assistance

Grants may be available to develop and implement watershed-based planning. For more information, see <http://www.ct.gov/dep/watershed>.

Model Regulations for Municipal Consideration

Yes. See www.ct.gov/dep/landscapestewardship. Select "Tools for Towns and Cities" on the left navigation bar and scroll down to "Model Regulations."

Web Page

<http://www.ct.gov/dep/watershed>

Contact

Bureau of Water Protection and Land Reuse
Planning and Standards Division
Watershed Coordinators Programs
Phone: 860-424-3020



Description

Floodplains are areas adjacent to a body of water (river, stream, lake, pond, etc.) that become flooded under certain conditions.

Municipal Connection

Municipalities are primarily responsible for determining the activities that are appropriate for areas within floodplains, either through their planning efforts, including plans of conservation and development and hazard mitigation planning, or through the permitting authority of the local inland wetlands and watercourses commission.

Municipal Responsibilities

All Connecticut municipalities are responsible for planning for flood hazard mitigation, which logically includes restricting use of floodplains to those that are compatible with periodic flooding.

Coastal municipalities are required under the Connecticut Coastal Management Act to ensure that development in coastal floodplains proceeds in a manner that minimizes risk to life and property, and that non-structural solutions to flooding problems are promoted over structural solutions.

Statutory Citations

Inland: CGS Sections 25-68b through 25-68h

Coastal: CGS Sections 22a-90 through 22a-112

Discussion

Flooding is the number one natural hazard in Connecticut. Flooding generally occurs in floodplains, which are areas adjacent to a body of water (river, stream, lake, pond, etc.) that under certain conditions, often related to rainfall or snowmelt, become flooded.

Floodplains can vary in width depending upon the contours of the land surrounding the water body.

Flooding can significantly disrupt the operation of a municipality. It can interrupt essential services, disrupt or destroy public infrastructure, and place high demands on public safety officials. In addition, flooding can cause substantial personal property damage.

National Flood Insurance Program

Property damage from flooding is not covered by standard homeowners insurance, but only by the purchase of individual flood insurance policies. Such policies are only issued in communities that are participating in the National Flood Insurance Program (NFIP). Participation in the NFIP requires a community to adopt and enforce floodplain management regulations designed to mitigate the effects of flooding on new and improved structures.

The NFIP standards should be considered minimum guidelines. They are intended to maintain the flood capacity of waterways and reduce potential impacts to buildings and other structures within the floodplain. However, they do not address emergency access during a major flood event. Nor do NFIP standards address any of the other environmental functions that floodplains provide. These functions include: supporting valuable and sensitive habitat for flora and fauna, some of which may be species of special concern; providing valuable soils that should be preserved for agricultural use; and protecting and enhancing water quality. Municipalities are encouraged to protect these public values by adopting floodplain management regulations and ordinances that are more stringent than those necessary to meet the minimum standards set by the NFIP.

Stream Channel Encroachment Lines

In order to lessen the flooding hazards to life and property, CT DEP regulates the placement of encroachments and obstructions riverward of stream channel encroachment lines. Stream channel encroachment lines have been established for about 270 linear miles of

Floodplain Management

riverine floodplain throughout the state, and are shown on stream channel encroachment line maps, which are on file in the town clerk's office in affected towns. An index to the maps is available from CT DEP. In making a decision on a stream channel encroachment line permit application, CT DEP must consider the impact of proposed activities both on the floodplain environment, including wildlife and fisheries habitats, and the flooding hazards the proposed activity poses to people and property.

Coastal Management

Under the Connecticut Coastal Management Act, coastal cities and towns are required to ensure that development in coastal flood plains proceeds in a manner that minimizes risk to life and property, and that non-structural solutions to flooding problems are promoted over structural solutions. Non-structural solutions include, but are not limited to: locating or relocating residential and other sensitive uses outside of the flood zone to the extent possible; establishing buffers that include coastal flood hazard zones, where practicable; and minimizing densities within coastal flood zones. Structural solutions, which are strongly discouraged and in some instances disallowed, include seawalls, bulkheads, revetments, riprap and other materials that prevent natural erosion of shorelines.

Potential CT DEP Permits, Registrations and/or Certifications

Stream Channel Encroachment Line permits are required for the placement of encroachments and obstructions riverward of stream channel encroachment lines, which have been designated for certain stream locations.

Any state agency proposing an activity, including providing funding via grant or loan for an activity by others, within or affecting a floodplain or which impacts natural or man-made storm drainage facilities must acquire a Floodplain Management Certificate. Such activities include: a) the proposed placement of

any structure, obstruction or encroachment within the floodplain area; b) any proposal for site development which increases peak runoff rates; c) any grant or loan which affects land use, land use planning or the disposal of state property in floodplains; or d) any program regulating flood flows within the floodplain.

If an activity is proposed in a floodplain waterward of the high tide line in tidal, coastal or navigable waters, CT DEP coastal permits are generally required.

All floodplain projects should be reviewed to determine whether municipal inland wetlands and watercourses and/or municipal zoning approval are required.

Financial Assistance

Financial assistance is not available at this time (6/2008).

Model Regulations for Municipal Consideration

No.

Web Pages

Flood Management

www.ct.gov/dep Under "Programs and Services" at the top of the page, select "Flood Management."

Stream Channel Encroachment Lines

www.ct.gov/dep/permits&licenses Select "Air, Waste, Water and Land Use" then select "Land Use Permits." Scroll down to "Programs Administered by the Inland Water Resources Division" and select "Stream Channel Encroachment Fact Sheet."

Coastal Permits

www.ct.gov/dep/coastalmanagement Select "Coastal Permitting."

Coastal Management Manual

www.ct.gov/dep/coastalmanagement Select "Coastal Planning" on the left navigation bar then select "Coastal Management Manual."

Contacts

Inland Floodplains

Bureau of Water Protection and Land Reuse

Inland Water Resources Division

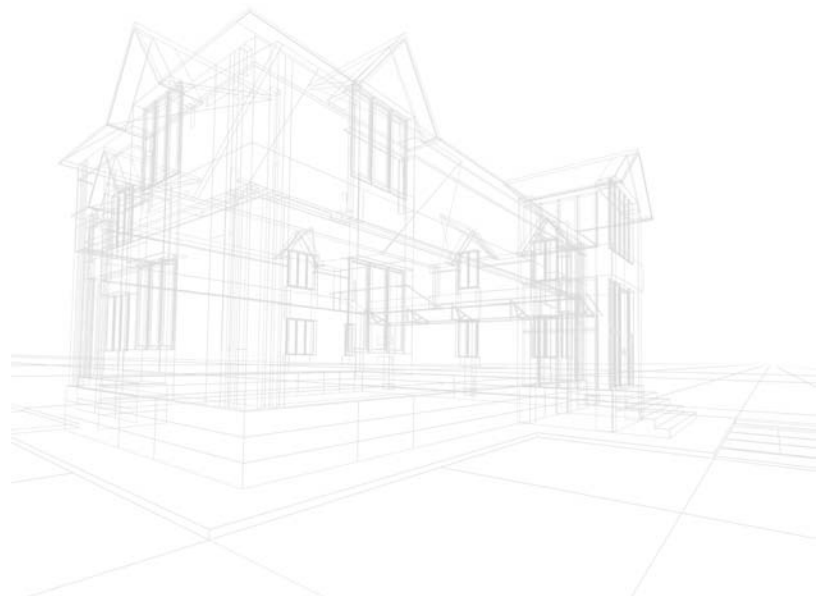
Phone: 860-424-3019

Coastal Floodplains

Bureau of Water Protection and Land Reuse

Office of Long Island Sound Programs

Phone: 860-424-3034



Aquifer Protection Area Program

Description

Connecticut's Aquifer Protection Area (APA) Program protects major public water supply wells in high yield sand and gravel aquifers to ensure a high quality supply of public drinking water for present and future generations.

Municipal Connection

Eighty-one municipalities in Connecticut with active public water supply aquifers that serve more than 1000 people are required to establish Aquifer Protection Areas (sometimes referred to as "wellhead protection areas").

Municipal Responsibility

Affected municipalities have specific regulatory responsibilities under this program to protect public water supply aquifers as required by statute.

Statutory Citation

CGS Sections 22a-354a through 22a-354bb

Discussion

Long-term, sustainable water supply is a concern in Connecticut. There are certain areas of the state where high-yield, sustainable sand and gravel aquifers exist. Although most areas in Connecticut overlie groundwater aquifers, the APA Program protects only sand and gravel aquifers that have public water supply wells supplying 1000 people or more. The CT DEP, affected municipalities and water companies share responsibilities for the APA Program.

The Role of CT DEP

The CT DEP is responsible for: the overall administration of the APA Program; establishing state mapping; developing land use regulations and standards; approving aquifer protection area maps and local regulations; and developing guidance materials. The CT DEP also: provides training for the local APA officials and aquifer protection agency members; assists municipal aquifer protection agencies with program

implementation; directly regulates major facilities, state facilities and public service companies (utilities) located within the aquifer protection areas; and educates the public about ground water protection.

The Role of Municipalities

Municipalities in the program are required to appoint an existing board or commission as the aquifer protection agency. However, the members of this agency essentially "wear two hats" and it is important for the appointed board or commission to distinguish between their actions under the aquifer protection authorities and responsibilities and those of their other functions.

Municipalities with aquifer protection agencies must adopt stand-alone regulations that are separate from other municipal regulations (e.g., they can not be incorporated into the municipal zoning regulations). The local aquifer protection regulations must be consistent with and, according to a recent opinion by the Attorney General, cannot be stricter than those established by CT DEP.

Municipalities must also inventory land uses within the aquifer protection area and designate the aquifer protection area boundary. The aquifer protection agency regulates land use activities within the aquifer protection area by: registering existing regulated activities; issuing permits for new regulated activities; overseeing regulated facilities; and educating citizens about ground water protection.

The Role of Water Companies

Water companies, both municipal and private, are required to map aquifer protection areas according to state mapping regulations. When this mapping is finalized, it defines the regulatory boundaries for the municipal land use regulations. In addition to mapping, the water companies assist towns with their protection programs and oversight of the aquifer protection area, conduct well field monitoring to warn of contamination, and plan for land acquisition and protection around well fields.

Aquifer Protection Area Program

Potential CT DEP Permits, Registrations and/or Certifications

Regulatory responsibility is shared between the CT DEP and local aquifer protection agencies. The CT DEP regulates major manufacturing-type activities, utility facilities, and state facilities. Municipalities regulate all other land use activities in aquifer protection areas.

Regulated land uses include activities that use, store, handle, or dispose of hazardous materials and other potential ground water contaminants. Businesses that participate in these activities within an aquifer protection area are required to register their existing regulated activities and, if changes are proposed, obtain permits for new regulated activities. Establishing new regulated activities on new sites is prohibited in aquifer protection areas.

All registered and permitted activities are required to follow best management practices or standards designed to minimize the possibility of ground water pollution.

Financial Assistance

Financial assistance is not available at this time (6/2008).

Model Regulations for Municipal Consideration

Yes. Follow the “Municipalities” link on the Web page noted below.

Web Page

www.ct.gov/dep/aquiferprotection

Contact

Bureau of Water Protection and Land Reuse
Planning and Standards Division
Aquifer Protection Area Program
Email: aquiferprotection@po.state.ct.us
Phone: 860-424-3020



Description

Runoff from either rainfall or snowmelt moves over and through the ground and along the way, it picks up and carries natural pollutants and pollutants resulting from human activity. This mix of runoff and the contaminants it carries is considered “nonpoint source pollution” (NPS). Unlike point sources of pollution (e.g., a company’s wastewater discharge or a municipal sewage treatment plant outfall), NPS comes from many dispersed points of origin. Although runoff from land surfaces is the primary source of NPS in Connecticut, failing septic systems, contaminants infiltrated into the groundwater and changes to natural hydrology also contribute to the problem.

Municipal Connection

Developed land is a significant cause of NPS and constitutes an overall greater threat to water quality than point source discharges such as industrial outfalls. In Connecticut, by law and by custom, municipalities control most land use and development within their boundaries.

In many parts of the state, contributions from numerous small residential parcels of property combine to form potentially problematic NPS areas, which can have a major impact on the state’s water resources. Municipalities can play a significant role in educating residents on how their behavior contributes to nonpoint source pollution.

Municipalities have the ability to assess their current land management practices when deciding how to reduce potential impacts of NPS.

Municipal Responsibility

Most municipalities in Connecticut are required to comply with the MS4 Stormwater General Permit (see the fact sheet on *Small Municipal Separate Storm Sewer Systems* (MS4) under the Public Works for more information). Beyond that, most municipalities

have no specific requirements to implement state NPS requirements. However, towns are strongly encouraged to review their land use regulations (zoning, subdivision and inland wetlands) and modify them where necessary to incorporate nonpoint source best management practices.

Statutory Citation

CGS Section 22a-430(b)

Discussion

NPS is unlike water pollution from point sources (e.g., factories, permitted stormwater outfalls, municipal wastewater treatment facilities) in that it is diffuse in both its origin and the way in which it enters ground and surface waters. It is like point sources of water pollution, however, in that it may ultimately affect many different uses of water resources. If pollutants from NPS become sufficiently concentrated, as might happen over time if such sources are not controlled, the surface or groundwater may become impaired and unable to support desirable uses (e.g., fishing or swimming). The presence of this pollution can result in beach closures; fishing and shellfishing restrictions and prohibitions; and sedimentation or other impairment of aquatic habitats, including low dissolved oxygen (hypoxia), which can cause fish kills and loss of other aquatic organisms. Large amounts of freshwater runoff discharged directly into saltwater tidal wetlands along the coast can also upset the delicate balance of fresh and salt water in the wetland ecosystem, often resulting in the invasion of undesirable freshwater plant species and the degradation of tidal wetlands.

Pollutant levels, or loadings, from NPS are influenced by human activities and are also closely linked to rainfall, thunderstorms, snowmelt and other weather conditions that contribute to runoff. Runoff from developed land is the primary source of NPS in Connecticut. This is commonly known as “urban runoff,” regardless of whether it originates in our cities, suburbs or village

Nonpoint Source Pollution Management

areas. Converting undeveloped land to residential, commercial or industrial uses or to roads, highways and bridges can cause or increase site erosion during and after construction. The sediment created by this erosion is a significant component of NPS pollution. Poorly planned development can also increase post-construction NPS runoff volumes and velocity when vegetated areas are paved or covered with buildings.

Urban runoff can carry sediments, nutrients, road salts, heavy metals, petroleum hydrocarbons, and pathogens, and transport them into receiving waters. Some air pollutants (e.g. mercury, nitrogen and acidifying compounds) are added through atmospheric deposition. Additionally, failing or inadequate septic systems can cause localized water quality problems, releasing pathogens and nutrients to groundwater and surface waters that ultimately discharge to Long Island Sound. Even properly functioning conventional septic systems can release nutrients that contribute to hypoxia problems. One of the biggest challenges to controlling NPS is that urban runoff has many sources.

When considering new development, or modifications to existing land development, there are measures municipalities can take to reduce and mitigate NPS pollution. A project in the Jordan Cove watershed in Waterford, CT compared NPS runoff from a traditional subdivision with that from a subdivision designed and constructed to include multiple NPS best management practices (BMPs). The results of 10 years of monitoring this project have demonstrated that the use of NPS BMPs greatly improved the quality of receiving waters when compared to the subdivision that did not implement the comprehensive management measures.

Additional information on minimizing NPS can be found in the *2004 Connecticut Stormwater Quality Manual* available on-line at www.ct.gov/dep/stormwater. Whether a permitted stormwater point source or true NPS

runoff, many of the practices that are promoted in this manual apply. More specifically, this manual provides guidance on the measures necessary to protect the waters of the State of Connecticut from the adverse impacts of post-construction stormwater and NPS runoff. With a focus on site planning, source control, and runoff treatment practices, this manual is intended for use as a planning tool and design-guidance document by the regulated and regulatory communities involved in stormwater and NPS quality management.

Connecticut's NPS Program

A significant strength of Connecticut's NPS Program is its "networked" approach to nonpoint source management. Joint nonpoint source management programs have been initiated with: the USDA Natural Resources Conservation Service and Farm Services Agency; the State Departments of Public Health, Transportation, and Agriculture; Soil and Water Conservation Districts; University of Connecticut Cooperative Extension System; regional planning organizations; municipal government agencies (wetland, zoning, planning, and conservation commissions); academic institutions; watershed associations; environmental groups; and business and trade organizations. Citizens groups have played a major role in volunteer monitoring, planning, and public involvement activities.

Financial Assistance

Under section 319 of the federal Clean Water Act (§319), Connecticut receives federal grant money which can support a wide variety of activities aimed towards managing NPS. The current focus is on developing and implementing watershed-based plans designed to correct NPS-related impairments, particularly for those bodies of water included on the List of *Connecticut Waterbodies Not Meeting Water Quality Standards*. Guidance on developing watershed based plans is available on the CT DEP Web site at www.ct.gov/dep/watershed.

The NEMO Program

The NEMO (Nonpoint Education for Municipal Officials) Program, located at the University of Connecticut, was created in 1991 to assist local land use decision-makers in understanding the NPS impacts of their decisions and alternatives available to manage NPS. Although not a CT DEP program, NEMO is a valuable source of information and training related to NPS. Additional information is available on-line at http://clear.uconn.edu/tools/lid_reg/.

Potential CT DEP Permits, Registrations and/or Certifications

While there are no CT DEP permits specific to NPS control, the following CT DEP permits, registration or authorizations influence NPS and may be required:

Water Diversion Permit

Section 401 Water Quality Certification

Stream Channel Encroachment Lines Permit

General Permit for the Discharge of Groundwater Remediation Wastewater Directly to Surface Water;

Stormwater and Dewatering Wastewaters from Construction Activities

Stormwater Associated with Industrial Activities

Applicable policies, guidelines and regulations may be found in:

- Water Diversion Regulations
- CT Water Quality Standards and Classifications
- 2006 List of Connecticut Waterbodies Not Meeting Water Quality Standards
- Remediation Standard Regulations
- General Conditions Applicable to Water Discharge Permits and Procedures and Criteria for Issuing Water Discharge Permits

Financial Assistance

Yes, through Section 319 of the federal Clean Water Act.

Model Regulations for Municipal Consideration

Although not specific to NPS, model stormwater management regulations are available at: www.ct.gov/dep/stormwater. Scroll down to the link to the *2004 Connecticut Stormwater Quality Manual*. Model ordinances are found in Appendix C.

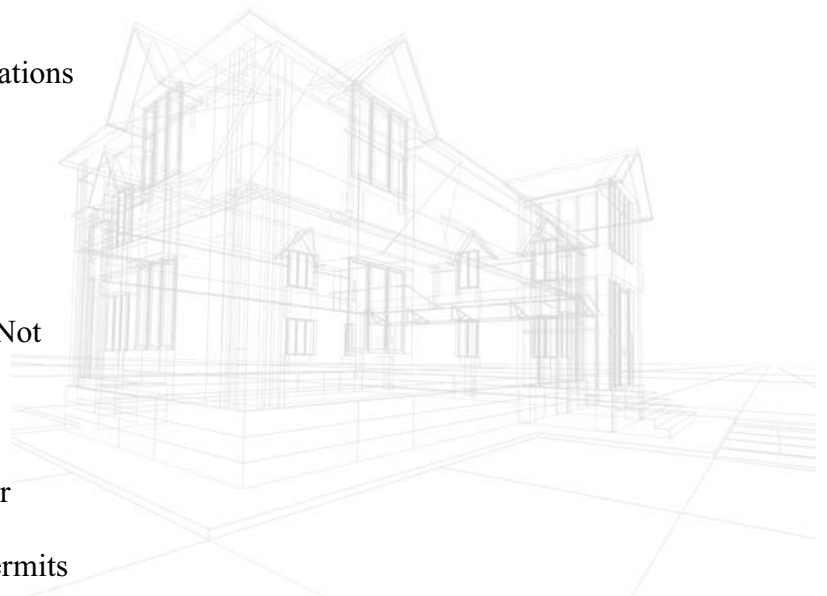
See “Tools for Towns and Cities” link on the left navigation bar of the CT DEP Landscape Stewardship Web pages at: www.ct.gov/dep/landscapestewardship.

Web Page

www.ct.gov/dep/nps

Contact

Bureau of Water Protection and Land Reuse
Planning and Standards Division
Watersheds, Lakes and Nonpoint Source
Implementation Program
Phone: 860-424-3020



Description

Coastal management in Connecticut is a comprehensive, cooperative program that functions at all levels of government to guide the activities taking place where the land meets the sea to protect coastal resources and promote water-dependent uses.

Municipal Connection

The 36 coastal municipalities in Connecticut have specific responsibilities to protect coastal resources and promote water-dependent uses while supporting sustainable economic uses of coastal lands. Most of this responsibility statutorily lies with the local planning and/or zoning commissions and zoning boards of appeals.

Municipal Responsibility

Connecticut's coastal municipalities are responsible for implementing Connecticut's coastal management program when making land use and development decisions through the coastal site plan review process.

Statutory Citation

CGS Sections 22a-90 through 22a-112

Discussion

Connecticut's coast is a valuable asset worthy of protection. Our coastal area provides myriad opportunities to residents and tourists alike for recreation, public access, commercial fishing, marine trades and international shipping, as well as habitat for fish, shellfish, birds, plants and other wildlife. We all use our coast and we all have to work together to make sure it is available for future generations.

Coastal management goals and policies are stated in the Connecticut Coastal Management Act (CGS sections 22a-90 through 22a-112), and are applied by municipal planning, zoning, and combined planning and zoning commissions and zoning boards of appeals to projects within the coastal boundary, which extends approximately 1000 feet landward

from mean high water or the upland edge of tidal wetlands. (Mean high water is recognized as the waterfront landowner's property line.)

By law, municipalities are instrumental in coastal management in Connecticut. Through the coastal site plan review process, municipal coastal programs and harbor management, municipalities ensure that land use and development in the coastal boundary is consistent with the statutory goals and policies. To help municipalities with this responsibility, each of the 36 coastal towns has a designated coastal management liaison within CT DEP's Office of Long Island Sound Programs. Coastal municipalities are encouraged to update their municipal coastal program plan, or the coastal management section of the local plan of conservation and development to reflect the statutory goals and policies. The Office of Long Island Sound Programs can provide technical assistance in these efforts and may be aware of funding sources to help develop or implement such plans.

In implementing coastal management, the CT DEP encourages municipalities to take special consideration of:

- urban waterfront revitalization;
- watershed management and nonpoint source pollution control;
- protecting and encouraging water-dependent uses;
- increasing public access;
- restoring coastal habitat;
- planning for coastal hazards;
- promoting harbor management;
- facilitating research;
- managing and protecting coastal resources; and
- protecting the public trust (the land and waters waterward of mean high water).

Coastal Management

Potential CT DEP Permits, Registrations and/or Certifications

Authorizations are required for work in tidal wetlands and waterward of the high tide line within tidal, coastal or navigable waters.

Financial Assistance

Financial assistance is not available at this time (6/2008). Occasionally planning grants are available.

Model Regulations For Municipal Consideration

Tidal Wetlands Buffers:

www.ct.gov/dep/wetlands Select “Tidal Wetlands” then select “Tidal Wetlands Buffer Guidance Document.”

Coastal Site Plan Review Exemptions:

www.ct.gov/dep/coastalmanagement Select “Coastal Land Use Planning” then select “Coastal Manual.” The *Coastal Site Plan Review Exemptions Fact Sheet* is in Section I of the Manual.

Stormwater:

www.ct.gov/dep/stormwater follow link to the *2004 Connecticut Stormwater Management Manual* and see Appendix C.

Web Page

www.ct.gov/dep/coastalmanagement

Contact

Bureau of Water Protection and Land Reuse
Office of Long Island Sound Programs
Coastal Planning Section
Phone: 860-424-3034



Description

Careful planning of the layout, construction, repair and maintenance of existing and future streets and roads can minimize potential environmental impacts associated with local transportation systems.

Municipal Responsibility

Municipalities are authorized by statute to “establish, lay out, construct, reconstruct, alter, maintain, repair, control, operate, and assign numbers to streets, alleys, highways, boulevards, bridges, underpasses, sidewalks, curbs, gutters, public walks and parkways.” Many new roads are created through the subdivision of land, which is regulated on the local level. Such roads must comply with standards set forth by the municipality. Municipalities are responsible for maintenance and repair of non-state public roads within their boundaries.

Statutory Citations

Street and Roads: CGS Section 7-148(c)(6)(C)

Public Shade Trees: CGS Sections 23-58 through 23-65e and CGS Section 7-131(d).

Discussion

Comprehensive planning for new or reconstructed municipal road systems should be done to facilitate movement throughout and between municipalities, to minimize potential adverse impacts to Connecticut’s environment and to protect and enhance the local quality of life. From an environmental perspective, municipalities should carefully consider layout options, stormwater management techniques and the ultimate streetscape, including street trees and other plantings.

Layout

How municipalities choose to locate, construct, reconstruct, and maintain their roadways can make a vast difference in Connecticut’s natural and cultural environment. Innovative

alternatives to traditional layouts and standard design, construction, operation and maintenance can reduce air pollution, protect water resources, minimize waste disposal costs and, in many instances, save other monies. Planning new roads in a grid or carefully interconnected fashion, rather than in a series of cul-de-sacs, provides for improved traffic flow, particularly on nearby arterial roads, as well as improved emergency access, evacuation, and overall public safety. However, there are trade-offs to be considered. As examples: 1) where the terrain would require substantial earth-moving to establish a gridded road system, it may be more appropriate to follow the contours of the landscape; and 2) conservation subdivisions typically rely on cul-de-sacs to provide vehicular access, in part as an effort to minimize the footprint of the development. Regardless, consideration should be given to providing adequate interconnections between roads, both new and existing (i.e., limit the establishment of new cul-de-sacs).

Designing new streets and roads with the narrowest paved surface able to accommodate use and access needs can calm traffic and aid in mitigating road-related nonpoint source pollution. In some cases, utilizing pervious pavers or structurally-supported vegetation can provide increased functional width for emergency vehicles on roads that might otherwise be considered too narrow.

Stormwater

Streets, roads, highways, parking lots and other paved areas for vehicle use constitute the bulk of the impervious surfaces in Connecticut. Studies have shown that as the percentage of impervious surface in a watershed rises, the quality of streams and rivers falls. There are ways to counteract this effect. With careful planning, the construction or improvement of streets, roads and parking lots can incorporate stormwater management best management practices, which will lessen the impact on the environment.

Streets and Roads Planning

A sampling of stormwater best management practices related to streets and roads includes:

- narrowing roads to the extent practicable without jeopardizing safe and reasonable emergency access;
- reducing or eliminating curbing;
- utilizing sheet flow, vegetated swales or other ground surface practices that encourage infiltration (rather than subsurface piped collection systems); and
- incorporating alternatives to impervious pavement where appropriate.

Stormwater best management practices can promote and advance environmental stewardship and responsibly address quality-of-life issues. Detailed information on alternative road and parking lot design is provided in CT DEP's *2004 Connecticut Stormwater Quality Manual* (see Chapter 4).

Streetscape / Landscaping

The vitality of urban, suburban and village centers, and the beauty of the highways and byways that connect them, often relate to their individual streetscapes, which are the elements that make up the street scenery, or the overall appearance of the street. Vibrant, active streetscapes encourage pedestrian activity. While there are many bits and pieces that make up a successful streetscape, and while these items vary from case to case, one of the most important elements is landscaping. Trees adjacent to roads and streets are an integral part of an environmentally healthy community both in terms of the ecological services provided by trees and the role that trees play in the social cohesiveness of a community. Among the benefits provided by trees are:

- mitigation of the heat island effect through the shading of pavement and evaporation of moisture, which increases human comfort, improves local environmental conditions and reduces energy consumption;

- air-quality improvements, including the production of oxygen, filtering of fine particulates, removal of specific gases and reductions in the production of ozone (largely due to cooling effects);
- reduced need for stormwater management through the interception and evaporation of rainfall, improved soil drainage and transpiration of moisture from the soil;
- attractive social environments for outdoor interactions, such as occurs in parks, in neighborhoods and along commercial streets;
- an increased sense of place; and
- often, enhanced economic value to local businesses, or to local residential property values.

The benefits of trees are enhanced greatly when the planting of trees along streets and roads is properly planned and when these trees are appropriately maintained.

Proper maintenance of street trees is critical to the trees' survival and can avoid a serious threat to public safety due to the risk of falling limbs, or outright failure of such trees.

State law requires that each municipality appoint a tree warden to address the "care and control" of all trees along public roads and on public grounds, except along state highways and where a park commission has control of the park trees. The CT DEP's Urban Forestry Program works closely with tree wardens, providing educational opportunities, technical assistance and occasional financial support through a small, urban forestry grant program.

Potential CT DEP Permits, Registrations and/or Certifications

None are specific to this program; however, related permits include the MS4 Stormwater General Permit.

Financial Assistance

The Urban Forestry Grant Program, which can help fund street trees, is usually announced annually in early spring.

Model Regulations for Municipal Consideration

None are specific to this program; however, the *2004 Connecticut Stormwater Management Manual* (Appendix C) contains model regulations regarding stormwater. Other model regulations are posted on the CT DEP Landscape Stewardship Web pages under “Tools for Towns and Cities” which is found on the left navigation bar.

Web Pages

Stormwater

www.ct.gov/dep/stormwater

Street Trees and Urban Forestry

www.ct.gov/dep/forestry

Invasive Species

www.ct.gov/dep/invasivespecies

Landscape Stewardship

www.ct.gov/dep/landscapestewardship

Contacts

Street Layouts and Stormwater

Bureau of Water Protection and Land Reuse
Planning and Standards Division
Watershed Management and Coordination
Program

Phone: 860-424-3020

Street Trees and Urban Forestry

Bureau of Natural Resources
Forestry Division
Urban Forestry Program

Phone: 860-424-3178



Description

A brownfield site is generally defined as “real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant...”

Municipal Connection

Because of our long industrial history, there are thousands of sites in Connecticut which are or may be polluted. Most municipalities in Connecticut, whether urban, suburban or rural, contain one or more brownfield sites. Cities and towns are often best positioned to determine which sites in their communities are underutilized due to known or perceived pollution and associated liability.

Municipal Responsibility

Municipalities can play a vital role in moving brownfield sites back into productive reuse. Redevelopment of these sites will decrease public health risks, and increase municipal tax bases. Municipalities are best suited to discuss future use or reuse of properties with the property owner. They can initiate planning for site reuse to be done by the municipality or a selected developer, or encourage property owners to investigate their sites. Municipalities can also conduct an investigation of an unwilling owner’s property, or properties with no owner, and they can seek state and federal brownfield funding which is available for investigation and remediation.

Statutory Citations

Urban Sites Remedial Action Program: CGS Section 22a-133m;

Voluntary Transfer Act: CGS Section 22a-133x and CGS Section 22a-133y; and

Property Transfer Act: CGS Sections 22a-134a through 22a-134f.

Discussion

In the early 1990s, the federal government and the states began to focus attention on the problems associated with brownfield sites. Once used for industrial, manufacturing or commercial businesses, these sites were lying abandoned or unused due to known or suspected contamination with hazardous substances. Unknown environmental liabilities were preventing communities, developers and investors from restoring these properties to productive use and revitalizing impacted neighborhoods. To support brownfields clean-up and reuse, the CT DEP established the position of Brownfields Coordinator.

The clean-up and reuse of brownfields typically involves multiple state agencies. To facilitate the redevelopment of these sites, The Office of Brownfield Remediation and Development (OBRD, www.ctbrownfields.gov) provides a “one stop” state resource for information on the programs and services available for brownfield redevelopment in Connecticut. This office is located within the Department of Economic Development (www.ct.gov/ecd). The CT DEP is an essential partner and CT DEP’s Brownfields Coordinator works closely with OBRD.

In addition to the work of CT DEP’s Brownfields Coordinator, CT DEP remediation programs and standards are in place to help promote the cleanup and redevelopment of brownfields and other contaminated sites. When clean-up is necessary, the CT Remediation Standard Regulations (RSRs) establish clear cleanup standards which must be met to ensure the safe reuse of contaminated sites. The Voluntary Remediation Programs and Property Transfer Program provide mechanisms through which property owners can work with the state to assess environmental conditions at their properties and ensure that cleanups will meet state standards. In some cases, state funding may be available to assist with assessment and/or

Brownfields Remediation

remediation of brownfield sites. For example, the Urban Sites Remedial Action Program can provide state funding for cleanup of sites deemed to be significant to the economy of the state. The State also works to limit the liability of prospective purchasers through the use of Covenants Not to Sue.

To improve the efficiency of the brownfields clean-up program without compromising environmental protection, Connecticut established a licensing program that enables private licensed environmental professionals to oversee approved clean-up efforts. In specific circumstances, a site clean-up can be conducted under the supervision of a Licensed Environmental Professional (LEP). In these cases, the LEP must verify that a site investigation has been performed in accordance with prevailing standards and guidelines, and that pollution on the property has been remediated in accordance with both the Remediation Standard Regulations and any remedial action plan developed for the site and approved by the CT DEP. The LEP program has facilitated the clean up of numerous brownfields sites.

To encourage brownfields redevelopment by limiting liability from a state perspective, Connecticut has established two types of “Covenants Not To Sue” that are available to prospective purchasers of contaminated property, current owners of contaminated property, or lending institutions, to provide relief from liability for additional remediation once a property has been remediated to current standards. Entities responsible for causing the contamination are not eligible for a Covenant Not to Sue.

Potential CT DEP Permits, Registrations and/or Certifications

Covenants Not To Sue pursuant to CGS §22a-133aa are granted at the Commissioner’s discretion. The fee for this covenant is waived for municipalities.

Covenants pursuant to CGS §22a-133bb are non-transferable, less protective, and non-discretionary.

State law provides liability protection for “innocent landowners” as defined by CGS §22a-452e.

Financial Assistance

A state funding summary can be found at: <http://www.ctbrownfields.gov/>. Select “Funding & Assistance” at the top of the page.

In addition, USEPA administers competitive grants for brownfield investigations and remediation at <http://www.epa.gov/brownfields/>. USEPA grants can take longer to obtain, but grant money can be obtained for investigation and/or remediation. In addition, USEPA allows the grant funds to be used for grant administration purposes.

Model Regulations for Municipal Consideration

No.

Web Pages

www.ctbrownfields.gov/

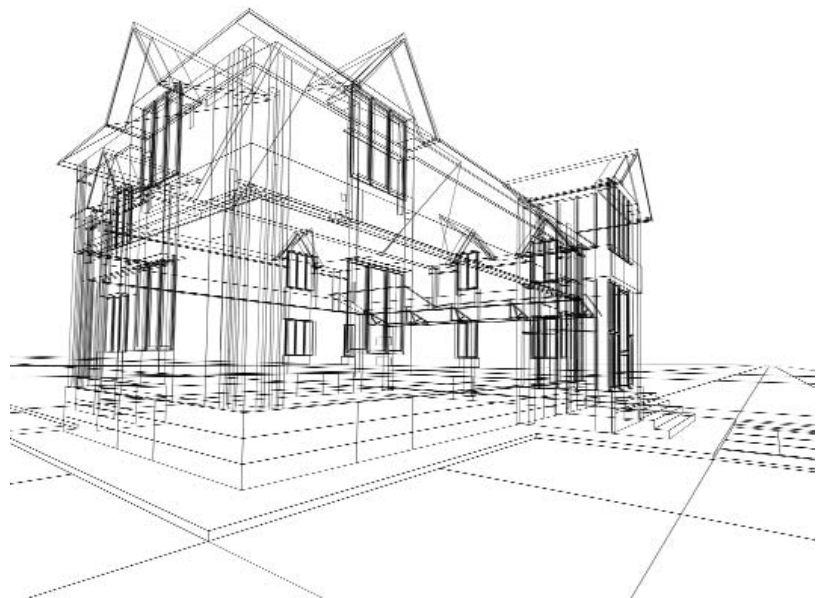
www.ct.gov/dep/remediation

Contact

Brownfields Coordinator
Bureau of Water Protection and Land Reuse
Remediation Division
Phone: 860-424-3705

Boards,
Commissions,
Agencies and
Committees

Development
Standards
Considerations



Environmentally Sensitive Land Use Practices

Description

Environmentally sensitive land use practices involve making land use and development decisions in a manner that is protective of environmental resources. Such practices need not impede, and in fact often support, responsible growth of municipalities.

Municipal Connection

By law and by custom, municipalities have primary responsibility for land use and development decisions in Connecticut. Each land use and development decision has the potential to directly or indirectly impact valuable environmental resources. Many of these impacts are incremental and cumulative in nature. Municipalities are encouraged to make land use and development decisions that are simultaneously protective of the environment and supportive of economic development.

Statutory Citations

Municipal Zoning: CGS Sections 8-1 through 8-13a;

Municipal Planning: CGS Sections 8-18 through 8-30f;

Coastal Management: CGS Sections 22a-90 through 22a-112; and

Inland Wetlands and Watercourses: CGS Sections 22a-37 through 22a-45a

Discussion

Planning

Land use decisions in Connecticut are made primarily at the local level based on the municipal plan of conservation and development (POCD) and local zoning, subdivision, and inland wetlands and watercourses regulations. Because these plans and regulations vary from town to town, the level of environmental protection may also vary. The CT DEP has compiled a list of recommendations to enhance protection of

sensitive resources. While neither mandatory nor exhaustive, the following suggestions are offered for consideration by local land use authorities:

- conduct a town-wide build-out analysis to understand how the community will change over time under the existing regulations. If the results are unsatisfactory, consider amending local zoning, subdivision and/or inland wetlands regulations to achieve a more acceptable build-out scenario;
- establish criteria to identify sewer service and sewer avoidance areas (see the fact sheet on *Wastewater Management Planning* under Wastewater Planning and Management) and honor these criteria;
- adopt a regulation or ordinance with specific requirements for regularly scheduled street sweeping and catch basin clean-outs to minimize the amount of sediment, contaminants, and floatable debris entering watercourses through the municipal stormwater management system (see the fact sheet on *Nonpoint Source Pollution Management* under Boards, Commissions, Agencies and Committees and the fact sheets on *Stormwater Management* and *Street and Road Management* under Public Works);
- consider establishing a means (e.g., transfer of development rights) to provide some financial equity between landowners whose property is identified for conservation/protection and those whose property is identified for development;
- consider concentrating development in urban, suburban and village centers;
- adopt a formal preference for infill, and brownfields clean-up and redevelopment over disturbing undeveloped “greenfields;”
- require all new development to incorporate “green building” techniques. A green building is one for which the indoor and outdoor (building and landscape setting) environmental qualities have been considered

Environmentally Sensitive Land Use Practices

and protected during its design, construction, maintenance and use;

- require all new development to include proper stormwater management incorporating low impact development practices (see the fact sheet on *Low Impact Development* under Boards, Commissions, Agencies and Committees). In redevelopment, require the retrofitting of existing stormwater systems with nonpoint source pollution controls;
- use a Geographic Information System (GIS) to map biologically and culturally important features in the community. Use this map (or maps) as a basis for identifying both areas to be developed or redeveloped and areas to be protected from development;
- reduce allowed development densities in environmentally or culturally sensitive areas, and within flood-prone areas;
- include in the local POCD an inventory of wetlands, floodplains, prime agricultural lands, unique habitats, and other areas sensitive to development, and their adjacent (buffer) areas for possible open space acquisition; and
- consider establishing or increasing protective vegetative buffers between development and sensitive resources, such as but not limited to: vernal pools, tidal wetlands, habitats for plant and animal species of greatest conservation need, and floodways. These buffers should be designed to protect resources from both direct development impacts and secondary impacts associated with stormwater runoff.

Land Reuse

One of the tenets of responsible growth and landscape stewardship is to reuse existing, under-utilized developed properties. These properties can be categorized as “brownfields” or “grayfields.” *Brownfields* are industrial or commercial sites that sit idle or underused because of real or perceived environmental

pollution (see fact sheet on *Brownfields Remediation* under Land Use Boards, Commissions, Agencies and Committees). *Greyfields* are generally vacant or under-utilized commercial or office developments where contamination is not an issue. In contrast, greenfields are properties that have only been minimally developed or not developed at all (think forests, farms and other unprotected open spaces).

Currently in Connecticut and elsewhere, market forces push development away from brown- and greyfields to greenfields because it is generally more immediately profitable to avoid the costs associated with either pollution clean-up or site razing by locating new development on greenfields. However, from a responsible growth and landscape stewardship perspective, greenfields should be the last places considered for development. Land reuse, the remediation of brownfields and redevelopment of both brown- and greyfields, has many benefits. It can:

- maximize the use and efficiency of existing infrastructure;
- alleviate some of the development pressures on greenfields;
- improve the economic viability of urban, suburban and village centers; and
- improve the quality of life for all Connecticut citizens.

Municipalities are encouraged to work towards increasing land reuse and decreasing the conversion of greenfields to other uses.

Although not a CT DEP program, Connecticut municipalities may find the resources of *ICLEI, Local Governments for Sustainability* helpful. ICLEI is an international association of local governments (and national and regional local government organizations) that offers member municipalities technical consulting, training and information services to build capacity, share knowledge and support local government in the implementation of

sustainable development at the local level.
Information about ICLEI is on-line at
www.iclei.org/

Potential CT DEP Permits, Registrations and/or Certifications

None specific to this program.

Financial Assistance

Financial assistance is not available at this time
(6/2008).

Model Regulations for Municipal Consideration

www.ct.gov/dep/landscapestewardship Select
“Tools for Towns and Cities” on the left
navigation bar and scroll down to “model
regulations.”

Web Pages

CT DEP

www.ct.gov/dep/landscapestewardship Select
“Tools for Towns and Cities” on the left
navigation bar.

ICLEI

www.iclei.org/

Contacts

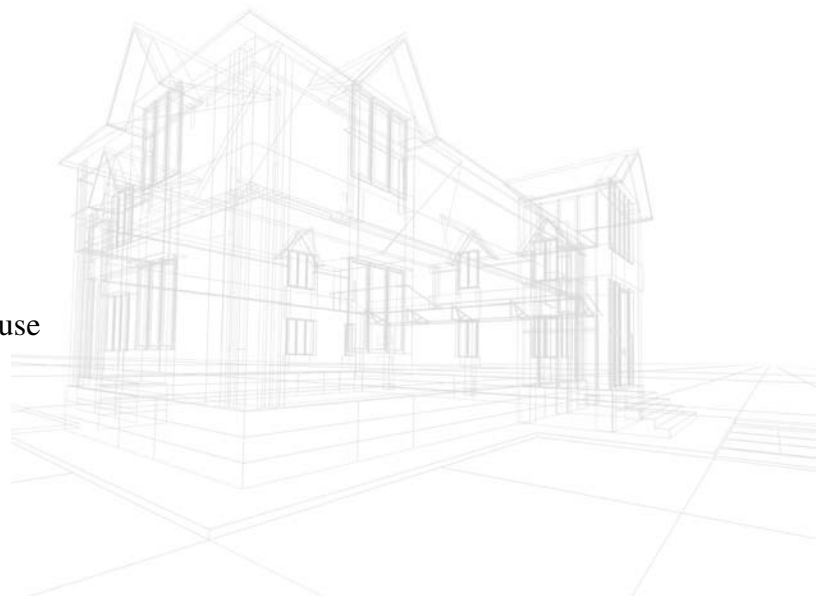
Landscape Stewardship

Statewide:

Office of the Commissioner
Planning and Program Development
Landscape Stewardship Initiative
Phone: 860-424-3618

Coastal Municipalities:

Bureau of Water Protection and Land Reuse
Office of Long Island Sound Programs
Phone: 860-424-3034



Description

Low Impact Development (LID) is a land planning and engineering design approach that focuses on minimizing adverse impacts of development on water quality and quantity by mimicking what nature has been doing for ages. The basic approaches to LID include managing stormwater by infiltrating, filtering, storing, evaporating, and detaining stormwater runoff close to its source.

Municipal Connection

In Connecticut, land development is the number one cause of nonpoint source pollution (NPS), and nonpoint source pollution is the number one threat to water quality. How land is developed can also significantly impact stormwater flows and can exacerbate flooding. By law and by custom, municipalities have primary responsibility for land use and development decisions in Connecticut. Each of these decisions has the potential to impact valuable resources.

Many municipal boards, commissions, agencies and committees (e.g. planning and/or zoning, inland wetlands and watercourses, conservation, and aquifer protection) have responsibilities associated with land use that may coincide with CT DEP programs and authorities, such as stormwater management, sediment and erosion control, wetlands and watercourses protection, surface water quality, aquifer protection, public water supply, and open space preservation.

Municipal Responsibility

Municipalities have no specific responsibilities to implement LID principles; however, the CT DEP encourages the adoption of LID requirements into municipal land use regulations. The discharge of stormwater may require compliance with the requirements of one or more of the CT DEP stormwater general permits.

Statutory Citations

Municipal Zoning: CGS Sections 8-1 through 8-13a

Municipal Planning: CGS Sections 8-18 through 8-30f

Coastal Management: CGS Sections 22a-90 through 22a-112

Inland Wetlands and Watercourses: CGS Sections 22a-37 through 22a-45a

Discussion

Traditional stormwater management relies on collecting and quickly shunting stormwater to receiving waters, often through underground pipe systems, to alleviate flooding of streets and property. This stormwater management approach can result in impacts to the receiving waters including inadequate base flow, swings in temperature and alterations to hydrology. Many times the flooding problems are merely moved to somewhere further down the system and the natural hydrology and water quality are negatively affected. These physical impacts can have detrimental effects on ecosystems, even when water quality is not compromised. Recently there has been a paradigm shift from traditional “collection and conveyance” stormwater management techniques towards considering stormwater a local resource asset.

LID is a design strategy that supports the notion of stormwater as a local resource asset and has as its goal maintaining or replicating the predevelopment hydrologic regime. It is generally implemented on the site level through the use of design techniques that minimize both stormwater runoff and alteration of the natural ground. The hydrologic functions of storage, infiltration, and ground water recharge, as well as the volume and frequency of discharges, are controlled through the use of integrated stormwater best management practices (BMPs). In some instances, a single BMP is sufficient to maintain pre-development

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hydrologic conditions; however, it is more often the case that a variety of sequential BMPs (i.e. a “treatment train”) are needed to adequately manage stormwater.

These multifunctional site designs incorporate alternative stormwater management practices. One such practice is the use of “functional landscaping” that acts as stormwater facilities. Functional landscape components might include flatter grades or stormwater storage in depressions and open drainage swales. Other strategies include the preservation or protection of environmentally sensitive site features, such as riparian buffers, wetlands, steep slopes, mature trees, flood plains, woodlands and highly permeable soils. LID measures are often more cost effective and require less maintenance than conventional, structural stormwater controls; however, not all sites are suitable for LID. Site suitability depends on such factors as soil permeability, depth to water table and slope. Although the use of LID on suitable sites may not completely replace the need for conventional stormwater controls, LID practices offer an additional benefit in that they can be integrated into infrastructure and are more cost effective and aesthetically pleasing than traditional, structural stormwater conveyance systems.

Basic LID principles are in many respects similar to those recommended for environmental and landscape stewardship (see fact sheet on *Environmental and Landscape Stewardship* under Boards, Commissions Agencies, and Committees). LID principles include:

- Design with the land by avoiding:
 - steep slopes;
 - significant blasting;
 - significant grading;
 - highly erodible soils;
 - prime agricultural soils; and

- unnecessary land disturbance (This avoids soil compaction, which reduces infiltration and often results in alteration of native vegetation. It can also decrease stormwater infiltration, pollutant attenuation, sediment trapping, shading that may offset thermal impacts, and any area of natural habitat.), and

- Minimize environmental impacts by encouraging “green” building practices including:
 - promote stormwater infiltration; and
 - encourage landscaping with native species.

Municipalities are encouraged to make land use and development decisions that are simultaneously protective of the environment and supportive of economic development. Municipal decisions about land use, and the design and management of municipal facilities (streets, roads, buildings, athletic fields, etc), especially stormwater management systems, impact the quality of our surface and ground waters. If NPS pollution is properly considered, mitigated and managed, these decisions can alleviate a major threat to water quality. LID can be integrated into the planners’ toolbox with major design goals of:

- identifying and preserving natural functions;
- maintaining natural hydrology;
- respecting abutter’s properties;
- maintaining local property values;
- sustaining groundwater supplies; and
- maintaining high water quality.

Potential CT DEP Permits, Registrations and/or Certifications

There are no CT DEP permits or certifications associated solely with Low Impact Development; however, the CT DEP has several general permits for stormwater management. These include:

General Permit for the Discharge of Stormwater Associated with Small Municipal Separate Storm Sewer Systems

General Permit for the Discharge of Stormwater Associated with Construction Activities

General Permit Associated with the Discharge of Stormwater from Commercial Activities

General Permit for the Discharge of Stormwater Associated with Industrial Activities

Financial Assistance

LID projects may be eligible for funding through the federal Clean Water Act Section 319 NPS Management program, which is administered by the CT DEP. Information is posted at www.ct.gov/dep/financialassistance, follow the link under “Water.”

Model Regulations for Municipal Consideration

Yes. See *2004 DEP Stormwater Quality Manual*, Appendix C at www.ct.gov/dep/stormwater.

See “Tools for Towns and Cities” link on the left navigation bar of the CT DEP Landscape Stewardship Web pages at: www.ct.gov/dep/landscapestewardship.

Web Pages

Low Impact Development
www.ct.gov/dep/landscapestewardship See “Tools for Towns and Cities” on the left navigation bar.

Stormwater
www.ct.gov/dep/stormwater

Contacts

Statewide NPS Program

Bureau of Water Protection and Land Reuse
Planning and Standards Division
Watershed Management/NPS/Lakes
Management Programs
Phone: 860-424-3020

Coastal Nonpoint Source Pollution Management Program

Bureau of Water Protection and Land Reuse
Office of Long Island Sound Programs
Phone: 860-424-3034

Stormwater Permitting

Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division
Stormwater Group
Phone: 860-424-3018

Landscape Stewardship

Office of the Commissioner
Planning and Program Development
Landscape Stewardship Coordinator
Phone: 860-424-3618



Boards, Commissions, Agencies and Committees

Resource Considerations



Description

There are many types of wetlands in Connecticut but from a regulatory standpoint, Connecticut recognizes two categories: inland wetlands and tidal wetlands.

Inland wetlands are defined by soil type and include poorly drained, very poorly drained, alluvial and floodplain soil types. Inland wetlands include watercourses, which are defined broadly to mean rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private. Inland wetlands may not always appear wet. By statutory definition, inland wetlands do not include tidal wetlands.

Tidal wetlands are flat, vegetated areas that are subject to flooding by the tides. They occur along the shores of Long Island and Fishers Island Sounds and tidal embayments and tidal rivers. The broad category of tidal wetlands includes salt marshes, brackish marshes and tidal freshwater marshes.

Municipal Responsibility

Municipalities directly regulate activities in or adjacent to inland wetlands and watercourses except for activities by state and federal agencies. The CT DEP regulates all activities in tidal wetlands; however, municipalities are responsible for ensuring that adjacent upland development does not harm these resource areas.

Statutory Citations

Inland Wetlands: CGS Sections 22a-36 through 22a-45a

Tidal Wetlands: CGS Sections 22a-28 through 22a-35a

Lakes Management Grants: CGS Sections 22a-339a through 22a-339h

Discussion

Wetlands and watercourses contribute to the quality of Connecticut's environment and to the well-being of its citizens. Wetlands are commonly referred to using familiar terms such as: marsh, swamp, salt meadow, bog, river, brook, pond or lake; however, Connecticut has very specific legal definitions for inland wetlands, which include most, but not all, freshwater habitats whether still water or flowing, and for tidal wetlands, which can be saline (salty), brackish or freshwater. These two wetland types are legally distinct and their regulatory requirements differ.

Inland Wetlands

Except for activities by state and federal agencies, activities in and near inland wetlands and watercourses are regulated by municipal inland wetlands commissions (IWWC). The CT DEP does not have the authority to hear, mediate, or negotiate appeals from local IWWC decisions; all such appeals must be filed in Superior Court.

The CT DEP provides training for municipal inland wetlands commissioners. Pursuant to the CGS Section 22a-42(d) at least one member of the inland wetlands agency or staff of the agency is required to complete the *Municipal Inland Wetland Commissioners Training Program*. The full course comprises three segments. Each municipality is provided a voucher allowing one person to attend the annual training program without cost. Additional municipal attendees may attend upon payment of a course fee. In addition, the CT DEP offers a DVD that covers the topics discussed in Segment I of the training course.

In addition to the value of inland wetlands as a whole, lakes and ponds enhance the landscape and are used extensively for swimming, fishing, boating, and other forms of recreation. Money spent on recreation is important to local and state economies, and the high property values of lakefront homes augment local tax revenues. These benefits deteriorate with a decline in lake water quality. Thus,

Water as a Natural Resource

caring for Connecticut lakes is important to the preservation of natural resources, stimulation of economic growth, and elevating the quality of life in the State.

Lakes and ponds are regulated under the statutes that control activities in and adjacent to inland wetlands. However, the CT DEP has a separate Lakes Management Program that supports the protection and restoration of ecological integrity and recreational value of Connecticut's lake and ponds. It should be noted that dredging of a lake, pond or basin requires prior authorization from the CT DEP in addition to any necessary local authorizations.

When present in small quantities, algae and other aquatic vegetation are beneficial to lakes and ponds. However, when these plants become overabundant, they can lower the recreational and aesthetic qualities in a body of water, and also alter some of the natural qualities such as fish community structure. The CT DEP offers a guidebook to the management of nuisance aquatic vegetation. The use of pesticides to control nuisance aquatic vegetation requires prior approval of CT DEP aquatic pesticide application permit.

Tidal Wetlands

Although activities within tidal wetlands are regulated exclusively by the CT DEP, cities and towns are responsible for ensuring that adjacent upland development does not harm these resource areas. The Connecticut Coastal Management Act contains policies and standards regarding tidal wetlands that must be applied during the municipal Coastal Site Plan Review (CSPR) process. In general, through the CSPR process local land use boards and commissions in coastal municipalities must ensure that development will not result in degradation of tidal wetlands, and that tidal wetlands are preserved, protected and, to the extent practicable, restored. The CT DEP has a tidal marsh restoration program to bring back marshes that have historically been degraded.

Minimizing Impacts to Surface Waters

There are several actions a municipality can take to minimize impacts to surface water resources (inland wetlands, tidal wetlands, lakes, ponds, streams, rivers, Long Island Sound). These include:

- updating the municipal Plan of Conservation and Development, adopting or updating a Municipal Coastal Program, if applicable, and revising local zoning and subdivision regulations to better protect surface water resources by planning for and requiring development setbacks and vegetated buffers from the upland edge of these resources. Buffers should be wide enough to protect the resource from stormwater runoff, erosion, construction, and other negative impacts that might result from development on the adjacent upland; and
- requiring that new development include low impact development techniques to manage stormwater. Low impact development techniques should be designed and implemented to minimize changes in runoff rates and volumes and to pre-treat runoff to remove grease, grit and other contaminants. For more information, see the fact sheet on *Low Impact Development* under Boards, Commissions, Agencies and Committees.

Potential CT DEP Permits, Registrations and/or Certifications

The CT DEP regulates activities in tidal wetlands and in coastal waters through the Coastal Permitting Program.

Dredging of inland lakes, ponds or basins is jointly regulated through both the municipal inland wetlands and watercourses programs as well as a general permit administered by CT DEP or an individual water diversion permit.

The CT DEP administers the Federal 401 Water Quality Certification Program in both inland and tidal areas of Connecticut.

The application of pesticides to control nuisance aquatic vegetation requires an aquatic pesticide application permit.

Municipalities are required to regulate activities in and adjacent to inland wetlands, water bodies, and watercourses, excluding tidal wetlands.

Financial Assistance

Inland Wetlands: no financial assistance is available at this time (6/2008).

Tidal wetlands: no financial assistance is available at this time (6/2008).

Lakes: funding is periodically available. Check on-line at: www.ct.gov/dep/financialassistance and select "Water."

Nuisance Aquatic Vegetation: no financial assistance is available at this time (6/2008).

Model Regulations for Municipal Consideration

Inland Wetlands

www.ct.gov/dep/wetlands Select "Inland Wetlands."

Tidal Wetlands

www.ct.gov/dep/wetlands Select "Tidal Wetlands," then select "Tidal Wetlands Buffers Guidance."

Web Pages

Inland Wetlands

www.ct.gov/dep/wetlands Select "Inland Wetlands."

Tidal Wetlands

www.ct.gov/dep/wetlands Select "Tidal Wetlands."

Lakes Management

www.ct.gov/dep/wetlands Select "Lakes and Ponds" on the left navigation bar.

Nuisance Aquatic Vegetation

www.ct.gov/dep/invasivespecies.

Contacts

Inland Wetlands and Watercourses

Bureau of Water Protection and Land Reuse
Inland Water Resources Division
Wetlands Management Section
Phone: 860-424-3019

Tidal Wetlands

Bureau of Water Protection and Land Reuse
Office of Long Island Sound Programs
Coastal Permitting Program
Phone: 860-424-3034

Lakes Program and Nuisance Aquatic Vegetation

Bureau of Water Protection and Land Reuse
Lakes Program
Phone: 860-424-3716

Aquatic Pesticide Application

Bureau of Materials Management and
Compliance Assurance
Engineering and Enforcement Division
Pesticide Program
Phone: 860-424-3369



Description

“Endangered species” means any native species documented by biological research and inventory to be in danger of extirpation throughout all or a significant portion of its range within the state and to have no more than five occurrences in the state, and any species determined to be an “endangered species” pursuant to the federal Endangered Species Act.

“Threatened species” means any native species documented by biological research and inventory to be likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range within the state and to have no more than nine occurrences in the state, and any species determined to be a “threatened species” pursuant to the federal Endangered Species Act, except for such species determined to be endangered by the Commissioner in accordance with section 4 of this Act.

“Species of special concern” means any native plant species or any native non-harvested wildlife species documented by scientific research and inventory to have a naturally restricted range or habitat in the state, to be at a low population level, to be in such high demand by man that its unregulated taking would be detrimental to the conservation of its population, or has been extirpated from the state.

Municipal Connection

Municipalities are encouraged to consult CT DEP’s Natural Diversity Data Base Endangered Species and Significant Natural Community Maps when engaged in conservation and development planning, and for CT DEP permit applications requiring preliminary endangered species review.

Municipal Responsibility

Individual municipalities are not required, but are strongly encouraged, to conserve state-listed plants, animals and their habitats.

Statutory Citation

CGS Sections 26-303 through 26-312

Discussion

The Connecticut Endangered Species Act (ESA), passed in 1989, recognizes the importance of our state’s plant and animal populations and the need to protect them from threats that could lead to their extinction. The overall goal of the legislation is to conserve, protect, restore and enhance any endangered or threatened species and their essential habitats. Species are listed according to their level of risk, and their status is reviewed every five years.

Potential CT DEP Permits, Registrations and/or Certifications

None specific to this program. The consideration of the presence and protection of threatened and endangered species may be a component of permits issued by the CT DEP.

Financial Assistance

Financial assistance is not available at this time (6/2008).

Model Regulations for Municipal Consideration

No.

Web Page

www.ct.gov/dep/endangeredspecies

Contact

Bureau of Natural Resources
Wildlife Division
Endangered Species Program
Phone: 860-424-3011