

**CONNECTICUT COASTAL NONPOINT PROGRAM  
NOAA/EPA DECISIONS ON CONDITIONS OF APPROVAL**

**FOREWORD**

This document contains the basis for NOAA and EPA's decision to fully approve Connecticut's Coastal Nonpoint Pollution Control Program (coastal nonpoint program). It discusses how the State has met each of the conditions of approval placed on the coastal nonpoint program submitted by Connecticut pursuant to Section 6217(a) of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA).

The Findings for Connecticut's coastal nonpoint program were issued on June 3, 1998. Since that time, Connecticut has undertaken a number of actions to address conditions of approval on its coastal nonpoint program. Based on those actions and on materials the State has provided to document how the conditions have been met, the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Environmental Protection Agency (EPA) find that Connecticut has satisfied all conditions of approval.

This document is organized in the same fashion as the Findings for Connecticut's coastal nonpoint program. Where the Findings included a condition, this document repeats the condition, and discusses how the condition has been satisfied. For further understanding of terms in this document and the basis for these decisions, the reader is referred to the following: *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters* (EPA, January 1993); *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance* (NOAA and EPA, January 1993); *Flexibility for State Coastal Nonpoint Programs* (NOAA and EPA, March 1995); and *Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance for Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA)* (NOAA and EPA, October, 1998)

**FINAL APPROVAL DECISION**

NOAA and EPA find that the State of Connecticut has satisfied all conditions placed on approval of the Connecticut coastal nonpoint program submitted to NOAA and EPA pursuant to Section 6217(a) of the Coastal Zone Act Reauthorization Amendments of 1990. Therefore, Connecticut's coastal nonpoint program meets all program requirements and is hereby fully approved, constituting a final approval decision for the program.

Please note that the approval decision made for the Connecticut coastal nonpoint program does not relieve the state of any requirements under the Endangered Species Act.

**AGRICULTURE**

**CONDITION:** Within two years, Connecticut will include in its program management measures in conformity with the management measure for confined animal facilities (large and

small) and for the nutrient management measure as it applies to animal waste, and enforceable policies and mechanisms to ensure implementation throughout the 6217 management area.

**DECISION:** Connecticut has met these conditions.

**RATIONALE:** Connecticut has submitted its 1993 *Manual of Best Management Practices for Agriculture: Guidelines for Protecting Connecticut's Water Resources* to satisfy the conditions for confined animal facilities and animal nutrient management. The Manual includes chapters on waste management systems, waste storage structures, and waste utilization which specifically reference SCS Technical Standards for various waste storage structures and waste utilization systems which are consistent with the (g) guidance. For example, the technical standards for waste storage facilities specifically states that “waste storage facilities must be planned, designed, and constructed to meet all federal, state, and local laws and regulations.” The standards go on to explain that the storage structure must be designed to include: (1) all manure and other wastes accumulated during the storage period; (2) normal precipitation and facility runoff during the storage period; and (3) the precipitation and runoff from a 25 year, 24 hour storm event. The BMP guidelines apply to all CAFOs, regardless of size.

The BMP Guidebook also contains a chapter on nutrient management which advises farmers to develop a nutrient management plan when applying any type of fertilizer (including fertilizer derived from manure or other animal wastes). The nutrient management plan guidance is consistent with the (g) management measures for nutrient management. With the help of 319 grant funds, the Natural Resource Conservation Service (NRCS) and the University of Connecticut Cooperative Extension Service (UConn/CES) assessed about 90 farms between FY96 and FY01 and wrote or revised approximately 40 agricultural waste management system plans that have been approved by DEP. Through FY01, nutrient management plans were being implemented on 24 farms comprising about 10,676 acres. NRCS and UConn/CES also completed the first year of a project to develop a user-friendly computerized record-keeping system to help farmers track nutrient use on their fields. This type of system will continue to encourage the use of nutrient management plans.

To ensure implementation of all agricultural management measures Connecticut is accountable for, the state has provided a legal opinion demonstrating that the Connecticut Department of Environmental Protection (DEP) has the authority under Conn. Gen. Stat. § 22a-416 *et seq* (Connecticut's Water Pollution Control Act) necessary to implement and enforce the (g) management measures for confined animal facilities (large and small) and for nutrient management as it applies to animal wastes. The DEP created and oversees the Agriculture BMP Manual, therefore the implementation and enforcement agency are the same. The DEP has also submitted a statement asserting that it is committed to using the Water Pollution Control Authority to enforce these measures as needed.

## URBAN

### CONDITIONS

**NEW DEVELOPMENT:** Within two years, Connecticut will include in its program management measures in conformity with the 6217(g) guidance. Within one year, Connecticut will develop a strategy (in accordance with Section XIV, Page 15) to implement the New Development management measure throughout the 6217 management area.

**DECISION:** Connecticut has met this condition.

**RATIONALE:** The 80% TSS control standard has been incorporated into the state's *Storm Water Management Manual* that contains the state's standards guiding the development and implementation of storm water control plans. The manual also contains non-structural and structural BMPs that will enable this target TSS reduction to be achieved. Workshops for municipal planning and zoning officials and staff within the coastal nonpoint source pollution management area and state, municipal, and private sector design engineers and developers will be conducted to provide details about the comprehensive stormwater manual. These workshops are included in the state's FY02 grant tasks under the Coastal Nonpoint Program.

Connecticut has demonstrated that it has adequate authority to implement the new development measures within the 6217 area. First of all, the State's Storm Water general permit (Conn. Gen. Stat. §22a-430) already requires post-construction TSS loadings be reduced by 80% for all construction activities that disturb five or more acres of land. Under the CCMA, Connecticut DEP has oversight of municipal planning and zoning commissions within the coastal zone that can require the reduction of post-development TSS and ensure that pre-development runoff volumes and rates are maintained as part of the coastal site plan review process.

In addition, all NPDES Storm Water Phase I or II designated municipalities must control storm water runoff from new development consistent with the 6217 management measures. According to the NOAA and EPA Policy Memo issued December 2002, Phase I and II designated communities are no longer required to implement the New Development measure under Section 6217. All but three of the municipalities within the state's 6217 boundary are incorporated under either the Phase I or Phase II program. These three communities will be addressing the new development measure through voluntary measures such as the Storm Water Management Manual and its watershed initiative backed by enforceable policies and mechanisms.

Finally, Connecticut provided a legal opinion asserting that the DEP, through its Water Pollution Control Act (CWPCA) (Conn. Gen. Stat. §22a-416 *et seq.*), has the necessary back-up authority to prevent nonpoint source pollution from new development projects as well as to implement the appropriate BMPs related to the new development management measures within the entire 6217 management area. The DEP has submitted a statement showing its commitment to use the Water Pollution Control Authority and other existing enforceable authorities where necessary to implement and enforce this measure.

**WATERSHED PROTECTION AND EXISTING DEVELOPMENT:** Within two years, Connecticut will include in its program management measures in conformity with the 6217(g) guidance for watershed protection as well as a process for identifying pollutant reduction opportunities and a schedule for implementing appropriate controls for existing development.

**DECISION:** Connecticut has met this condition.

**RATIONALE:** Connecticut's original submission for its coastal nonpoint program contained a number of programs that can be used to address portions of the management measures for watershed protection including: (1) avoiding the conversion, to the extent practicable, of areas that are particularly susceptible to erosion and sediment loss; (2) preserving areas that provide important water quality benefits and/or are necessary to maintain riparian and aquatic biota; (3) siting development, including roads, highways and bridges, to protect to the extent practicable the natural integrity of water bodies and natural drainage systems (see original CT Coastal Nonpoint Pollution Control Program and conditional findings document). However, the state failed to describe a framework through which these programs are coordinated on a watershed basis. The original material they submitted also failed to demonstrate how they will identify priority local and/or regional watershed pollutant reduction opportunities or establish a schedule for implementing appropriate controls as required under the (g) guidance.

Connecticut has worked hard over the past several years to develop a Watershed Planning Initiative to satisfy these outstanding conditions for watershed protection and existing development. The Watershed Initiative will provide the needed framework to coordinate existing and new nonpoint source programs on a watershed basis. The Watershed Initiative, administered by the DEP's Watershed Management and Coordination (WMC) Section of the Bureau of Water Management, is a coordinated effort between federal, state, and municipal government and non-government agencies and organizations to develop and implement watershed management programs across the state. The Initiative also serves to coordinate existing programs on a watershed basis. To support the Watershed Initiative and to coordinate watershed activities in each of the state's five major river basins, the DEP has also created and filled five "major basin" coordinator positions.

The DEP has also developed "Watershed Management Strategy Guidance" that identifies the coastal nonpoint pollution control program (g) measures that should be incorporated into all watershed management planning efforts undertaken or participated in by the DEP. This guidance statement will ensure that each Initiative includes the same overarching management components (i.e. watershed protection; existing development; new development; new OSDS; operating OSDS; Pollution Prevention; Site Development; Roads, Highways and Bridges; Hydromodification; and Agriculture) which are consistent with the (g) guidance.

Connecticut's Watershed Initiative calls for first developing more generalized Major Basin Overview Reports for the state's seven main drainage basins (Pawcatuck, Thames, East Coast, Connecticut, Central Coast, Housatonic, and West Coast). Using the Overview Reports as a guide, more detailed Watershed Action Plans are then developed for the 44 smaller regional basins throughout the state through a collaborative stakeholder process. The Overview Reports provide current information about land use and water quality within the basin, summarize the

status of attaining water quality goals, and highlight land and water management issues that need to be addressed by the Watershed Action Plans to improve water quality. The South Central Coast Major Basin Overview, covering a 513 square mile area, has been completed and sent for printing, and will be made available on the DEP's website. The major basin overviews for the Thames River Basin and Housatonic Basin are currently underway.

Watershed Action Plans provide further detail about the state of each regional watershed including: (1) characterization and assessment of water quality and quantity; (2) description of land use; (3) summary of open space, wetland, and riparian preservation; (4) analysis of stream corridor conditions and sources of impairments; (5) status of fisheries and fish/shellfish habitat within the watershed and major causes of impairment. In addition, the Watershed Action Plan establishes goals for improving and protecting the watershed from further damage, identifies pollution reduction activities to support each goal, lists the organization(s) and/or agency(ies) responsible for carrying out each task, and provides a schedule for implementing each task and a measure of success for each task. To date, three watershed management plans have been completed and are being implemented for the Norwalk River, Mattabasset River, and Quinnipiac River watersheds, and two more are being developed for the Hockanum River and Pequabuck River watersheds. Even though many regional basins do not have formal Action Plans yet, the watershed basin coordinators continue to work with stakeholder groups to take a watershed approach when addressing nonpoint source issues.

The basin coordinators assist with the development of both the comprehensive Major Basin Overview Reports and the Watershed Action Plans to ensure that they follow the state's watershed policy guidelines. Based on completed Action Plans, such as the *Plan for the Norwalk River Watershed*, the state's watershed policy is being followed. Elements of the Action Plan include tasks for identifying priority local and/or regional watershed pollutant reduction activities including retrofitting already developed areas, and preserving and/or restoring identified sensitive habitats such as riparian zones, wetlands, open spaces, and instream habitat consistent with the (g) management measures for watershed protection and existing development. For example, some of the priority pollutant reduction activities outlined in the Norwalk Plan include restoring streambeds impacted by road sand deposition, seeking solutions to reduce future road sand sedimentation, and developing a "hot spot" response plan to notify appropriate local and state agencies when obvious pollution is observed.

The Connecticut DEP has been promoting its Watershed Initiative approach throughout the 6217 management area during nonpoint source pollution control workshops held for municipalities. Recently, two regional workshops were held for non-coastal communities in the Connecticut River Basin. The workshops highlighted storm water management and watershed planning techniques and identified the ways in which municipal land use officials can better focus and utilize the tools already available to them to address nonpoint source pollution and ensure the application of the management measures throughout the upper Connecticut River valley.

NEMO (Nonpoint Education for Municipal Officials), an educational program for local land use officials established by the University of Connecticut's Cooperative Extension System that addresses the relationship of land use to natural resource protection, also complements the state's efforts to implement the watershed and existing development measures. NEMO has several pilot

projects underway in coastal and inland municipalities to illustrate the importance of controlling polluted runoff through municipal land use decision-making processes that identify and protect areas that are susceptible to erosion and sediment loss, preserve areas that provide water quality benefits and maintain riparian and aquatic biota. For example, as part of the Quinnipiac River Watershed Initiative, NEMO conducted targeted workshops for municipal officials from eight major watershed municipalities on the impact of land use on water quality and BMPs they can use. The goal of the workshops was to encourage local land use officials to update their municipal plans and regulations to address nonpoint pollution.

In conjunction with its new Watershed Initiative, Connecticut is also reorganizing its eight county soil and water conservation districts (SWCDs) into five “resource-based” districts following major river basin boundaries. SWCDs are key partners in the state’s NPS program and this reorganization will align the districts more closely with the state’s watershed management goals. SWCDs have several legislated responsibilities, including reviewing and commenting on soil erosion and sediment control plans required by municipal zoning regulations, protecting aquifer areas, and assisting the DEP in identifying and remedying the problems of soil and water erosion throughout the state.

Connecticut has taken the steps necessary to develop a watershed protection program that will satisfy the watershed protection management measure and the outstanding conditions for existing development. While Connecticut is still in the early stages of developing its Watershed Initiative program, the state is serious about expanding its Initiative and has dedicated 50-60% of its annual section 319 grants to projects driven by watershed initiatives. The state is also using Coastal Zone Management funds to help several municipalities update their Plans of Conservation Development to address nonpoint source pollution and incorporate many of the watershed and existing development requirements. Connecticut’s expanded strategic plan for watershed management (FY02-FY07) has outlined a strategy for implementing the program throughout the 6217 management area over the next five years. The plan will be updated and revised every five years. Given the strong state support and partnerships with NEMO, NOAA and EPA are confident that Connecticut will continue to expand and implement the Watershed Initiative throughout the state.

**SITE DEVELOPMENT:** Within one year, Connecticut will develop a strategy (in accordance with Section XIV, page 15) to implement the site development management measures in conformity with the 6217(g) guidance throughout the 6217 management area.

**DECISION:** Connecticut has met this condition.

**RATIONALE:** In its original program submittal, Connecticut demonstrated that it has several different voluntary and regulatory approaches to ensure implementation of the site development management measure such as its voluntary *Erosion and Sediment Control Guidelines*, and regulatory Coastal Management Act Chapter 444 (Conn. Gen. Stat. § 22a-90 through §22a-112) and Inland Wetlands and Watercourses Act Chapter 440 (Conn. Gen. Stat. § 22a-45a) which apply to the coastal zone and to areas adjacent to inland wetlands and watercourses, respectively.

In addition, the state's Soil and Erosion and Sediment Control Act (Conn. Gen. Stat. §§ 22a-325 through 22a-329) establishes a policy to implement a statewide erosion and sediment control program by requiring municipalities to adopt appropriate regulations. Every municipality in the state has adopted sediment and erosion control regulations in accordance with the state's *Erosion and Sediment Control Guidelines*. The *Guidelines*, developed by the Connecticut Council on Soil and Water Conservation (established by the DEP Commissioner) in cooperation with the DEP, are consistent with the (g) guidance for site development. Under the *Guidelines*, municipal regulations must also require soil erosion and sediment control plans be submitted with the application for development when the disturbed area is greater than one half acre. The municipality or the Soil and Water Conservation District must certify the plans to ensure they are compliant with the *Guidelines*. In addition, the Soil and Water Conservation Districts have the ability to review and make recommendations to all plans prior to their approval. While the enforcement responsibility rests primarily at the local level, the DEP Commissioner does have the authority to “. . . enter into agreements with any state agency or any owner or occupant of land in the state to carry out the provisions of this section” (CGS Chapter 446h §22a-314(b)). The Commissioner is also charged with establishing the soil and water conservation boards, which approve the sediment and erosion control plans.

The state will also use its Watershed Management Initiative to ensure implementation of the site development management measure throughout the 6217 area. DEP has issued “Watershed Management Strategy Guidelines” to ensure that the site development measures required by the (g) guidance are addressed through all Watershed Initiatives DEP participates. Through the Initiative, the state will encourage municipalities to incorporate these site development measures into local site planning ordinances and POCDs. This will allow for a comprehensive examination of existing zoning regulations and POCDs to occur in a regional, watershed-based context rather than on a case-by-case basis to determine whether these site design considerations are contained in municipal regulations or need to be incorporated. NEMO is working with 12 towns in the management area to revise local planning and zoning documents to address impervious cover and nonpoint source pollution. In addition, all towns immediately adjacent to the Connecticut River are members of the Connecticut River Assembly and Connecticut River Gateway, and were required to incorporate standards in their zoning regulations to protect the Connecticut River. Further, all coastal municipalities were required by statute to ensure that their zoning regulations and plans of conservation and development contain provisions to protect Long Island Sound and address hypoxia, floatable debris, toxic contaminants, and pathogens.

Finally, to support the many regulatory powers the state has to ensure the site development measure is implemented, the DEP has additional back-up authority under its Water Pollution Control Authority Law (Chapt. 446K of CGS § 22a-416 *et seq*) to ensure implementation of this measure throughout the 6217 area. Under the Water Pollution Control Law, the DEP Commissioner has the authority to issue orders to take necessary steps to correct existing or prevent potential sources of pollution (§ 22a-424).

**CONSTRUCTION SITE EROSION, SEDIMENT AND CHEMICAL CONTROL:** Within one year, Connecticut will develop a strategy (in accordance with Section XIV, page 15) to implement the construction site erosion and sediment control management measures in conformity with the 6217(g) guidance throughout the 6217 management area. Also within two

years, Connecticut will include in its program management measures and enforceable policies and mechanisms to ensure implementation of the construction site chemical control measure throughout the 6217 management area.

**DECISION:** Connecticut has met these conditions.

**RATIONALE:** As stated in a December 2002 Policy Memo, NOAA and EPA have agreed to defer to the National Pollution Discharge Elimination System (NPDES) Phase I & II Storm Water Program for the construction site erosion, sediment, and chemical control management measures. According to Section 6217 program guidance, once a source is covered by a NPDES permit, it is exempt from 6217 requirements. Therefore, by implementing EPA's Phase I & II Regulations, Connecticut satisfies the conditions for construction site erosion and sediment control and construction site chemical control.

In addition, the state provided a legal opinion asserting that the DEP, through its Water Pollution Control Act (CWPCA) (Conn. Gen. Stat. §22a-416 *et seq.*), has the necessary back-up authority to prevent nonpoint source pollution from construction site activities (i.e. sediment, erosion, and pollution control) as well as to implement the appropriate BMPs related to the construction site sediment and erosion control and construction site chemical control management measures within the entire 6217 management area. The DEP has submitted a statement showing its commitment to use the Water Pollution Control Authority and other existing enforceable authorities where necessary to implement and enforce this measure.

**NEW AND EXISTING ONSITE DISPOSAL SYSTEMS (OSDS):** Within two years, Connecticut will include management measures for adequate separation distance between new OSDS and the seasonal high water table; inspection of existing OSDS; and denitrification where nitrogen-limited surface waters may be adversely affected by nitrogen loading from OSDS, in conformity with the 6217 (g) guidance.

**DECISION:** Connecticut has met these conditions.

**RATIONALE:** Since the issuance of the original findings for conditional approval, Connecticut has undertaken several activities and provided supplemental information that demonstrate the state includes in its program the management measures for adequate separation distance, inspection, and denitrification.

#### Separation Distance

The Connecticut Public Health Code Regulations and Technical Standards for Subsurface Sewage Disposal Systems (Connecticut Public Health Code § 19-13-B100 and B103) establish a permitting program for the construction, installation, and repair of onsite disposal systems. Pursuant to the Public Health Code (PHC), no permit or approval may be issued for any new subsurface sewage disposal system where the surrounding naturally occurring soil cannot adequately absorb or disperse the expected volume of sewage effluent.

The Public Health Code regulations and standards require at least an 18" separation distance between the bottom of an OSDS and groundwater. The PHC also requires several other factors



be considered in conjunction with the vertical separating distance. These required factors include: (1) system siting and layout; (2) wastewater pretreatment; (3) flow distribution; (4) leaching surface application rates; (5) linear loading rates; (6) horizontal separating distances; (7) determination of seasonally high groundwater elevations; and (8) construction methodology.

In order to prevent the overflow or breakout of sewage from occurring within or downgrade of a leaching system, the Public Health Code requires that the system be spread out a minimum length across the slope, parallel to the contours of the naturally occurring soils in the leaching area. The calculation of this length is determined according to tables referred to as Minimum Leaching System Spread (MLSS) Factor Tables, or by a formal hydraulic analysis. In practice, flat sites with a restricted depth of unsaturated, naturally occurring soils and a slow percolation rate must provide a greater MLSS. Sewage must be applied uniformly over the entire length of the MLSS. If this is not feasible, each section of the leaching system must be analyzed independently in proportion to its daily discharge volume.

The combination of vertical and horizontal separation requirements and the other factors that must be assessed, is a comprehensive approach that allows for the desired removal and inactivation of pathogens and nutrients contained in septic tank effluent before they reach ground water and surface waters. Thus, the Connecticut Public Health Code provides for adequate protection of ground water and surface waters against nutrient and pathogen loadings from OSDS.

To further study the issue of separation distance, the DEP also retained a consultant to investigate the adequacy of an eighteen-inch separation distance between the bottom of an OSDS and the seasonal high water table and to determine if any modifications to the Public Health Code or Technical Standards may be needed. The consultant found that the 18” separation distance will be sufficient in most cases, but that till soils may require a greater separation distance for systems with flow rates greater than 1,000 gpd in some cases. In light of the recent consultant study, NOAA and EPA encourage Connecticut DEP and DPH to act on the commitment they expressed in a recent program submittal to strengthen the public health code and technical standards as needed.

#### Inspection and Maintenance

Connecticut has undertaken a number of activities to develop its OSDS inspection and maintenance program including: targeting inspections to areas of known OSDS impairment; developing voluntary point of sale inspection program; creating a guidance document for watershed coordinators that address OSDS inspection issues; and carrying out education and outreach programs directed toward OSDS inspection professionals, local health departments, and the general public.

Most notably, Connecticut is targeting its inspection efforts to areas of known OSDS-induced water quality impairments as identified by the state’s 2002 303(d) list. In these targeted geographic areas DEP, is employing abatement orders to systematically address OSDS related impairments. The orders require municipalities to abate pollution from inadequate onsite wastewater management and to establish long-term onsite wastewater management programs. As part of the overarching goal of targeting OSDS inspections to areas of known OSDS

impairment, the state utilizes multiple methods to trigger abatement orders that result in the establishment of improved OSDS management programs. Mandatory pump out and inspection programs have been initiated in response to abatement orders issued for all of the following reasons:

1. DEP staff identifies septic system problems such as raw discharges or overflowing systems.
2. The town or district solicits state government (usually DEP) support in addressing known septic system issues that are resulting in waterbody impairments.
3. A resident or citizen's group issues a complaint regarding a lack of action on the town's part to resolve OSDS issues. (e.g. Old Lyme).
4. The town determines it is necessary to proactively address potential septic system failures by improving its management approaches and thus seeks an abatement order as the means to engage state support for conducting appropriate studies and implementing the necessary local programs.
5. Existing OSDS issues, identified in prior assessments, have not been solved sufficiently to prevent watershed impairments, and new management (e.g., new state or local elected officials or DEP staff) seek abatement orders as the means to bring closure to the issues.

The State relies on its water pollution control authority to ensure that action is taken, regardless of the trigger mechanism, to address significant impairments that are possibly related to OSDS.

Currently, DEP has issued abatement orders to ten municipalities (Old Lyme, Old Saybrook, Essex, Westbrook, Clinton, Madison, Guilford, Killingworth, Branford, and Stonington). Although the 2002 303(b) list does identify a few other waterbodies that may be impaired by OSDS (i.e. have high fecal coliform levels), DEP does not feel OSDS abatement orders for these areas are appropriate at this time for various reasons (i.e. the municipalities are sewerred, or one failing system was identified as the source and is being address by more direct means).

In complying with the orders, all but Brandford have established inspection/pumpout and public outreach programs, and all but Stonington have jointly developed a uniform pumpout reporting form. Pollution abatement orders also require municipalities to undertake comprehensive integrated wastewater management planning to determine onsite system, community system, and offsite wastewater management needs. Branford and Stonington are still in the facilities planning phase and have the capability of addressing their issues with municipal sanitary sewers. In addition to the ten municipalities under DEP order, Deep River, Chester, and Wallingford have also established formal inspection and pump-out programs. Therefore, a significant portion of the state's 6217 area with water quality impairments potentially due to OSDS are already implementing the OSDS inspection management measure.

In addition to its targeted approach, Connecticut has established a process and protocol for voluntary septic system inspections that occur throughout the state at the time of property transfer. While not a regulatory requirement, many of the lending institutions in the state require OSDS inspections before property sale. A multi-agency committee comprised of representatives from the Connecticut DEP, DPH, the Connecticut Environmental Health Association (CEHA), the Connecticut Association of Realtors, local and regional health personnel, septic system installers and cleaners who perform inspections, and home inspectors, developed a standardized

property-transfer inspection protocol for OSDS to be used across the state. The DEP is working with CEHA's subsurface sewage code advisory committee to improve the existing form and market its use at the time of property transfer better. Results from a DEP survey distributed to all chief sanitarians in the management area will help determine whether or not municipal and regional sanitarians are aware of the property transfer inspection protocol, whether they use the form, and if there are any ways in which the form and protocol can be improved.

Further, the state also plans to improve and strengthen its point of sale inspection program by developing OSDS presentations and outreach materials and conducting workshops for Connecticut realtors, licensed subsurface sewage disposal system installers, professional sanitary/civil engineers, registered sanitarians and DPH-certified sanitarians within the 6217 management area. DEP is closely coordinating with CEHA and other key stakeholders to develop these outreach materials and better promote the use of the existing protocol and form. The DEP has secured 6217 funds to support these outreach efforts. NOAA and EPA encourage Connecticut to continue enhancements to its voluntary point-of-sale inspection efforts, including consideration of more formal tracking mechanisms as part of the state's long range strategy for fully implementing 6217 management measures.

In addition, the DEP has hired a consultant to assist in the preparation of a guidance manual to serve as a model for use by municipalities to improve their management of septic systems. The manual will provide guidance on establishing municipal onsite wastewater management programs as a component of a Water Pollution Control Authority's water pollution control plan. The manual will clearly delineate the roles and responsibilities of all parties involved in the development of an onsite wastewater management program and will suggest ways in which communications among these parties can be improved. Other program goals incorporated into the manual include potential funding mechanisms for implementation of onsite wastewater management programs, the development of septic tank pump-out and inspection programs, and a database to track pump-out results, repairs, water quality, enforcement actions, as-built records, and design plans.

To complement this process, the DEP and DPH are also working with the Town of Westbrook, located within the 6217 management area and under order from DEP to address OSDS-related water quality impairments, to develop a comprehensive onsite wastewater management plan. While the completed plan will ultimately enable the Town of Westbrook to sustain an onsite wastewater management approach for the properties in the planning area, an additional, equally important purpose of the project is to document the planning process undertaken in the development of an onsite wastewater management plan, which will help serve as a model for other municipalities in developing onsite wastewater management plans.

The DEP has also developed a guidance document for watershed coordinators to ensure consideration and incorporation of OSDS-related management measures in the Department's ongoing watershed efforts and planning initiatives, as warranted. If individual watershed efforts identify onsite sewage disposal systems as a nonpoint source pollution problem, DEP watershed coordinators can assess the need to implement new inspection/pumpout programs or augment existing efforts in the context of watershed initiatives.

In addition, the DEP and DPH continue to promote the proper operation and maintenance of OSDS through public education and outreach programs geared toward citizens and property owners throughout the 6217 management area. For example, a Long Island Sound License Plate grant was awarded to the Town of Killingworth to distribute informational pamphlets about septic system care and maintenance, groundwater protection, and the impacts of nonpoint source pollution on Long Island Sound to property owners and citizens

Finally, Connecticut DEP will continue to assess whether OSDS are failing through ongoing surface and ground water monitoring programs and promote the expansion of inspection and pumpout programs or development of OSDS management plans in impaired areas as necessary.

### Denitrification

Connecticut will implement the OSDS denitrification management measures through several initiatives. Foremost among them is a targeted approach within the 6217 management area directed at addressing OSDS-related impairments identified on Connecticut's 2002 Section 303(d) list. This approach centers on abatement orders issued to municipalities by the CT DEP. It is standard practice for DEP to issue orders to municipalities located within watersheds with impairments potentially caused by OSDS-related pollution, or adjacent to waterbodies with such impairments. DEP orders require municipalities to abate pollution from inadequate onsite wastewater management and to establish long-term OSDS management programs. In complying with the orders in areas where nitrogen is a known problem pollutant, municipalities must include in their scopes of work their proposed approaches to addressing nitrogen from OSDS, including replacement of failing residential systems with alternative technologies. The town of Westbrook (one of the municipalities under DEP abatement order), for example, is using CZM funds to develop an Onsite Wastewater Management Plan to better manage OSDS and protect surface and groundwaters. The Plan will address the use of alternative systems where appropriate. The CT DEP will use the Westbrook plan as a model for developing other municipal OSDS management plans throughout the 6217 area. As described in the previous section, CT has issued abatement orders for 10 municipalities so far, and has procedures for issuing them to other municipalities, if warranted.

As part of its targeted approach, the DEP has already required the installation of nitrogen pre-treatment systems where existing, larger scale septic systems were contributing to increased nitrogen loadings to adjacent waterbodies. Replacement of conventional systems with alternative systems has occurred at schools, restaurants, and shopping centers.

Beyond these targeted actions, CT DPH issued two statewide policy notifications to all municipal and regional directors of health, chief sanitarians, and installers/pumpers that include specific provisions to reduce nitrogen loadings. With regard to nitrogen impacts from new developments served by OSDS, the DPH issued a policy memo on January 31, 2000 to recommend that any consideration of lot development also include a nitrogen analysis and that local health departments require a nitrogen analysis for proposed high-density developments (greater than one bedroom per 0.167 ac). A second policy issued on January 22, 2002 extends the nitrogen analysis requirement to: (1) areas of a town currently under a DEP order to abate OSDS pollution; (2) environmentally sensitive sites adjacent to tidal wetlands, the Long Island Sound, inland lakes, ponds, and other water courses; and (3) developments within public water

supply aquifer protection areas. Regardless of the property's location, the policy also recommends nitrogen analysis should be conducted for the expansion of a food service facility, conversion of retail space to some activity resulting in increased sewage generation, or an addition of bedrooms to an existing residence if the property exceeds the 1 bedroom per 0.167 acre density criteria and the proposed use exceeds a discharge of 900 gallons per acre per day. This policy also recommends that local health departments work in conjunction with their Water Pollution Control Authority to establish environmentally sensitive areas for nitrogen assessments, which could also include nitrogen-vulnerable habitats like eelgrass beds.

In addition to local planning efforts, OSDS-related nitrogen reductions are also being targeted in the context of watershed management initiatives, especially where sensitive habitats such as eelgrass beds have been identified and may be threatened. The DEP is promoting denitrifying OSDS through its statewide Watershed Planning Strategy. Connecticut's Watershed Strategy Guidance issued by DEP states that all watershed initiatives that DEP oversees or participates in should incorporate the (g) guidance OSDS denitrification measure, where appropriate.

Finally, CT is committed to implementing the Total Maximum Daily Load (TMDL) for Long Island Sound, which calls for significant nitrogen reductions delivered to the Sound from both point and nonpoint sources. According to the DEP's TMDL for Long Island Sound, only 3-6% of Connecticut's contribution of the nitrogen load delivered to Long Island Sound is estimated to come from urban nonpoint source pollution, such as storm water and other terrestrial sources, including, but not limited to, OSDS, originating within the 6217 boundary. The DEP's approved TMDL specifies an ambitious 10 percent reduction in nonpoint sources of nitrogen, including OSDS. Connecticut has already begun to implement its TMDL and plans to meet its nonpoint source reduction goal by 2014. Connecticut is committed to reducing nitrogen contributions from existing onsite sewage disposal systems, provided that nonpoint source reductions sufficient to meet the 10 percent reduction goal established by the TMDL cannot be achieved through reductions from other sources.

To ensure steady progress towards the TMDL load allocation, and to provide for appropriate adjustments to nonpoint source pollution management prior to 2014, the Long Island Sound Study has set aside \$50,000 to develop a tracking system for nonpoint sources of nitrogen. This will allow Connecticut to track the progress of ongoing nitrogen reduction efforts while implementing the Long Island Sound TMDL and to make adjustments as warranted. Connecticut will consider several actions to promote the use of denitrification septic systems including:

- Continuing the use of advanced denitrification systems in DEP's on-going facilities planning efforts in towns under order by DEP to address pollution from onsite sewage disposal systems.
- Developing outreach materials such as pamphlets promoting the use of denitrification systems when replacing failing conventional systems in areas within the coastal nonpoint source management area where nitrogen is a known problem pollutant; and
- Proposing legislation to allow the creation of decentralized wastewater management districts that would allow the establishment of pollutant limits, performance requirements, and design parameters and the use of alternative systems to address

pollution problems, including nitrogen-related problems, associated with onsite sewage disposal systems.

**ROADS, HIGHWAYS, AND BRIDGES:** Within three years, Connecticut will include in its program management measures in conformity with the 6217 (g) guidance for runoff systems, and, for non-DOT supervised projects, the construction site chemical control, and operation and maintenance management measures. Also within three years, Connecticut will develop enforceable policies and mechanisms to implement the planning, siting and design, construction site chemical control and O&M management measures for projects not supervised by the DOT.

**DECISION:** Connecticut has met these conditions.

**RATIONALE:** Connecticut will rely on a mix of voluntary and regulatory programs to implement the roads, bridges and highways measures for runoff control, construction site chemical control, operation and management, and planning, siting, and design throughout the 6217 management area.

Connecticut satisfies the construction site chemical control condition and much of the runoff measure by implementing EPA's National Pollution Discharge Elimination System (NPDES) Phase I & II Storm Water Regulations. As stated in a December 2002 Policy Memo, NOAA and EPA have agreed to defer to the NPDES Phase I & II program for all chemical control management measures throughout the 6217 management area, including the one for roads, highways, and bridges. States will also be exempted from implementing the road, bridge and highway runoff measure within all NPDES Storm Water Phase I and Phase II designated areas (all but three towns within Connecticut's 6217 area fall under Phase I or II jurisdiction). According to Section 6217 program guidance, once a source is covered by a NPDES permit, it is exempt from 6217 requirements.

For the remaining three towns located within the 6217 boundary yet outside of NPDES Phase I and Phase II areas, Connecticut will use its Watershed Initiative to meet the condition for the runoff system management measure. The state's "Watershed Management Strategy Guidelines" establish criteria that each Watershed Action Plan overseen by DEP should incorporate, including developing and implementing runoff management systems for existing roads, bridges, and highways to reduce runoff pollution. Using the Action Plans as guidance, Watershed Basin Teams will identify opportunities for reducing pollutant loads from existing roads, highways and bridges to meet the overall water quality goals established by the plan.

As described in the Watershed Protection Section, the Action Plans provide: specific tasks the team should carry out; an implementation schedule; funding source(s) for the project; and names the groups or agencies that are charged with implementing the project. For example, tasks for runoff control from existing roads, bridges and highways underway in the Norwalk River watershed include: cooperating with municipal public works departments and CT DOT to produce and distribute guidelines to reduce the amount of road sand deposited into watercourses; reducing the volume of storm water runoff from roadways by retrofitting existing storm water discharge outlets during road improvement projects; prioritizing catch basin pump-outs and street sweeping projects; and retrofitting storm water catch basins to remove oil and sediment

before runoff is discharged to receiving waters in critical areas during normal infrastructure improvement projects.

The DOT already has an established operation and maintenance program in conformity with the O&M measures required by the (g) guidance. However, this program does not apply to non-DOT roads. Therefore, the State will also use its Watershed Initiative to address the operation and maintenance measure for local roads outside of DOT's jurisdiction. DEP has issued its "Watershed Strategy Guidance" to ensure that the O&M management measures for roads, highways, and bridges are incorporated into Watershed Plans. The Initiative will promote local municipalities to adopt ordinances that incorporate pollution prevention procedures comparable to the DOT's standards into operation and maintenance plans for roadways and bridges.

As described in the conditional findings, Connecticut already has a number of authorities to address management measures for planning, siting and design of roads, highways and bridges. Almost all roadway construction projects in the state rely on DOT funding for design and/or construction, and/or fall under the jurisdiction of one of the existing regulations such as the CCMA, IWWA, Tidal Wetlands Act, or Structures Dredge and Fill Act which all call for some type of site review or permit process for construction activities, including roads, bridges, and highways, occurring under their jurisdiction. The number of locally funded roads occurring within the 6217 management area that are not covered by one of these existing regulations is minimal. Nonetheless, the State will use the Watershed Initiative to promote municipalities outside the coastal zone to adopt Plans of Conservation and Development (POCDs) to incorporate the planning, siting, and design management measure for non-DOT supervised projects. The Watershed Strategy Guidelines issued by DEP state that all Watershed Initiatives that DEP oversees or participates in must incorporate planning, siting and design measures for roads, highways and bridges consistent with the (g) guidance.

In addition to the existing direct regulatory authorities, the Phase II program and its voluntary watershed initiative efforts, DEP has back-up authority under its Water Pollution Control Authority Law (Chapter 446K of CGS § 22a-416 *et. seq.*) to ensure implementation of these roads, bridges and highway management measures throughout the 6217 area as needed. The Water Pollution Control Law authorizes the DEP Commissioner to issue orders to take necessary steps to correct existing or prevent potential sources of pollution (§ 22a-424).

### **MARINAS AND RECREATIONAL BOATING**

**CONDITION:** Within two years, Connecticut will include in its program management measures for storm water runoff in conformity with the 6217 (g) guidance.

**DECISION:** Connecticut has met this condition.

**RATIONALE:** Connecticut released its updated *Clean Marina Guidebook* in September 2002 which recommends BMPs marina operators and boat owners can implement to reduce nonpoint source pollution. The BMPs provided in the *Guidebook* are consistent with the (g) guidance, including reducing the average annual total suspended solids (TSS) from hull maintenance areas

by 80%, based on an average of all storms in magnitude less than or equal to 2yr – 24 hr storm event to satisfy the remaining marina condition.

In addition to the guidebook, the state has developed a voluntary, incentive-based Clean Marina Certification Program to further encourage marina operators to employ sound environmental practices. Marinas that implement at least 90% of the recommended BMPs and all eight mandatory BMPs, such as those required in the (g) guidance, will be certified as a “Clean Marina” and receive special recognition and publicity. DEP has held several workshops to educate marina operators about the Certification Program and encourage them to participate. The state continues to work with marina operators to promote the program. Connecticut is also implementing a Clean Boater Program in conjunction with its new Clean Marina Program. The Clean Boater Program encourages boaters to pledge to use clean boating practices and to demand higher environmental standards from the marina facility they choose. Volunteer “dock-walkers” and the state’s boat pump-out operators will distribute clean boating educational materials to boaters to inform them of the program and clean boating practices.

Connecticut provided a legal opinion demonstrating that the Connecticut Department of Environmental Protection (DEP) has adequate legal authority under Connecticut’s Water Pollution Control Act (CWPCA, Chapter 446K of CGS § 22a-416 *et seq*) to implement and enforce the (g) management measures for storm water runoff from hull maintenance areas throughout the 6217 management area. The legal opinion also provides that DEP has additional authority under the structures, dredging, and fill statutes (SDFA, CGS § 22a-359 to § 22a-363f). The DEP has also submitted a statement showing its commitment to use the Water Pollution Control Authority Law and other existing enforceable authorities where necessary to enforce the marina management measures.

## **HYDROMODIFICATION**

**CONDITION:** Within three years, Connecticut will include in its program a process to: 1) improve surface water quality and restore instream and riparian habitat through the operation and maintenance of existing modified channels; 2) identify and develop strategies to solve existing nonpoint source problems caused by streambank or shoreline erosion; 3) protect streambanks and shorelines against erosion due to uses of the adjacent shorelines or the adjacent waters. Also within three years, the State will include in its program management measures in conformity with the (g) guidance for chemical and pollution control at dams.

**DECISION:** Connecticut has met this condition.

**RATIONALE:** Connecticut’s new Watershed Planning Initiative, as described previously, seeks to improve surface water quality and restore instream and riparian habitat; identify and develop strategies to solve existing nonpoint source problems caused by streambank or shoreline erosion; and protect streambanks and shorelines against erosion due to uses of the adjacent shorelines or the adjacent waters. The *Watershed Strategy Guidance* issued by DEP ensures that the hydromodification management measures required by the (g) guidance will be addressed in all Initiatives DEP is involved with. Ongoing monitoring programs carried out throughout the 6217 watersheds (See monitoring section) are being used to identify instream and riparian areas



degraded by stream bank and shoreline erosion. The Stream Walk assessments, performed by trained citizen volunteers who walk along the waterway noting general physical characteristics of the stream corridor including the presence of dams, erosion, and other impairments, have been extremely useful in identifying causes of erosion and targeting areas for further restoration work. The Watershed Initiative also identifies opportunities for improving these problems through developing watershed strategies, action plans, and implementation schedules. For example, the *Norwalk River Watershed Action Plan* includes tasks to preserve riparian and wetland areas, promote municipalities to develop conservation and development plans throughout the 6217 area, and identify and repair stream corridors that have been eroded due to excessive storm water runoff. In addition to the Watershed Initiative, Connecticut also restricts boating speeds to no more than six miles per hour within 100 feet of shorelines to minimize shoreline erosion from adjacent water uses (Navigation and Aeronautics, § 15-121-B14 of the Regulations of Connecticut State Agencies).

The Dam Safety Program (Chapter 446j of CGS § 22a-401 *et seq*) also grants authority to the DEP's Commissioner to permit and regulate dam construction, repair and maintenance. In order to receive a diversion permit for dam construction, the applicant must provide information to the Commissioner including the effect the proposed diversion will have on water quality, wetland habitats, waste assimilation, agriculture, and fish and wildlife. Upon review of the application, the Commissioner can place conditions upon any permit issued for dam construction or repair to ensure that repair or maintenance is carried out in accordance to the (g) guidance for hydromodification.

Finally, according to a December 2002 Policy Memo, NOAA and EPA have agreed to defer to EPA's National Pollution Discharge Elimination System (NPDES) Phase I & II Stormwater Program for the construction site erosion, sediment, and chemical control management measures, including those for chemical and pollution control at dams. According to Section 6217 program guidance, once a source is covered by a NPDES permit, it is exempt from 6217. Therefore, by implementing the Phase I & II Regulations, Connecticut will meet the construction site chemical control condition for dams.

### **ADDITIONAL MANAGEMENT MEASURES**

**CONDITION:** Within two years, Connecticut will develop a process for developing and revising management measures to be applied in critical coastal areas and in areas where necessary to attain and maintain water quality standards.

**DECISION:** Connecticut has met this condition.

**RATIONALE:** Connecticut will rely on its ongoing monitoring and assessment programs to determine the effectiveness of (g) measure implementation and the need to implement additional management measures. Waters within the 6217 management area not meeting water quality standards are generally identified as impaired on the 303(d) list or as a Category 1 "watershed in need of restoration" by the state's Unified Watershed Assessment. Once it is clear that the current (g) measures do not adequately protect water quality within these areas, the DEP will employ a variety of tactics to implement additional management measures. OLISP, in

conjunction with NEMO and Regional Planning Agencies, will work closely with local governments to implement additional BMPs that may include buffer zones, low density zoning, cluster development ordinances, and/or improved OSDS monitoring. The DEP can also incorporate additional management measures as permit conditions for its coastal, hydromodification, and inland wetland regulatory programs. In addition, the DEP can develop TMDLs for pollutants of concern threatening critical coastal areas which would require additional management measures. For example, as part of the nitrogen TMDL program already in place for Long Island Sound, the state has developed a nitrogen trading program to reduce nitrogen inputs to the Sound in an economically efficient manner. The state will also target priority areas where measures have not been adequate for Section 319 funding. The establishment of additional management measures will be a continuing process. The DEP is committed to tracking the additional measures to assess their effectiveness in attaining and maintaining water quality standards and protecting designated uses just as they do the standard measures. If water quality goals are still not met, further refinements to these measures, additional measures, or enforcement actions will be used as necessary.

### **MONITORING**

**CONDITION:** Within one year, Connecticut will develop a plan that enables the State to assess over time the extent to which implementation of management measures is reducing pollution loads and improving water quality.

**DECISION:** Connecticut has met this condition.

**RATIONALE:** Connecticut has demonstrated its ability to meet the monitoring requirements of the 6217 program by consolidating the data and information the DEP receives from several ongoing monitoring and tracking efforts. Consolidating the information will allow the DEP to better analyze the effectiveness of the coastal nonpoint pollution control program. These broad-based monitoring efforts involve state, federal, and citizen groups and will provide a reasonably comprehensive picture of nonpoint loadings on both watershed and site-specific scales. Routine ambient chemical and physical monitoring of the State's surface waters include, among other programs: DEP's intensive water quality sampling performed on a rotating basis corresponding to the 305(b) watershed cycle and regular benthic macroinvertebrate monitoring; USGS's stream flow and water quality sampling; LIS's monthly water quality surveys; CT Department of Agriculture, Bureau of Aquaculture's bacterial monitoring for shellfish beds; citizen groups' streamwalk surveys. Several regulatory programs also provide monitoring data useful for nonpoint source analysis. For example, industrial and commercial storm water permit registrants are required to sample their storm water runoff, analyze it for a standard suite of chemicals, and conduct toxicity bioassays on the runoff.

In addition, DEP uses several computer models including a statewide watershed model and two Long Island Sound-specific models to evaluate nonpoint source pollutant loads to the LIS. The USGS National Water Quality Assessment Program (NAWQA) provides another method for evaluating nonpoint source pollutant loadings throughout Connecticut's major drainage basins. The NAWQA develops relationships between nutrient loading and fertilizer use, animal manure and other nonpoint source pollutants to evaluate the relative importance of these key sources.

Connecticut also has several ongoing 319 demonstration projects that are specifically designed to evaluate, monitor and test the effectiveness of nonpoint source BMPs. For example, the Jordan Cove Urban Watershed Project uses a paired watershed approach to document the difference in storm water quality and quantity between a traditional subdivision development and one that incorporates nonpoint source pollution control BMPs into its design and construction.

To track the implementation of the coastal nonpoint control program, DEP will use its annual 305(b), 303(d), TMDL, and nonpoint source management plan and performance partnership agreement reports. The five major basin coordinators are specifically responsible for tracking implementation activities and water quality improvements within their watersheds. While not applicable to the entire 6217 management area, the Long Island Sound Study also produces an annual “Tracking and Monitoring” report that will provide an overview of implementation activities relevant to Connecticut’s coastal area and the Long Island Sound. Finally, OLISP and BWM staff plan on developing a consolidated report on a five-year basis parallel with the 305(b) requirements, to summarize the status and trends of nonpoint source pollution within the 6217 management area.

Based on the monitoring program description provided by the State and examples of on-going activities to measure the effectiveness of BMPs in addressing nonpoint source pollution, NOAA and EPA are satisfied that the State has a plan in place to assess the success of the management measures in reducing loads and improving water quality over time.