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remaining to be built, at Candees Pond in Ridgefield, would require the reconstruction of Route 102; land rights for this construction have not yet been acquired. The third remaining structure, at Comstock Brook in Wilton, cannot be built because of residential development. An alternative site is on land owned by the Norwalk Second District Water Company. Planned channel segments located in Branchville and through Wilton Center have been recommended for removal from the project because of environmental and social reasons. The City of Norwalk and the United States Corps of Engineers have completed a number of other channel projects in the lower reaches of the Norwalk River.



*Photo: A channeled section of the Norwalk River provided for flood relief but provides few, if any, water quality or habitat benefits.*

CTDEP has identified the Norwalk River Watershed as a high risk basin in immediate need of better flood control management and hazard mitigation. As shown in Table 3-2, economic evaluations prepared by NRCS in a 1997 report entitled, *Norwalk River Watershed PL-566 Project - Summary of Findings*, indicates a 500-year storm event (0.2 percent chance of occurring in a given year) would cause \$41 million in damage, a 100-year storm event (1 percent chance) would cause \$21 million in damage and a 10-year storm event (10 percent chance) would cause \$2.6 million in damages. All damage estimates are in 1991 dollars.

Table 3-2. Storm Frequency Resulting Damages in the Norwalk River Watershed, 1991 Dollars

Frequency (Year Event)	Damage in 1991 Dollars
500 .....	41,590,000
100 .....	21,780,000
50 .....	12,040,000
25 .....	6,050,000
10 .....	2,630,000
5 .....	900,000
2 .....	100,000

Given the significant nature of flood hazard in the watershed and the current status of the flood control measures proposed in 1965, CTDEP, Norwalk, Redding, Ridgefield, and Wilton are currently working on establishing an Automated Local Evaluation in Real Time (ALERT) flood warning system in the watershed. This system has been designed to provide potential warning times of four to six hours or more, depending on the location of the property in the watershed and the intensity of the storm. This would allow for sufficient time to move people and personal property out of harm's way. The greatest warning time will be provided to the lower part of the watershed where significant development exists. The system is expected to be online by Summer 1999.

CTDEP administers the State's stream channel encroachment program (SCEL). This program emerged from the State's 1955 floods as a nonstructural element in the State's ongoing efforts to reduce the loss of life and property from flooding events. The SCEL program regulates the placement of encroachments and obstructions riverward of SCELs to lessen the hazards to life and property due to flooding. In making a decision on a SCEL permit application, CTDEP must consider the impact of proposed activities on the floodplain environment, including wildlife and fisheries habitats and on flooding, and flood hazards to people and property posed by such activity.

SCELs were originally established for the Norwalk River in Norwalk in 1957, in Wilton in 1967, and in Redding and Ridgefield in 1969. The lines were set with the assumption that a large flood control dam (Miller's Pond Dam) would be constructed across the Norwalk River in Ridgefield. Gaps in the lines were also left where CTDOT was planning to construct Super 7 in Norwalk and where stream channelization was considered in Wilton. Today, Super 7 has been completed in Norwalk, the Wilton stream channelization project has not gone forward, and the flood control dam project (while not abandoned) will not be constructed in the foreseeable future. Consequently, CTDEP decided to revise the existing SCELs to fill the gaps in the lines and to more truly reflect the actual flood hazard that exists along the River. In Spring 1998, CTDEP completed the re-establishment of SCELs along the Norwalk River in Norwalk, Wilton, Redding and Ridgefield. The revised SCEL maps have been filed with the respective town clerks' offices.

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### Remediation Activities

A watershed as diverse and developed as the Norwalk River Watershed is not immune from contamination left by historical waste disposal, such as old manufacturing plants and closed landfills. Long-term cleanup operations occurring at the Kellogg-Deering wellfield site in Norwalk and at the Gilbert and Bennett facility in Georgetown are described below.

In 1975, trichloroethylene contamination was discovered in the public drinking water supplied by four wells in the Kellogg-Deering wellfield, located west of the Norwalk River at the north end of town. Upon the discovery of contamination, the wells were shut down and remained shut until 1981; operation resumed in 1981 after a water purification system had been installed under order of CTDEP. The Kellogg-Deering Superfund project was initiated in 1984 to provide a greater degree of protection for the public water supply. The first phase of this program ended in 1988 with installation of an improved water purification system at the wellfield. The second phase of the Superfund program began in 1987 with an investigation to identify the source of contamination affecting the public water supply. The source was found to be the Elinco/Pitney Bowes/Matheis Court Complex located on Main Avenue east of the River. Over the years, cleaning solvents had been spilled and dumped onto the ground and into pits inside and outside of the industrial buildings. The solvents migrated down into the groundwater flowing towards and under the Norwalk River to the wellfield. To deal with this situation, 30 soil vapor extraction wells were installed to remove contaminants from the soil at the complex. In addition, 14 water extraction wells were installed on the complex property and across the street to intercept contaminated groundwater before it reaches the river and wellfield. The contaminated vapor and water extracted from these wells are transported in pipes to a treatment building where specialized equipment removes the contaminants before discharging purified air to the outside and purified water to the Norwalk River. Operation of the wells and treatment systems began in September 1996 and is monitored regularly. It is expected that the soil vapor extraction wells will operate for 3 to 5 years, and that the water extraction wells will need to operate for 30 years.

Gilbert & Bennett, located on Main Street in Georgetown, manufactured wire fencing from steel rod from 1818 to 1989. Wastes generated from the manufacturing process were treated in outdoor lagoons which held iron sludge contaminated with lead. These lagoons are currently undergoing permanent closure. The closure plan involves chemical stabilization of the waste on-site and capping with an impermeable cover. After that is completed, the groundwater will be monitored for a minimum of 30 years so that if any leakage occurs, corrective action can be taken. The on-site stabilization is approximately 40 percent complete at this time.

### Low Flow Analysis

The upper reaches of the Norwalk River consist of a series of wetlands and impoundments connected by short stretches of free flowing stream. As part of the NRWIC's

work, a question was raised as to whether the upper watershed exhibited abnormally low flows or more frequent low flows than other watersheds due to evaporation or diversions. Seeking to answer the question, CTDEP reviewed the available data using the USGS flow gauge in South Wilton since 1962. Data from this gauge were compared to similar data from the Saugatuck River basin. A preliminary analysis did not indicate unusually low flow for this size drainage basin. However, CTDEP concluded that further in-depth analysis would be necessary and additional field studies should be pursued in order to get a better understanding of the Norwalk River in terms of how flow relates to chemical water quality and health of the aquatic community.

## Land Use

The Norwalk River Watershed comprises seven municipalities. Table 3-3 provides a breakdown of each municipality's size in total square miles, the municipal area within the watershed, the percent of the municipality within the watershed, and municipality's percentage of the total watershed. Approximately 90 percent of the Town of Wilton is situated within the watershed, while the Town of Weston accounts for 1.9 percent.

Table 3-3. Land Area and Percent of Municipalities in the Norwalk River Watershed

Municipalities	Town (in square miles)	Town Area within the Norwalk Watershed (in square miles)	Percentage of Towns within the Watershed	Percent of Watershed
New Canaan	23.3	5.9	25.3	9.1
Norwalk	27.7	12.7	45.8	19.7
Redding	32.2	3.4	10.6	5.3
Ridgefield	34.8	13.7	39.4	21.02
Weston	20.8	0.4	1.9	0.6
Wilton	26.8	24.1	90.0	37.4
Lewisboro, NY	29.3	4.3	14.6	6.7
TOTAL	194.9	64.5	34.8	100.0

As shown in Map 3-4, the Norwalk River Watershed is characterized by mixed land use, with urban sectors devoted to commercial and industrial land uses and a high degree of residential settlement. The greatest degree of urbanization occurs toward Long Island Sound and along the river corridor. Table 3-4 identifies the land cover types and related percent/acreage associated with commercial/industrial lands and rail-road/multilane road, open land, open water, high density residential development, other residential development, wetlands, and woodlands. (Note - Wetlands here are under reported due to GIS classification methodology; other land uses, or land covers masked approximately 10% of these wetlands.)



*Photo: A section of the Norwalk River watershed showing typical alterations to the river system found in the suburban portions of the watershed.*

Table 3-4. Norwalk River Watershed Land Cover Type, 1998

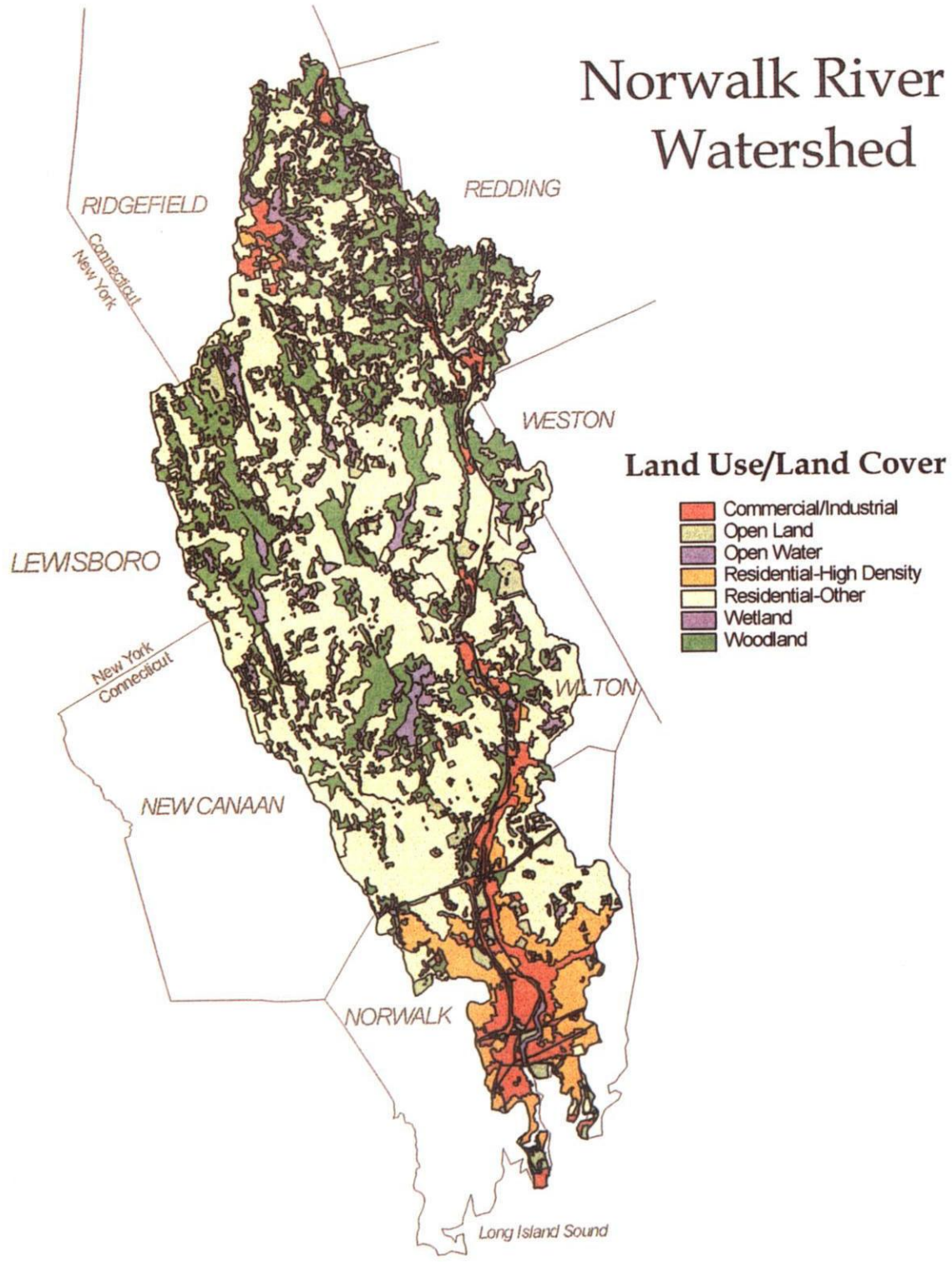
Land cover type	Percent	Acres
Commercial/industrial & railroad/multilane road	6.6	2,683.2
Open land	3.6	1,463.7
Open water	2.8	1,154.6
Residential development-high density	5.4	2,191.6
Residential development-other	51.0	20,793.1
Wetland	4.6	1,898.3
Woodland	26.0	10,617.1
Total	100.0	40,801.6

Approximately 18 percent, or 7,029 acres, of the Norwalk River Watershed is characterized by impervious surfaces. An impervious surface can be defined as any material that prevents the infiltration of water into the soil. Table 3-5 provides acres and percent of the Norwalk River, Comstock Brook, and the Silvermine River drainages that are characterized as impervious surface areas. Studies indicate that water quality can be linked to the amount of impervious surfaces occurring within a watershed or sub-basin. The Nonpoint Source Education for Municipal Officials (NEMO) Project recognizes two key action levels, at the 10 percent and 25 percent of area covered in a watershed by impervious surfaces. (Appendix 4 NEMO in the Norwalk River watershed). In watersheds with less than 10 percent imperviousness, the quality of water remains high and could be considered protected. At levels above 10 percent, degradation of water quality can be detected and water quality would be considered as “impacted.” When levels

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# Norwalk River Watershed



Map 3-4 - Landuse/Land Cover in the Norwalk River Watershed, 1997

exceed 25 percent imperviousness, then degradation becomes so severe that it is unavoidable. As shown in Table 3-5, the lower portion of the Norwalk River exhibits 27 percent impervious conditions; the upper mainstem of the Norwalk River, Comstock Brook, and Silvermine River drainages are characterized as greater than 10 percent impervious.

Table 3-5. Impervious Surface Areas for the Norwalk, Comstock and Silvermine Drainages

Drainages	Acres Impervious	Total Acres	Percent Impervious
Upper Mainstem, Norwalk River	2,232	13,696	16
Lower Mainstem, Norwalk River	1,953	7,108	27
Comstock Brook	708	4,697	15
Silvermine River	2,136	14,402	15
Total for entire watershed	7,029	39,903	18

### Open Space

As defined in the *Fairfield/2000 Report*, open space is any land or water area that provides opportunities for active or passive outdoor recreation, enhances the aesthetic appeal and character of an area, or contains or support important natural resources, including important plant and animal habitat. Approximately 10 percent of the watershed can be considered open space. Table 3-6 indicates ownership and quantity of open space found within the watershed. Federal and state acreage were obtained from CTDEP's Geographic Information System, municipal and private acreages were obtained from Connecticut's Office of Policy and Management (OPM) (draft data, April 1998), and the Westchester County Databook, 1996. For the purposes of Table 3-6, OPM identified the following as municipal and private open space: existing preserved open space; farmland trusts or other trusts not open to the public; conservation easements or lands taxed as open space under Connecticut General Statutes 12-107e; private open space used for general recreation; public or private cemeteries; public or private schools; and uncategorized parcels with poor boundary and/or poor attribute information.

In 1998, the Connecticut General Assembly enacted into law Public Act No. 98-157, *An Act Concerning Open Space and Watershed Land Acquisition*. This act establishes the State's Protected Open Space and Watershed Land Acquisition Program to provide matching grants to municipalities, nonprofit land conservation organizations, and water companies for use in purchasing land to be preserved as open space. This new land acquisition program is intended to supplement the state's existing acquisition program. Approximately \$166 million will be expended over the next 5 years for open space acquisition.

Table 3-6. Open Space Within the Norwalk River Watershed, 1998

Sector	Acres of Open Space
Federal .....	57
State .....	611
Municipal .....	1,877
New Canaan .....	0
Norwalk .....	365
Redding .....	101
Ridgefield .....	643
Weston .....	0
Wilton .....	660
Lewisboro .....	108
Private .....	2,084
Total .....	4,629

**Habitat**

**Stream Corridor Conditions**

As part of the NRWI, 50 volunteers conducted a streamwalk from August through November 1996. Each volunteer recorded physical observations within and adjacent to stream corridors. To facilitate data collection, the watershed was divided into three drainages: the Norwalk River, the Silvermine River, and Comstock Brook. In the Norwalk River drainage basin, the streamwalk identified 72 impaired sites; impairments such as excessive algae growth (at 19 sites), impoundments/dams (15), and streambank manipulation (at 12 sites) were most commonly recorded. Litter and the lack of riparian zones were also common. In the main stem of the Norwalk River, uninterrupted riparian vegetation of primarily less than 100 feet in width, with many sections having less than 25 feet, was found.

Within the Silvermine River drainage area, streamwalk volunteers identified 48 impaired sites which included 26 impoundments, 10 sites exhibiting excessive algae growth, and 3 streambank manipulation sites. Again, lack of riparian zones was common along the Silvermine.

Within the Comstock Brook drainage basin, the streamwalk identified 12 impaired sites, with impoundments/dams the most commonly found type of impairment (7 sites). There were also three impaired sites at which sedimentation was identified as a problem. Lack of riparian zones was not as prevalent since the uninterrupted width of riparian vegetation in this drainage basin was greater than 100 feet, on average. Appendix 1 summarizes the findings of the streamwalk.



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## Vegetation

Vegetation in many parts of the Norwalk River Watershed suffers from what can be termed an invasion of “nuisance floral species.” These are mostly non-native plant species that successfully out-compete native vegetation. The invasive species of most concern are listed in Table 3-7 with both their common and scientific names. It should be noted that, while the majority of invasive species are non-native, a few, such as common reed, are native.

The majority of these nuisance invaders originated in Asia and Europe; they were brought to the watershed in the 1800’s as ornamental plantings. However, over time, these species escaped their intended landscapes and colonized their surrounding environment where they have had great success. These species compete with less invasive and generally more beneficial plants and eventually win out.

Table 3-7. Invasive Species Common to the Watershed

Invasive Species Common to the Watershed
<ul style="list-style-type: none"><li>● Japanese knotweed (<i>Polygonum cuspidatum</i>)</li><li>● Common reed (<i>Phragmites australis</i>)</li><li>● Purple loosestrife (<i>Lythrum salicaria</i>)</li><li>● Japanese honeysuckle (<i>Lonicera japonica Thunberg</i>)</li><li>● Winged euonymous (<i>Euonymous alatus</i>)</li><li>● Japanese barberry (<i>Berberis thunbergii</i>)</li><li>● Asiatic bittersweet (<i>Celastrus orbiculatus</i>)</li><li>● Garlic mustard (<i>Alliaria petiolata</i>)</li><li>● Japanese stilt-grass (<i>Microstegium vimineum</i>)</li><li>● Multiflora rose (<i>Rosa multiflora</i>)</li><li>● Glossy and common buckthorn (<i>Rhamnus frangula and R. cathartica</i>)</li><li>● Norway maple (<i>Acer platanoides</i>)</li></ul>

As native vegetation has been lost in the Norwalk River Watershed, the historic floral composition of the watershed has been lost as well. As the aggressive growth patterns of these species continues, homogenous stands of vegetation have been created in the watershed. These homogenous floral communities lack species diversity and, in turn, are unable to support a diversity of faunal species. The lack of diversity is compounded by the fact that many of these non-native plant species are also noted for having poor wildlife support capacity. Other resulting impacts from invasive species include changes in soil conditions (i.e., chemistry, moisture, and nutrient composition), and threats to rare or endangered species (both vegetative and animal).

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These largely opportunistic species will take advantage of disturbed areas first before spreading to well-established floral communities. Wetlands disturbed by filling, excavation or hydrologic modification offer an excellent opportunity for the common reed and purple loosestrife to become established and, indeed, these species are becoming quite prevalent along the sides of highways, such as Super 7, and tidal marshes along the harbor. These two species have the highest incidence of evolving into dense homogenous stands which offer little wildlife support. Another prime area for these non-natives to invade is the zone between developed areas and naturally vegetated areas, known as "edges." In the watershed, bittersweet, multiflora rose, and knotweed are typically found at "edges." Winged euonymous, garlic mustard, and barberry are commonly found dominating the understory of woodlands where the forest's perimeter has been disturbed.

### **Fisheries**

In 1990, CTDEP conducted a comprehensive stream survey on the western and central coastal basins as part of a multi-year study of Connecticut streams and rivers. A total of 125 sites on 103 streams were sampled for invertebrate populations, fish populations, and habitat information. Eleven angler surveys were also conducted on nine streams. Preliminary data analysis was done for most physical, chemical, and biological parameters (i.e., air and water temperatures, water velocity and discharge, dissolved oxygen, pH, conductivity, fish species composition). The study investigated the presence or absence of trout and trout reproduction. Trout reproduction was found in 45 percent of the central coastal basin streams and 31 percent of the western coastal streams that were sampled. These basin streams contain many small streams that flow directly into Long Island Sound, many of which historically supported anadromous fish species. Anadromous fish begin life in freshwater, migrate to the sea to reach maturity, and return to freshwater to spawn.

This 1990 survey investigated seven sites within the Norwalk River Watershed (considered as part of the western basin): the Norwalk River and Barretts, Chestnut, and Comstock Brooks in Wilton; the Norwalk River in Ridgefield/Redding; Cooper Pond Brook in Ridgefield; and the Silvermine River in Norwalk. Each of these sites exhibited the appropriate pool/riffle morphology to support coldwater fisheries. The survey found that, for the stream segments sampled, approximately 43 percent had evidence of trout reproduction. Brown trout had a higher incidence of reproduction, Brook trout considerably less (14 percent). The Norwalk River had young-of-the-year and age-1 brown trout present in the lower reaches. Brook trout were generally limited to smaller streams and headwater areas; their number and reproduction were limited in the Norwalk River. Table 3-8 lists the fish species collected during the survey.

Two of the survey sites located directly on the Norwalk River (Ridgefield/Redding and Wilton) indicated the presence of both cold and warm water fish. The species found within these two sites included brook trout, brown trout, blacknose dace, common shiner, creek chub, cutlips minnow, white sucker, and American eel, all species com-

monly associated with cold water rivers in Connecticut. Most, if not all, of these species are anticipated to be found within nearly the entire length of the Norwalk River. In addition to riverine fish species, the survey revealed the presence of the following warm water species: largemouth bass, bluegill, green sunfish, pumpkinseed, redbreast sunfish, and golden shiner. These species are likely to be permanent residents in Norwalk River impoundments and transient through free-flowing river reaches. A more recent study (June 1998) confirmed the presence of similar fish species.

The 1990 survey indicated that moderate fishing pressure was found on the Norwalk River. To satisfy angler demand, CTDEP releases approximately 9,500 hatchery-reared adult brook, brown and rainbow trout into the River twice in the fishing season. While currently managed to maximize the harvest of stocked trout, CTDEP regards the Norwalk River as having a high potential for an improved carrying capacity of both hatchery-reared and wild trout by improving current habitat conditions.

Table 3-8. Fish Species Found Within the Norwalk River Watershed

<b>Fish Species Found Within the Norwalk River Watershed</b>
● American eel ( <i>Anguilla rostrata</i> )
● Goldfish ( <i>Carasius auratus</i> )
● White sucker ( <i>Catostomus commersoni</i> )
● Tesselated darter ( <i>Etheostoma olmstedii</i> )
● Cutlips minnow ( <i>Exoglossum maxillingua</i> )
● Brown bullhead ( <i>Ictalurus nebulosus</i> )
● Redbreasted sunfish ( <i>Lepomis auritus</i> )
● Green sunfish ( <i>Lepomis cyanellus</i> )
● Pumpkinseed sunfish ( <i>Lepomis gibbosus</i> )
● Bluegill ( <i>Lepomis macrochirus</i> )
● Smallmouth bass ( <i>Microterus dolomieu</i> )
● Largemouth bass ( <i>Microterus salmoides</i> )
● Golden shiner ( <i>Notemigonus crysolencas</i> )
● Common shiner ( <i>Notropis cornutus</i> )
● Blacknose dace ( <i>Rhinichthys atratulus</i> )
● Brown trout ( <i>Salmo trutta</i> )
● Brook trout ( <i>Salvelinus fontinalis</i> )
● Creek chub ( <i>Semotilus atromaculatus</i> )
● Fallfish ( <i>Semotilus corporalis</i> )
● Unknown cyprinid

In addition to coldwater and warmwater fisheries, the Norwalk River Watershed was once an important habitat for anadromous fish species. Anadromous species most likely native to the Norwalk River include American shad, alewife, blueback herring, sea lamprey, white perch, and rainbow smelt. Preliminary surveys conducted by CTDEP in the watershed have determined that good habitat is present for alewife, blueback herring, gizzard shad, and sea lamprey and moderately good habitat for sea-run brown trout. CTDEP has identified the Norwalk River as a high priority for anadromous fish restoration, particularly for alewife.

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There are a number of impairments which exist along the watercourses that adversely affect the sustainability of coldwater and anadromous fisheries. For both coldwater and anadromous fisheries, channel structure, substrate composition and quality, and riparian vegetation all play critical roles in the success and survival of spawning adults and developing eggs and juveniles. While these structures and vegetation affect productivity, obstructions to passage are also a significant factor. Segmenting populations and restricting the movements of selected life stages reduces the overall productivity of the fisheries.

The most significant impairments affecting the Comstock Brook subwatershed include inadequate base flow as a result of withdrawal by a water company, impoundments contributing to warmer temperatures, and excessive sedimentation. The Silvermine subwatershed is characterized by numerous impoundments along the River which have resulted in localized morphological alterations and subsequently disconnected fish populations. In addition, sedimentation, inadequate riparian vegetation, and lack of streamside as well as instream cover affect coldwater fisheries. In the Norwalk River, the area of the main stem from the Wall Street Bridge in Norwalk to the abandoned Gilbert & Bennett factory in Georgetown is conducive to coldwater fisheries survival. However, impairments such as impoundments, sedimentation, inadequate riparian vegetation, and a lack of streamside and instream cover abound. Three significant impoundments are present: the Flock Process Dam, the dam at a Wilton recreational sites (Merwin Meadows) and the dam at Cannondale. The Flock Process Dam as well as a number of other dams on the Norwalk and Silvermine rivers pose the biggest obstacle to anadromous and coldwater fisheries. Upstream of the dam at the old Gilbert & Bennett factory, stream morphology, in general, begins to change. Upstream of Cedar Mountain in Ridgefield, sustainable coldwater fisheries habitat exists only in an isolated one-quarter to one-half mile sections of the River, as a result of fragmentation by numerous impoundments.

### **Shellfish**

Norwalk Harbor and the Norwalk Islands have historically been one of the most productive areas for shellfish along the Connecticut coastline. Currently, there are more than 250 leased shellfish beds in Norwalk covering over 2,450 acres of Long Island Sound. The Norwalk Harbor area has been historically "closed," classified as "Prohibited" and "Restricted-Relay," to the direct harvesting of shellfish for consumption. Pollution, especially from runoff during rain events, results in elevated fecal coliform bacteria levels. To date, portions of the area south of the Harbor are classified as "Conditionally Approved," and are closed for a minimum of seven days after rainfall events of greater than or equal to 1.5 inches. Improvements in water quality of the Norwalk River Watershed may allow for future upgrading of shellfishing areas in the Harbor. Larval marine finfish, lobsters and all other organisms of Long Island Sound would benefit by having cleaner water for growth and reproduction. In 1997, more than 1,000 recreational shellfishing permits were issued by the Norwalk Shellfish Commission.



*Photo: At the mouth of the Norwalk River, important shellfish and recreational waters receive the cumulative impacts of the watershed's land use activities before entering Long Island Sound.*

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[Redacted]

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# Chapter 4

## **The Norwalk River Watershed Action Plan**

An integral part of achieving the vision of a healthier Norwalk River Watershed is developing and implementing specific actions that focus on restoring and preserving this watershed. These actions provide a unifying “blueprint” of the activities needed to realize the vision statement of the NRWIC in Chapter 1. In this chapter, the Committee provides a map for the watershed community to follow. Participants implementing the plan can take on discrete projects knowing that each activity undertaken will bring the watershed closer to achieving the vision of the Action Plan. It is hoped that partnerships are formed wherever possible to implement these tasks.

The Norwalk River Watershed Action Plan consists of goals with corresponding objectives and an identification of tasks to support the objectives. The following pages outline each of the broad goals with its corresponding objectives followed by the supporting tasks. To better communicate the intent and relevance of the objective, an introductory statement has been provided to add clarity. Supporting tasks are listed with information to guide the reader in understanding the path of implementation. The entity likely to be responsible for carrying out the task is identified.

The Plan of Action is not to be viewed as an assignment for any one party, but rather a community-wide effort transcending municipal boundaries and traditional jurisdictions. Under some tasks, a date of anticipated commencement and completion is also provided. In some instances the dates are selected based on logical progression of tasks and others are simply target dates to be pushed up or back as opportunities arise. Lastly, a means to measure success is stated. Measuring the success of each task is important to communicate to the public the progress the Norwalk River Watershed Action Plan, to enable participants in the plan and others to learn from the accomplishments and failures, and to provide personal satisfaction that comes from a completed job. Documenting results is as much an organizational tool as it is a measure of success. It is the intent of the NRWIC that this plan be revisited at various time periods so as to reassess time frames and measure success.

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## How to Read This Chapter

Format: These action items are organized into four parts, each corresponding to specific subcommittees. Within each part you will find the goals of the subcommittees, the objectives to implement the goals, and the supporting tasks to reach the objectives. Each task is outlined in the same way:

- **Implementing Group:** These are leads or sponsors for the task (see naming conventions). In those cases where the tasks are being implemented, more specificity as to the implementer is given. It is important to note that the names are not an absolute assignment. All potential implementers from the community are actively encouraged to help implement the plan. Partnerships should be encouraged every step of the way.
- **Time Frame:** This is a potential start and end date. It also represents an implied priority.
- **Measure of Success:** This represents how the community will be able to determine if the task has been implemented successfully.

**Naming Conventions:** The Norwalk River Watershed Initiative Committee gave a tremendous amount of thought on how to be specific enough to point the way for implementers to act, while allowing for community entities to participate in implementing the plan. Naming conventions represent those who might be leads or sponsors for an activity and be responsible for its resolution. In doing so, it is expected that those leads or sponsors would ask for assistance from the community. The naming conventions fall under general headings. However, under these headings, it is understood that the more specific leads would be identified by the Advisory Committee. It is anticipated that this convention will cover all potential participants in the future without excluding any. The naming conventions are as follows:

- Municipalities (i.e. planning and zoning, wetlands, conservation, public works, public health)
- Regional Agencies (i.e. regional planning organizations, Fairfield County Soil and Water Conservation District, Westchester County Planning Department)
- Private Conservation and Civic Community Organizations (i.e. Norwalk River Watershed Association, Save the Sound, Trout Unlimited, the Nature Center for Environmental Activities, League of Women Voters, garden clubs, etc.)
- State Agencies (i.e., CTDEP, CONNDOT, NYDEC)
- Federal Agencies (i.e., USDA-NRCS, EPA, USFWS, USGS, ACOE)
- Watershed Coordinator(s) (will work at the direction of the Watershed Advisory Committee)
- Watershed Advisory Committee (representatives from each municipal government, state, federal, and regional agencies, private conservation and civic community organizations, business and industry.)



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## I. HABITAT RESTORATION ACTION ITEMS

<b>Goal 1: Preserve and improve wildlife habitat</b>
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### **Objective 1: Control or diminish the prevalence of invasive species.**

#### Introductory Statement:

Invasive species threaten the diversity and sustainability of native floral and faunal communities. In an effort to maintain diversity, invasive species must be actively discouraged and/or eliminated.

#### Supporting Tasks:

1. Educate residents, landscapers, land use commissions, nurserymen, and interested groups about the detrimental effects of non-native invasive species.  
Implementing Group: Municipalities and Private Conservation and Civic Community Organizations  
Year Start/End: 1999-ongoing  
Measure of Success: Educational brochure produced and distributed; workshops held.
2. Identify sites degraded by invasive, non-native species .  
Implementing Group: Municipalities and Private Conservation and Civic Community Organizations  
Year Start/End: 1999-ongoing  
Measure of Success: List of such sites in the watershed developed.
3. Implement specific invasive species reduction/restoration projects.  
Implementing Group: Advisory Committee, Norwalk River Watershed Association  
Year Start/End: 1999-ongoing  
Measure of Success: Listed sites restored, which should result in the absence or significant reduction of targeted species.
4. Encourage nurseries to offer more native species and discourage the sale of invasive non-native species.  
Implementing Group: Advisory Committee, Municipalities, Private Conservation and Civic Community Organizations  
Year Start/End: 1999-ongoing  
Measure of Success: Occurrence of non-native species decreased and availability of native floral species increased.

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## I. HABITAT RESTORATION ACTION ITEMS

<b>Goal 1: Preserve and improve wildlife habitat</b>
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**Objective 2: Minimize loss of habitat values coincident with land use practices.**

Introductory Statement:

Some current and future land use practices threaten the watershed habitat by directly eliminating or reducing its value through alterations, fragmentation, pollution, and other environmentally negative consequences. This trend needs to be stopped and opportunities to reverse existing damage need to be developed or pursued.

Supporting Task:

1. Make recommendations regarding habitat needs for general wildlife support.  
Implementing Group: Advisory Committee  
Year Start/End: 1999-2000  
Measure of Success: Produce and distribute habitat needs recommendations.

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## I. HABITAT RESTORATION ACTION ITEMS

<b>Goal 1: Preserve and improve wildlife habitat</b>
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**Objective 3: Support the preservation of valued habitat.**

Introductory Statement:

As valued habitat is a dwindling resource, efforts to preserve remaining valued habitat need to be bolstered to address future stresses.

Supporting Task:

1. Inventory high quality sites which promote biodiversity and disseminate this information as appropriate.

Implementing Group: Advisory Committee

Year Start/End: 1999

Measure of Success: Site inventory produced and distributed.

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## I. HABITAT RESTORATION ACTION ITEMS

<b>Goal 1: Preserve and improve wildlife habitat</b>
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**Objective 4: Uniform adoption by municipal inland wetland agencies of a minimum 100 foot regulatory review area adjacent to wetlands and watercourses.**

Introductory Statement:

A regulated (not prohibitory) buffer adjacent to wetlands and watercourses is essential to minimize impacts that reduce habitat quality and improve water quality.

Supporting Tasks:

1. Review each municipality's inland wetlands and watercourses regulations and develop information package to enable municipalities to compare and contrast their regulations, and to make informed decisions about the benefits of establishing a 100 foot regulatory review area adjacent to wetlands and watercourses  
Implementing Group: Advisory Committee  
Year Start/End: 2000  
Measure of Success: Regulation review document and information package developed and distributed.
2. Follow up with Inland Wetland/Conservation Commissions to urge or assist in the adoption of the 100 foot regulatory review area  
Implementing Group: Advisory Committee, Municipalities  
Year Start/End: 2000-2005  
Measure of Success: One hundred foot regulatory review area adjacent to wetlands and watercourses is adopted by each watershed municipality.

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## I. HABITAT RESTORATION ACTION ITEMS

<b>Goal 2: Restore anadromous fish passage</b>
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### **Objective 1: Restore anadromous fish passage.**

#### Introductory Statement:

Restoration of anadromous fish passage will provide opportunities for greater biodiversity and larger fish populations within the watercourses.

#### Supporting Tasks:

1. Examine the historic use of the Norwalk River and its tributaries in terms of species composition and geographical limits  
Implementing Group: State and Federal Agencies  
Year Start/End: 1999-2000  
Measure of Success: Document describing the historic use of the Norwalk River by various anadromous fish species produced.
  
2. Examine the existing and potential streambed conditions for their ability to meet the habitat needs of anadromous fish.  
Implementing Group: State and Federal Agencies  
Year Start/End: 1999-2000  
Measure of Success: Document describing existing and potential streambed conditions produced.
  
3. Examine the character and potential for reversal of identified fish passage blockages if streambed conditions are acceptable.  
Implementing Group: State and Federal Agencies  
Year Start/End: 1999  
Measure of Success: Plan that establishes the proposed methods of fish passage blockage reversal prepared.
  
4. Make recommendations for achievable restoration, noting areas with potential to be restored, specifying method of blockage restoration, (i.e., fish ladder or dam removal), and identifying targeted species.  
Implementing Group: State and Federal Agencies  
Year Start/End: 1999-2000  
Measure of Success: Report of recommendations developed and submitted to appropriate entities.
  
5. Oversee the implementation of management practices to restore fish passages as recommended above.  
Implementing Group: Advisory Committee  
Year Start/End: 1999-Ongoing  
Measure of Success: Fish passage(s) restored.

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## I. HABITAT RESTORATION ACTION ITEMS

<b>Goal 3: Foster cold water fisheries</b>
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### **Objective 1: Reestablish and protect riparian zones.**

#### Introductory Statement:

Adequate riparian zones are important in maintaining cooler water temperatures, reducing nutrient loading, and reducing shoreline erosion.

#### Supporting Tasks:

1. Implement the two demonstration riparian restoration projects at a commercial site (Perkin-Elmer in Norwalk) and at a residential site (Fox Hills in Ridgefield).  
Implementing Group: FCSWCD, CTDEP, NRCS  
Year Start/End: 1998-1999  
Measure of Success: Designated sites restored.
2. Seek funding to restore riparian zones.  
Implementing Group: Advisory Committee  
Year Start/End: 1998-ongoing  
Measure of Success: Funding received.
3. Document the design, implementation and outcome of restoration projects and communicate benefits to municipal boards and general public.  
Implementing Group: FCSWCD, Advisory Committee  
Year Start/End: 1998-ongoing  
Measure of Success: Report documenting status of projects prepared and distributed.

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## I. HABITAT RESTORATION ACTION ITEMS

<b>Goal 3: Foster cold water fisheries</b>
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**Objective 2: Restore streambeds impacted by road sand deposition and seek solutions to reduce future road sand sedimentation.**

Introductory Statement:

Accumulation of road sand within the Norwalk River and its tributaries degrades cold water fisheries habitat by eliminating suitable spawning areas and habitat to support food sources (benthic invertebrates).

Supporting Tasks:

1. In cooperation with municipal public works departments and Connecticut Department of Transportation, develop and implement the most effective methodology for reducing the deposition of road sand into watercourses.  
Implementing Group: Advisory Committee, Municipalities, ConnDOT, FCSWCD  
Year Start/End: 1999-2004  
Measures of Success: Guidelines to reduce the amount of sand deposited into watercourses produced and implemented; subsequent reduction in sand deposition.
2. Reduce direct stream discharges of stormwater through retrofitting existing discharges and by minimizing or avoiding discharges associated with road improvement projects and new construction.  
Implementing Group: Advisory Committee, Municipalities, State  
Year Start/End: 1998-ongoing  
Measures of Success: Existing discharges retrofitted and new construction with fewer or no direct storm water discharges to watercourses approved.

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## I. HABITAT RESTORATION ACTION ITEMS

<b>Goal 3: Foster cold water fisheries</b>
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### **Objective 3: Enhance in-stream habitat conditions.**

#### Introductory Statement:

Historically, in-stream conditions have suffered negative impacts with respect to supporting cold water fisheries by management and surrounding land use practices. Steps must be taken to reverse these impacts in order to recreate watercourse conditions suitable for cold water fish.

#### Supporting Tasks:

1. Review stream morphology and habitat characteristics to identify contiguous reaches of stream capable of sustaining a cold water fishery.  
Implementing Group: DEP, NRCS  
Year Start/End: 1998-1999  
Measures of Success: Document detailing the reaches of stream capable of sustaining cold water fisheries produced.
2. Seek funding and support to implement habitat restoration and enhancement projects in identified viable stream reaches.  
Implementing Group: Advisory Committee, Municipalities, Trout Unlimited  
Year Start/End: 1998-ongoing  
Measures of Success: Receipt of funding; implementation of restoration and enhancement projects providing fish passage, in-stream cover, bank cover, supplementing spawning gravel and riparian zone improvements.



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## II. LAND USE/FLOOD PROTECTION/OPEN SPACE ACTION ITEMS

**Goal: Promote balanced growth which preserves property values and protects and enhances the watershed's resources for future generations**

**Objective 1: No net loss of wetlands and where possible, re-establish, restore, and enhance wetlands as part of new development or renovation projects.**

Introductory Statement:

Wetlands provide major environmental and economic benefits to a community. They are critical to water supply, serve to eliminate pollution, prevent and mitigate storm and flood damage, provide habitat for wildlife and fisheries, and furnish recreational opportunities.

Supporting Tasks:

1. Complete a wetlands inventory (inland and tidal) and develop an updated wetlands map (1:12000 preferred).  
Implementing Group: Advisory Committee, Municipalities  
Year Start/End: 1999-2004  
Measure of Success: Inventory completed and updated wetland maps developed.
2. Develop a no-net loss policy.  
Implementing Group: Advisory Committee, CTDEP, Municipalities  
Year Start/End: 2000-2002  
Measure of Success: Model policy developed.
3. Explore feasibility of mitigation and "wetland banking" for inland wetlands only.  
Implementing Group: Advisory Committee, CTDEP, Municipalities  
Year Start/End: 2001-2002  
Measure of Success: Feasibility determination made and incorporated into no net loss policy, if appropriate.
4. Each municipality to adopt a no net loss policy.  
Implementing Group: Municipalities  
Year Start/End: 2002-2004  
Measure of Success: No net loss policy is adopted by each municipality.

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## II. LAND USE/FLOOD PROTECTION/OPEN SPACE ACTION ITEMS

<b>Goal: Promote balanced growth which preserves property values and protects and enhances the watershed's resources for future generations</b>
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**Objective 2: Identify appropriate areas for public access to the rivers and streams, and increase public access where appropriate.**

Introductory Statement:

Public access will allow public enjoyment and appreciation of the Norwalk River and its tributaries.

Supporting Tasks:

1. Develop a public access areas inventory (existing and potential). Compile list and map with location, size of area, ownership, and potential active and passive uses; this list should not impact sensitive areas.  
Implementing Group: Advisory Committee, Municipalities, Private Conservation and Civic Community Organizations  
Year Start/End: 1999-2005  
Measure of Success: Inventory and maps produced.
2. Estimate the social, economic, and environmental resource values of each site in the above listing of public access areas.  
Implementing Group: Advisory Committee, Municipalities, Private Conservation and Civic Community Organizations  
Year Start/End: 1999-2005  
Measure of Success: Resource values ranked.
3. Estimate costs to improve and maintain public areas.  
Implementing Group: Advisory Committee, Municipalities  
Year Start/End: 1999-2005  
Measure of Success: Per town costs listed.
4. Secure funding for acquisition, construction, and maintenance of identified areas.  
Implementing Group: Municipalities, Private Conservation and Civic Community Organizations.  
Year Start/End: 1999-2005  
Measure of Success: Grant applications/other instruments for attaining funding prepared and submitted; if successful, projects completed. Increased public access.

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## II. LAND USE/FLOOD PROTECTION/OPEN SPACE ACTION ITEMS

<b>Goal: Promote balanced growth which preserves property values and protects and enhances the watershed's resources for future generations</b>
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**Objective 3: Ensure that land use planning includes adequate water supply resources, storm water drainage systems, and wastewater treatment systems (both onsite and sewer systems).**

Introductory Statement:

This watershed will continue to be impacted by the pressures to develop. It is important to consider the limitations of the watershed system when planning for drinking water supply, storm water management, and wastewater treatment.

Supporting Tasks:

1. Coordinate land use planning with sewage treatment system capacity and public water supply resources.  
Implementing Group: Municipalities, State Agencies, Public and Private Water Companies.  
Year Start/End: 1998-ongoing  
Measure of Success: Responsible implementing group(s) plan and coordinate together. Map(s) for each municipality prepared show areas able to support growth without need for infrastructure, those with minimal addition to infrastructure, those with major investment in infrastructure, and those where onsite facilities should be discouraged.
2. Hold workshops on innovative storm water management techniques and groundwater recharge.  
Implementing Group: Advisory Committee, NEMO  
Year Start/End: 1999-ongoing  
Measure of Success: Workshops held with adequate representation from all watershed towns and others (i.e., public works departments, land use authorities, the public, and developers).
3. Hold workshop of local flood control officials with the goal of adopting coordinated drainage standard.  
Implementing Group: Municipalities, Advisory Committee, Federal, Regional, and State Agencies  
Year Start/End: 2000-2004  
Measure of Success: Workshops held with adequate representation from all watershed towns.
4. Adopt consistent storm water drainage standards into each municipality's zoning regulations which meet the requirements of different land use and habitat characteristics. Encourage groundwater recharge and discourage use of blanket zero peak increase in runoff without considering runoff volumes.  
Implementing Group: Municipalities  
Year Start/End: 2002-2004  
Measure of Success: Consistent storm water drainage standards adopted.

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## II. LAND USE/FLOOD PROTECTION/OPEN SPACE ACTION ITEMS

<b>Goal: Promote balanced growth which preserves property values and protects and enhances the watershed's resources for future generations</b>
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**Objective 4: Have each town integrate the recommendations of the watershed plan into its land use regulations and design standards.**

Introductory Statement:

The goals of this Action Plan need to become part of each towns' public plan of governance in order to affect local decision making about the watershed.

Supporting Tasks:

1. Work with each municipality to integrate the recommendations of the Action Plan within one year of the date of the plan's formal adoption and update every 10 years thereafter.  
Implementing Group: Municipalities, State Agencies, Advisory Committee  
Year Start/End: 1998-ongoing  
Measure of Success: Incremental adoption of appropriate plan recommendations into the regulations of each municipality. Recommendations reviewed and updated, as necessary, every ten years thereafter.
2. Each municipality should designate or hire an environmental professional to pursue the objectives of this plan.  
Implementing Group: Municipalities  
Year Start/End: 1999-ongoing  
Measure of Success: Environmental professional in place for each municipality.

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## II. LAND USE/FLOOD PROTECTION/OPEN SPACE ACTION ITEMS

<b>Goal: Promote balanced growth which preserves property values and protects and enhances the watershed's resources for future generations</b>
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### **Objective 5: Minimize loss of life and damage to property caused by flooding.**

#### Introductory Statement:

The Norwalk River Watershed has been subject to flooding ever since the area has been settled, with the flood of 1955 being the most recent. Many homes and businesses have since been built in the floodplain, and in the event of a flood of similar magnitude, damages to property of more than \$21 million would occur. If a 10-year, or 10 percent chance, flood were to occur, damages are estimated to be \$2.6 million.

#### Supporting Tasks:

1. Improve flood monitoring by establishing and funding an early flood warning system (ALERT) in Ridgefield, Redding, Wilton, and Norwalk.  
Implementing Group: Municipalities, CTDEP  
Year Start/End: 1998-1999  
Measure of Success: ALERT system in place.
2. Identify non-structural flood control measures for existing floodprone structures.  
Implementing Group: Municipalities, CTDEP, NRCS  
Year Start/End: 1998-1999  
Measure of Success: Listing of nonstructural flood control measures for each existing floodprone structure in the watershed.
3. Implement non-structural flood control measures (including the acquisition of homes in high hazard areas and undeveloped lands).  
Implementing Group: Municipalities, CTDEP  
Year Start/End: 1999/ongoing  
Measure of Success: Highest threat properties purchased; implement flood proofing measures for other structures at risk.
4. Establish an inspection/maintenance program for the floodway.  
Implementing Group: Municipalities, CTDEP  
Year Start/End: 2000-ongoing  
Measure of Success: Inspection/maintenance program established, with timetable to conduct inspections.
5. Provide education regarding damage caused by floods.  
Implementing Group: Advisory Committee, Municipalities, CTDEP, NRCS  
Year Start/End: 1999-ongoing  
Measure of Success: Educational kits and programs developed and disseminated. Have information in the hands of the public, municipal officials, and those insuring homes.

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## II. LAND USE/FLOOD PROTECTION/OPEN SPACE ACTION ITEMS

<b>Goal: Promote balanced growth which preserves property values and protects and enhances the watershed's resources for future generations</b>
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**Objective 5: Minimize loss of life and damage to property caused by flooding (continued).**

6. Adopt a long-term goal of no flood-prone buildings in the watershed.  
Implementing Group: Municipalities  
Year Start/End: 2000-ongoing  
Measure of Success: Planning and zoning commissions of each municipality adopt this goal.
  
7. Incorporate and involve the Norwalk River Watershed community into CTDEP's municipal flood plain management and mitigation workshops.  
Implementing Group: Advisory Committee, CTDEP, NRCS  
Year Start/End: 1999-ongoing  
Measure of Success: Workshops held in the Norwalk River Watershed; attendees represent many watershed interests.

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## II. LAND USE/FLOOD PROTECTION/OPEN SPACE ACTION ITEMS

<b>Goal: Promote balanced growth which preserves property values and protects and enhances the watershed's resources for future generations</b>
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**Objective 6: Ensure that all local regulations remain in compliance with FEMA regulations and investigate higher standards in response to high damage hazard.**

Introductory Statement:

The federal standards established provide a minimum level to protect life and property from the devastation of floods. Until such time as the flood prone areas within the watershed are free of structures, more stringent regulatory measures will provide a greater level of protection for affected residents.

Supporting Tasks:

1. Work with municipalities in the watershed, regional planning agencies, and councils of government to encourage development of more restrictive and consistent flood plain management regulations.

Implementing Group: CTDEP, NYDEC, Federal Emergency Management Agency (FEMA)

Year Start/End: 1999-ongoing

Measure of Success: Each watershed town adopts more restrictive regulations.

2. Conduct an inventory of present floodplain zoning and determine where inconsistencies lie as a basis for developing future watershed-wide standards.

Implementing Group: Advisory Committee, Municipalities, CTDEP, NRCS

Year Start/End: 1999-2000

Measure of Success: Inventory completed . Based on this inventory, consistent watershed-wide flood plain zoning standards drafted and adopted by each municipality.

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## II. LAND USE/FLOOD PROTECTION/OPEN SPACE ACTION ITEMS

<b>Goal: Promote balanced growth which preserves property values and protects and enhances the watershed's resources for future generations</b>
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**Objective 7: Recognize, maintain, and increase open space to ensure the proper functioning of the watershed.**

Introductory Statement:

Land contributing to the proper functioning of a watershed, such as wetlands, aquifers, riparian zones, and floodplains, need special protection. These lands can be protected in many ways, including purchase, easements, and tax breaks.

Supporting Tasks:

1. Identify, list and map, and then protect and/or acquire open space immediately adjacent to the Norwalk River and other critical areas within the watershed as recommended by local plans of conservation and development.  
Implementing Group: Municipalities, CTDEP, NYDEC, Private Conservation and Civic Community Organizations  
Year Start/End: 1999-ongoing  
Measure of Success: Lands with watershed protection value protected and/or acquired.
2. Identify, protect, and/or acquire critical land needed to accomplish no net increase in runoff.  
Implementing Group: Municipalities, CTDEP, NYDEC, NRCS  
Year Start/End: 1999-ongoing  
Measure of Success: Lands with watershed protection value protected and/or acquired.



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## II. LAND USE/FLOOD PROTECTION/OPEN SPACE ACTION ITEMS

<b>Goal: Promote balanced growth which preserves property values and protects and enhances the watershed's resources for future generations</b>
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**Objective 8: Recognize that the streams, streambanks, and riparian areas within the Norwalk River Watershed are fragile places which should be conserved, restored, and protected.**

Introductory Statement:

Streams, streambanks, and riparian areas in the watershed are important to protect or enhance water quality and provide wildlife corridors.

Supporting Tasks:

1. Create a regional open space plan and seek funds for open space purchase.  
*Implementing Group:* Advisory Committee, Municipalities, Regional Agencies, State and Federal Agencies, Private Conservation and Civic Community Organizations  
*Year Start/End:* 1999-2005  
*Measure of Success:* One or more workshop/facilitated session for municipal planning, conservation, and wetland commissioners convened to discuss opportunities for coordinated open space plans and funding. Plan created and funds obtained.
2. Support state funding and seek grants for a "Norwalk River Valley Linear Park," greenways, uplands, flood hazard areas and linking parcels.  
*Implementing Group:* Advisory Committee, Municipalities, CTDOT, CTDEP, Regional Agencies, Private Conservation and Civic Community Organizations  
*Year Start/End:* 1999-ongoing  
*Measure of Success:* Funding acquired to purchase land and/or interest in lands which create linear parks, and greenways, or protect uplands and flood hazard areas.
3. Identify incentives or mechanisms for acquiring open space and encourage municipalities to adopt them.  
*Implementing Group:* Advisory Committee, Municipalities, CTDEP, NYDEC, NRCS, Private Conservation and Civic Community Organizations  
*Year Start/End:* 1999-ongoing  
*Measure of Success:* Incentives identified and presented to appropriate governing bodies. Material which provides legal enabling legislation and example language for ordinances prepared and distributed to each municipality.

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## II. LAND USE/FLOOD PROTECTION/OPEN SPACE ACTION ITEMS

<b>Goal: Promote balanced growth which preserves property values and protects and enhances the watershed's resources for future generations</b>
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**Objective 8: Recognize that the streams, streambanks, and riparian areas within the Norwalk River Watershed are fragile places which should be conserved, restored, and protected (continued).**

4. Designate open space parcels as per Section 12-107(e) of the Connecticut General Statutes, classification of land as open space lands.  
Implementing Group: Municipalities, Landowners, Private Conservation and Civic Community Organizations  
Year Start/End: 1999-ongoing  
Measure of Success: Parcels designated. Successful response to letters sent to property owners who might qualify for the reduced tax rate for agricultural, open space, or forestry lands.
  
5. Work with Connecticut state legislators to amend Section 12-107(e) to provide municipalities and the state with the right of first refusal for properties designated as open space.  
Implementing Group: Municipalities, State agencies  
Year Start/End: 1999-ongoing  
Measure of Success: Legislation drafted, submitted to, and passed by state legislature.
  
6. Work with municipalities to amend zoning, and subdivision regulations, if necessary, to conserve, restore, and protect the streams, streambanks, and riparian areas of the watershed.  
Implementing Group: Municipalities, Private Conservation and Civic Community Organizations  
Year Start/End: 1999-ongoing  
Measure of Success: Regulations amended where appropriate.

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## II. LAND USE/FLOOD PROTECTION/OPEN SPACE ACTION ITEMS

**Goal: Promote balanced growth which preserves property values and protects and enhances the watershed's resources for future generations**

**Objective 9: Establish conservation as an integrated functional part of the regulatory system of each watershed community, with each community supporting the same objectives and protecting the watershed from its origin in Ridgefield to its base where the Norwalk River meets Long Island Sound in Norwalk.**

Introductory Statement:

Each of the watershed's municipalities allow for some form of alternative development. This may range from cluster housing to conservation developments. Innovative approaches should be considered to lessen negative impacts often associated with traditional developments.

Supporting Tasks:

1. Establish a conservation planning task force for each town, through its conservation and planning commission, to review the town's plan of development and evaluate those parts of the plan which address conservation issues and the state of the environment.  
Implementing Group: Municipalities  
Year Start/End: 1998-1999  
Measure of Success: A conservation task force is set in place.
2. Prepare an inventory (with maps) of existing natural resources and open spaces within each community that would benefit from long-term conservation and environmental protection.  
Implementing Group: Municipalities (Conservation Planning Task Force)  
Year Start/End: 1999-2001  
Measure of Success: Inventory of conservation sites and maps for each town is completed.
3. Recommend language and conservation - specific components for incorporation in the town plan of development. The task force would anticipate the environmental impact of future development, establish guidelines for evaluation of conservation proposals, and document conservation land use policy.  
Implementing Group: Municipalities (Conservation Planning Task Force)  
Year Start/End: 2000-2001  
Measure of Success: Each town's plan of development is updated to include conservation-specific components.

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## II. LAND USE/FLOOD PROTECTION/OPEN SPACE ACTION ITEMS

<b>Goal: Promote balanced growth which preserves property values and protects and enhances the watershed's resources for future generations</b>
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**Objective 9:** Establish conservation as an integrated functional part of the regulatory system of each watershed community, with each community supporting the same objectives and protecting the watershed from its origin in Ridgefield to its base where the Norwalk River meets Long Island Sound in Norwalk (continued).

4. Review all zoning, wetland, and flood control regulations for each municipality to determine which (if any) regulations are in conflict with the land conservation purposes of the town plan, and whether conservation specific regulations are needed to make the plan effective as part of the review. Consider cluster zoning, alternate development plans, and conservation lots as part of the review.

Implementing Group: Municipalities, Private Conservation and Civic Community Organizations

Year Start/End: 2000-2001

Measure of Success: List of conflicting regulations completed, and draft revisions are ready for review and adoption at public hearing(s) called to consider changes in regulations.

5. Publish and implement fully integrated conservation zoning regulations to guide land use applicants and those regulatory commissions called upon to process land use applications.

Implementing Group: Municipalities (Regulatory Commissions)

Year Start/End: 2001-2002

Measure of Success: Integrated regulations are published and land use applications are considered in conformity with workable regulations that fully support the environment.

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### III. WATER QUALITY ACTION ITEMS

<b>Goal:</b> To restore and protect surface and ground water to meet state water quality standards throughout the watershed such that the Norwalk River supports its designated uses (e.g., fishing, swimming, drinking water)
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**Objective 1:** Determine if the extensive pond/lake eutrophication observed in the watershed is affecting instream water quality.

Introductory Statement:

Many of the ponds and impoundments in the watershed exhibit extensive algal growth at an early date. There is little information available as to the extent and impact of these algal blooms on water quality in the watershed.

Supporting Tasks:

1. Develop a pond/lake eutrophication assessment criteria and a plan to assess eutrophication in selected water bodies and determine the role of impoundments in attenuating nutrient loads to Norwalk Harbor and Long Island Sound.  
Implementing Group: Federal and State Agencies  
Year Start/End: 2000-2000  
Measure of Success: Assessment criteria and assessment plan completed.
2. Select two or three watershed ponds for assessment by CTDEP personnel, other appropriate parties (e.g., municipal health departments). Use volunteer groups (neighborhood or school) to collect data; provide training in data collection, as needed.  
Implementing Group: Advisory Committee, Private Conservation and Civic Community Organizations  
Year Start/End: 2000-2002  
Measure of Success: Assessment completed; report with recommendations drafted.
3. If eutrophication is found to affect water in the Norwalk River Watershed and/or Norwalk Harbor, develop recommendations to reduce pollutant loading.  
Implementing Group: Advisory Committee, Federal, State Agencies  
Year Start/End: 2000-2002  
Measure of Success: Specific recommendations identified.
4. Distribute information concerning recommendations.  
Implementing Group: Advisory Committee, Municipalities, Private Conservation and Civic Community Organizations  
Year Start/End: 2001-2002  
Measure of Success: Informational materials (e.g., brochure) prepared and distributed to appropriate individuals/groups.

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### III. WATER QUALITY ACTION ITEMS

**Goal: To restore and protect surface and ground water to meet state water quality standards throughout the watershed such that the Norwalk River supports its designated uses (e.g., fishing, swimming, drinking water)**

**Objective 2: Ensure adequate maintenance of septic systems.**

Introductory Statement:

Surface and ground water can be contaminated by septic systems. A septic system, like other technology, needs maintenance to operate successfully throughout its life. Typically, septic systems last 20 to 30 years before needing replacement. The Norwalk River Watershed has experienced tremendous growth in the last 20-30 years; many systems may be nearing their functional lifetime or may have a reduced lifetime due to lack of maintenance. Proper maintenance will keep the environment healthy and prolong the life of the systems, thereby reducing replacement costs and the need for sewer extensions.

Supporting Tasks:

1. Create an incentive-based model ordinance for septic system inspection and maintenance.  
Implementing Group: Municipal Health Departments, Advisory Committee, NRWA  
Year Start/End: 1998-2002  
Measure of Success: Model ordinance(s) drafted.
2. Review model ordinance with municipal health departments for feedback, change, acceptability, and course of action and urge its adoption by all towns within the watershed.  
Implementing Group: Advisory Committee, NRWA, Municipal Health Departments  
Year Start/End: 1999-2000  
Measure of Success: Model ordinances reviewed and continued on an ongoing basis.
3. Develop an education program for septic system maintenance and the model ordinance.  
Implementing Group: Municipal Health Departments, NRWA  
Year Start/End: 1999-2005  
Measure of Success: Septic system maintenance education program established and continued on an ongoing basis.
4. Adopt septic system ordinance within each watershed municipality.  
Implementing Group: Municipalities  
Year Start/End: 2000-2005  
Measure of Success: Septic system inspection and maintenance ordinance adopted by each municipality.