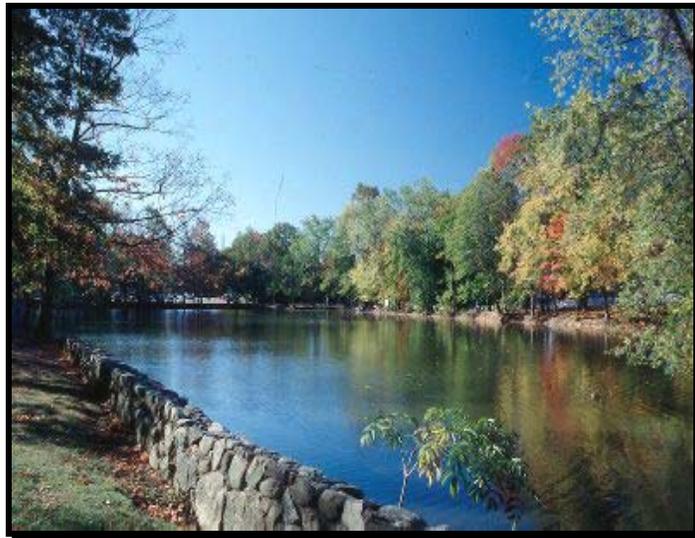


APPENDIX A3

ENVIRONMENTAL RESOURCES



Introduction

The appendix reviews six environmental subject areas: 1) aquifers; 2) watercourses and watersheds; 3) wetlands; 4) floodplains; 5) coastal resources; and 6) air quality. Within each of these subject areas, current conditions are identified; issues and opportunities are explored; and current protection tools used are outlined.

1. Aquifers

Darien has several aquifers of coarse-grained sand and gravel (stratified drift), which typically yield more water than finer-grained bedrock aquifers. These notable aquifer formations are associated with the Noroton River, Holly Pond, Stony Brook, Five Mile River, Tokeneke Brook, and the Goodwives River (see Exhibit 3-1).

There is one public drinking water supply aquifer in Darien associated with the geologic formation along the Noroton River. The water supply comes from the Rewak Well, which is owned and managed by Aquarion Water Company and supplies 15 percent of Darien's population with potable water (for more information on Aquarion Water Company, and Water Supply in general, see Chapter 7: Public Facilities and Services). The remainder of Darien's drinking water comes from a regional system of reservoirs and aquifers located outside Darien.

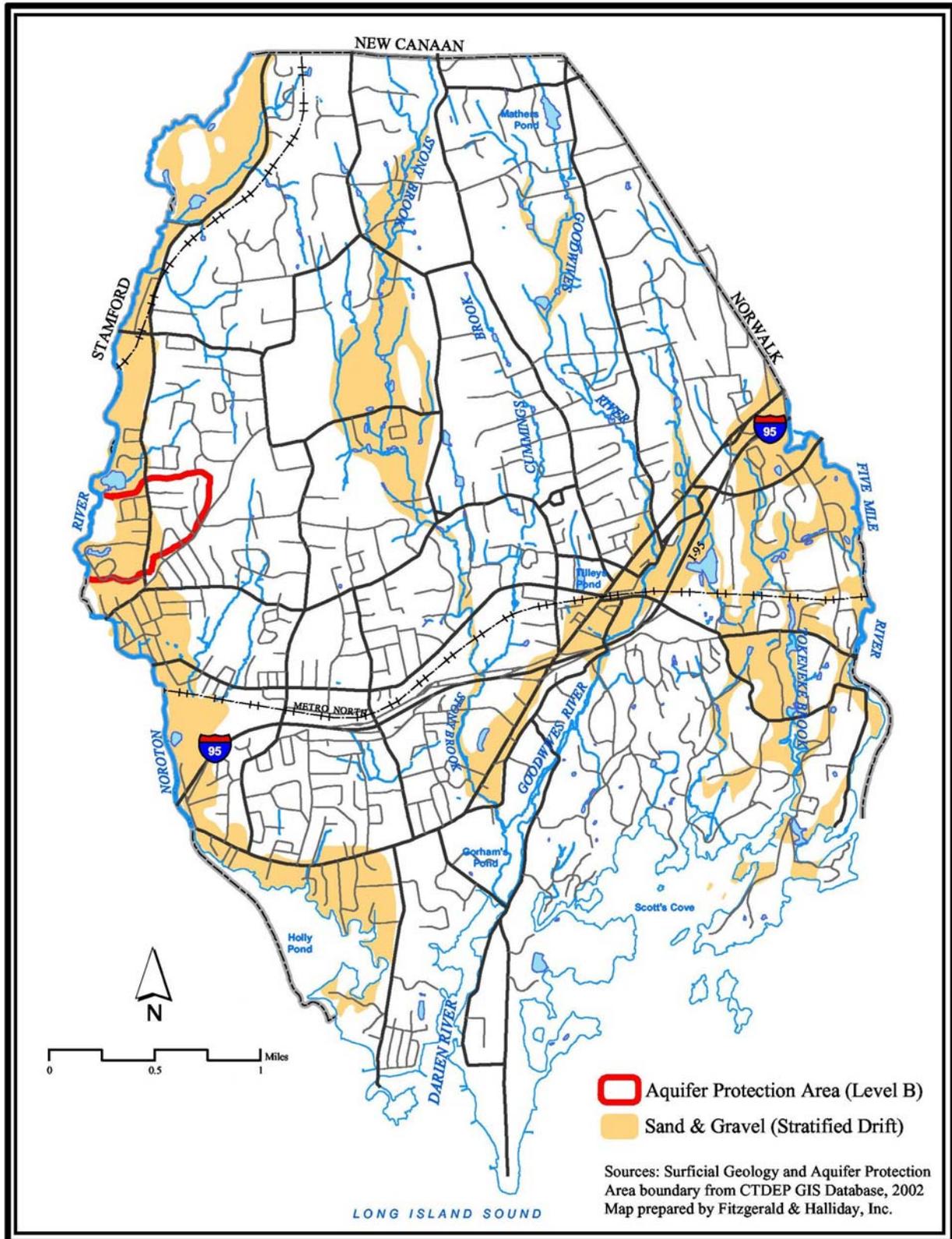
Aquifer Protection Areas

The Connecticut Department of Environmental Protection (CTDEP) has designated an aquifer protection area (APA) around this active well (see Exhibit 3-1). The 221-acre APA straddles both Darien and Stamford, with approximately 131 acres lying within Darien. Currently, the Rewak Well has the capacity to provide between 300,000 and 400,000 gallons of drinking water per day. In 1989, the State enacted APA laws requiring municipalities to identify important drinking water aquifers and adopt land use regulations to protect water quality. The CTDEP has been developing a model land use regulation for municipalities to implement aquifer protection locally. Darien does not have any regulatory measures in place specifically relating to aquifer protection. However, the Town must weigh regulatory protection measures with the size of the APA and the fact that the APA is already developed within a stable residential neighborhood.

Issues & Opportunities

The groundwater quality of the aquifer serving Darien is very high. This high quality should be protected from contamination both from point sources of pollution such as leaking underground storage tanks and non-point sources such as fertilizers and pesticides used on lawns. The potential for non-point source contamination of the groundwater supply or aquifer in Darien is the greatest concern due to the predominantly residential character of the community.

EXHIBIT 3-1 AQUIFER RESOURCES



Water Quality

The APA ground water quality is classified as “GA” (Groundwater quality rated A), except for the “area of contribution” (area within the 500-foot radius of the well), which is classified as “GAA-Well-Impaired”. The GA and GAA classifications mean the water quality in the APA is generally high enough that it is suitable as a drinking water supply. The “GAA-Well-Impaired” classification is due to volatile organic compounds (VOC) detected in the Rewak Well in the early 1980s. The primary source was the Stamford industrial land uses across the Noroton River. An air stripper was installed that works continuously to remove VOCs and the problem is being corrected.

The Rewak Well aquifer protection area (APA) spans both Darien and Stamford. Consequently, issues of quality and quantity affect a larger geographic region than just Darien. Since the well and water supply system is privately owned and managed, the Town has no authority to directly manage water quality, water usage, and adequacy of the supply system, or to control land uses in Stamford that may affect the APA. For Water Quality Classifications within Darien, see Exhibit 3-2.

For a variety of reasons, the potential for direct groundwater contamination is low. Potential non-point sources of water pollution in Darien include a variety of residential activities and contaminated stormwater runoff from roadways. These may pose the greatest threat to groundwater quality over time.

Darien gets the bulk of its public water supply from sources outside the community via a regional system of reservoirs and aquifers. However, the APA still provides a key resource. The need to draw water from this aquifer will continue into the foreseeable future, and could grow, as water demands increase. Indeed, although much of Darien is fully developed, there is a recognized development trend of replacing older smaller residences with larger residences having more bathrooms and water amenities such as lawn sprinklers and swimming pools. This redevelopment results in direct increased use of water as well as the indirect effects of larger building footprints. Increases in building footprints result in a higher percentage of impervious surface within the APA, reducing groundwater recharge rates and potentially reducing a well’s yield. A reduction in aquifer recharge rates may impact both public drinking water wells and any private wells still in use by some residences in Darien.

Protection Tools Currently Used In Darien

Within Darien, the zoning within the APA is for single-family residences. This area of Town is dominated by older, well-established subdivisions. The lots are small with the exception of the Middlesex Swim Club at the terminus of Echo Drive, the Darien Land Trust property at the end of Heather Lane, and two parcels on Hoyt Street containing Holmes Elementary School. This zoning and land use pattern protects against potentially hazardous uses such as gas stations from locating within the APA.

Darien regulates and monitors the installation and removal of underground storage tanks from a fire safety perspective. However, no comprehensive inventory of residential underground home heating oil tanks has been developed.

2. Watercourses and Watersheds

Generally, watercourses such as rivers and streams in Darien flow in a north-south direction and drain into Long Island Sound (see Exhibit 3-2).

Within a watershed, impervious surfaces contribute to water pollution by transporting pollutants into receiving water bodies and/or watercourses, impacting aquatic integrity and coastal resources. This type of water pollution is typically called “non-point source pollution.” Water quality is also impacted by discharges from “point sources.” See Exhibits 3-1 and 3-5 for more information about impervious surfaces.

Darien’s watercourses are an integral part of the Town’s natural resources in that they support other important natural resources, such as wetlands, floodplains, recharge of groundwater/aquifers, coastal resources, and wildlife habitat and corridors. The health and integrity of watercourses are linked to overall watershed and adjacent land use conditions.

Natural soil erosion potential is based on soil characteristics, vegetative cover, and topography, which lead to sedimentation loading of stream (watercourse) beds and ponds. Sedimentation of ponds and other waterbodies impact wildlife habitat, flood storage capacity, and the chemistry of the water body, which can hasten degraded water quality. Several dammed ponds within Town are prone to continual sedimentation. In particular, Darien River, Gorham’s Pond, the Town Hall pond (along Stony Brook, which was created to serve as a sedimentation basin), upper Gorham’s Pond (or Upper Pond), and an artificial sedimentation basin associated with Tilley’s Pond are water bodies generally dredged due to sedimentation loading.

Erosion and sedimentation has resulted in the need for both the Town and private entities to dredge ponds. The Town dredges only a small number of ponds located within town-owned property. Private groups have dredged other ponds, such as Gorham’s Pond, Darien River, Holly Pond, and various smaller ponds within the Goodwives River watershed.

Preservation of native vegetative buffers is critical for holding soils in place, filtering out pollutants, providing shade (to maintain cooler water temperatures), contributing plant and insect foods to the stream system, and preventing invasive species from moving into streamside habitats.

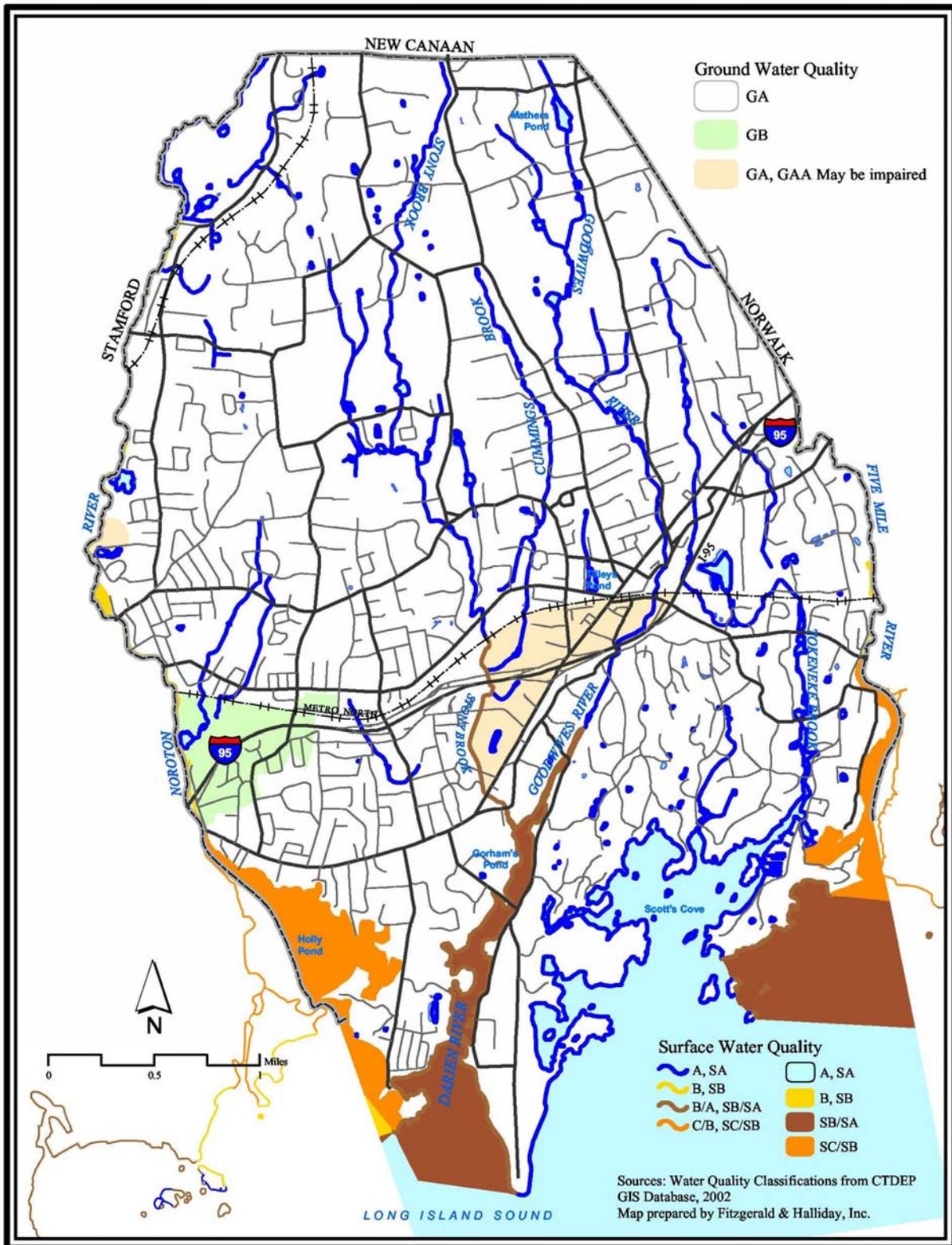
Issues and Opportunities

The primary issues for watercourses and watersheds in Darien are:

- *Non-point Source Pollution*

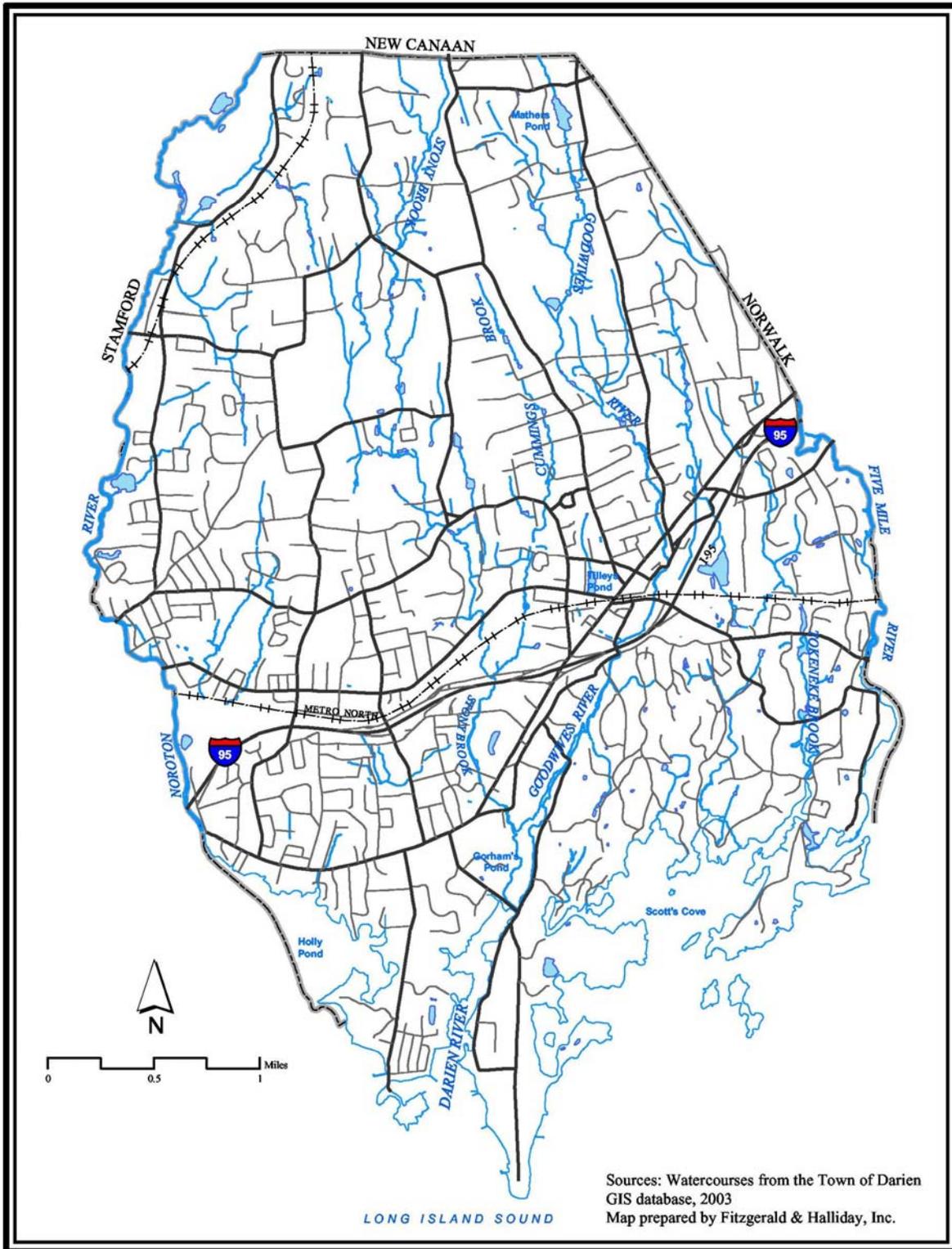
Approximately 27 percent of local roads in Darien are under private ownership. This limits the Town’s ability to ensure proper road sweeping practices and use of other tools to minimize potential contaminants in stormwater runoff from roads in all areas. The potential for non-point source contamination of streams, rivers, and ponds in Darien is a concern due to the predominantly residential character of the community.

EXHIBIT 3-2 WATER QUALITY



See Page A3-3 for more details on the water quality classifications.

EXHIBIT 3-3 WATER RESOURCES



- *Watercourse Buffer Areas*

Water quality in rivers, streams, and ponds in Darien is impacted by ongoing loss of sufficient naturally vegetated buffers between development and these watercourses.

- *Stormwater Management/Erosion and Sedimentation*

Since about 27 percent of local roads in Darien are under private ownership, the Town's ability to manage stormwater runoff is limited.

Darien land use regulations lack adequate provisions to control the amount of impervious surface created in the course of development.

Current land use regulations do not require applicants to provide sufficient information on stormwater management plans to ensure adequate erosion and sedimentation control.

Sedimentation of ponds and lakes in Darien is a concern, as several dammed ponds are prone to continual sediment buildup and there has been a need for both the Town and private entities to conduct dredging.

- *Invasive Species*

The spread of the invasive species such as *Phragmites* along Darien's watercourses and into wetlands is a concern.

There is a close correlation between the percentage of imperviousness in each local watershed within Darien and level of intensity of development (zoning). Two key mechanisms for improving water quality of watercourses within impacted and degraded watersheds are minimizing the creation of new impervious surface area and using vegetative buffers where development is adjacent to a watercourse. The preservation of naturally vegetated buffers has been an issue in Darien as property redevelopment occurs. Another important mechanism would be managing stormwater runoff from roads. However, many of Darien's town roads are under private ownership. This greatly limits the Town's ability to ensure proper road sweeping and/or management of drainage impacts.

Protection Tools Currently Used in Darien

The Inland Wetland and Watercourses Regulations (IWW) for Darien are intended to protect both wetlands and watercourses. Regulated activities include the prohibition of any earth disturbing activity within 100 feet of Holly or Gorham's Pond, or the mean high water line of the Noroton, Five Mile, or Goodwives River, or within 50 feet of inland wetlands. There are also 150 and 200 foot setbacks for subsurface waste disposal systems (septic systems).

The Zoning Regulations include a provision allowing the Planning and Zoning Commission to require conservation easements as part of development. Such easements can be used to create protection between development and watercourses.

The Zoning Regulations do include some provisions limiting area of a lot covered by impervious surfaces (building lot coverage and developed site area).

The Zoning Regulations include sections on Land Filling, Excavation, and Earth Removal (Section 850) and Soil Erosion and Sediment Control (Section 870) that requires provision for managing stormwater runoff and erosion and sediment control in the course of development. However, no specific standards for these activities are provided.

The Subdivision Regulations include requirements to provide information on erosion and sedimentation control and storm drainage management as part of a site development plan. The Subdivision Regulations for Darien also include requirements for preservation of existing topography and irreplaceable environmental features.

The Subdivision Regulations require 10 percent of open space.

The Zoning Regulations include limited requirements for set-aside of open space for some higher density residential zones. Preserved open space can be used as a tool to protect sensitive natural resources, including watercourses.

The Zoning Regulations include a provision requiring the preparation of an environmental impact analysis and plans to offset or mitigate anticipated impacts as part of the development process within the Hollow Tree Ridge Road affordable housing zone. The Subdivision Regulations also have a provision requiring the preparation of an environmental impact analysis under certain conditions.

Section 840 of the Zoning Regulations allows the clustering of development on a lot (“conservation subdivision”) in order to protect “significant natural, special, and/or man-made features” including watercourses, in the course of the subdivision or resubdivision of land.

Phase II of the National Pollutant Discharge Elimination System (NPDES) Storm Water Program is soon to be implemented statewide. This will require amendments to local stormwater management practices and positively impact stormwater management on local roads and for Town owned properties.

EXHIBIT 3-4 DESCRIPTION OF SUBREGIONAL WATERSHEDS

Noroton River Subregional Watershed

- *The total Noroton River subregional watershed drains approximately 11 square miles and extends from Holly Pond up into New Canaan; only 25 percent of the watershed is within Darien*
- *The Darien portion of the subregional watershed contains relatively dense residential development (R-1/2, R-1/3, R-1/5, and DMR [designed multifamily residential] zoning along Noroton River extending north from Holly Pond) along the river, small commercial and transportation uses within the I-95 corridor area, and less dense, larger residential lots (R-1 and R-2) upland from the river*

Darien River Subregional Watershed (Stony Brook and Goodwives River)

- *The Darien River subregional watershed drains approximately 6.2 square miles and extends from the Ring's End Bridge at Gorham's Pond up to Waveny Park in New Canaan; approximately 89 percent of this watershed is contained within the Town.*
- *The watersheds of Stony Brook and its tributaries, Cummings Brook and an unnamed stream make up the majority of the Darien River subregional watershed (65 percent). The remainder is the Goodwives River watershed area.*
- *The upper Town portion of the watershed contains large-wooded residential lots (R-2), transitioning to denser residential zoning (R-1/2, 1/3, 1/5), the I-95 and railroad corridor, the commercial business area, downtown and most of Heights Road, and then to R-1 around Gorham's Pond*

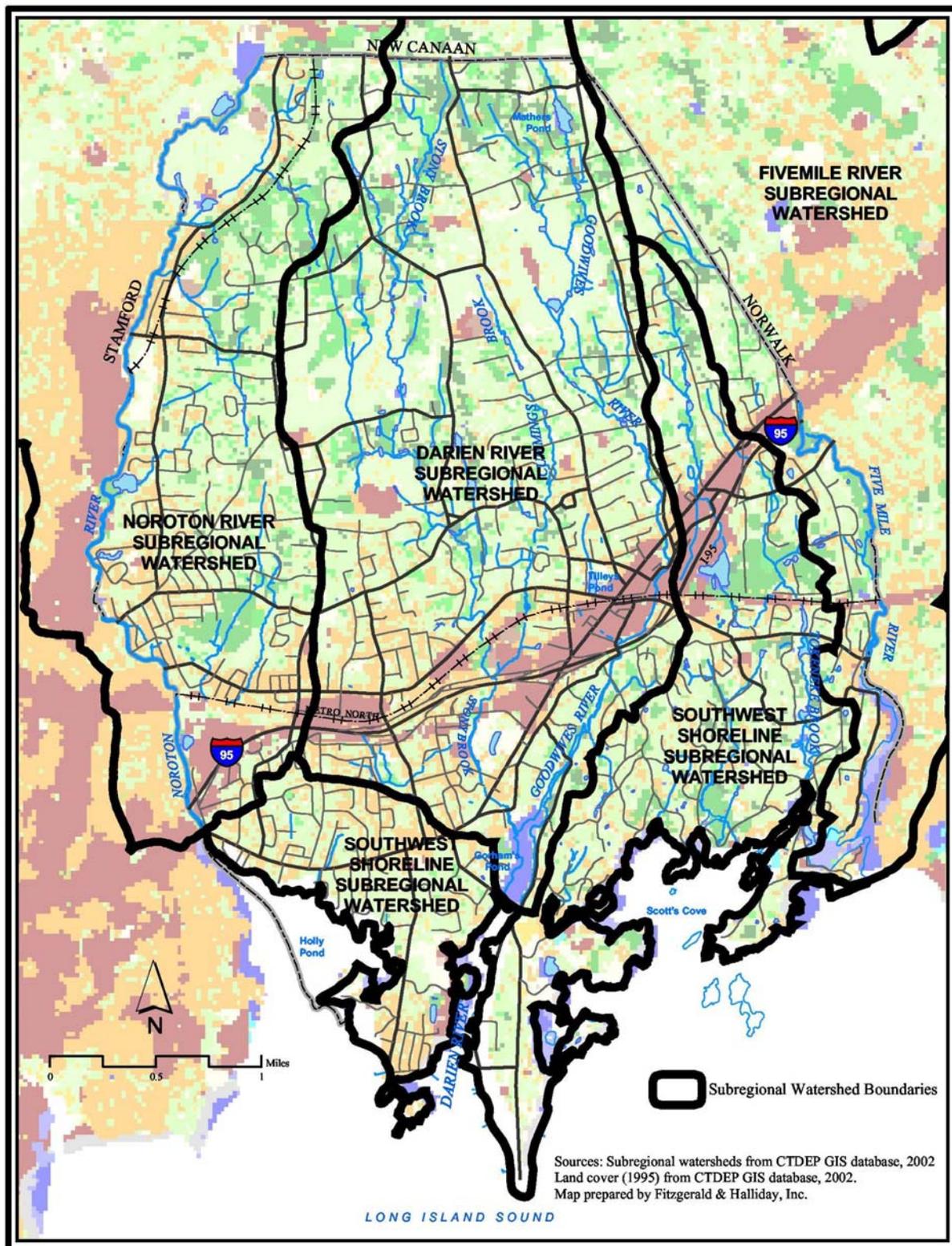
Five Mile River Subregional Watershed

- *The total Five Mile River subregional watershed drains approximately 12 square miles, however, only 7 percent of the watershed, 0.8 square miles, is within Darien*
- *The predominant land use within the Darien portion of the subregional watershed is residential (R-2, R-1, R-1/2, R-1/5), with a small section of the I-95 commercial corridor in Darien*

Southwest Shoreline Subregional Watershed (East and West)

- *The Southwest Shoreline subregional watershed drains approximately 3.6 square miles and all of the watershed is within Darien*
- *The subregional watershed is comprised of two geographical areas, an eastern section and western section*
- *The eastern section drains Tokeneke Brook, unnamed streams, and half of Long Neck peninsula into Scott's Cove; the other half of Long Neck peninsula drains into Darien River*
- *The western section drains into Darien River, Holly Pond, and Cove Harbor*

EXHIBIT 3-5 SUBREGIONAL WATERSHEDS



3. Wetlands

The majority of Darien's inland wetlands are located north of I-95 along major stream corridors. The most extensive wetlands are associated with the Goodwives River, Stony Brook and their tributaries. The broad wetlands along these watercourses are primarily forested wetlands on residential sites and/or properties dedicated to recreation and conservation purposes. Tidal wetlands fringe much of Darien's coastline, providing significant productive habitats, shoreline stabilization, water quality purification, and aesthetic quality.

Most of Darien's land base is built out, so significant acreages are not likely to be developed and/or subdivided. Hence, direct wetland losses are minor on an annual basis. However, due to the shortage of developable land, existing land uses (primarily residential) are intensifying. This is occurring through the enlargement of existing residential structures, replacement of existing modest homes by larger homes, addition of amenities such as porches, tennis courts, pools, and outbuildings, the removal of trees and other natural areas to create larger lawn areas, and the paving over of previously grassed or gravel areas. This trend toward more intense development adversely impacts wetlands in two primary ways: 1) through continual increases in non-point source runoff inevitably caused by the increase in impervious surfaces; and 2) continual reductions in vegetated buffers as the cumulative footprint of development expands. These effects impair both inland and tidal wetlands in the same ways.

While wetlands are often thought of as natural filtration systems for purifying water, their capacity can be easily overwhelmed in developed areas by excessive pollutant loads contained in runoff. Direct stormwater discharges into a wetland, such as from stormwater outfalls, result in erosion and sedimentation that reduces water quality, harms the native community of plants and animals, reduces flood storage capacity and/or cause the alteration of watercourses, and provides a foothold for invasive species. These impacts are the primary sources of risk to the quality and functions of Darien's wetlands, both inland and tidal. Impacts to inland wetlands and watercourses in Darien are regulated to the extent made possible by the Town's Environmental Protection Commission (EPC) through its Inland Wetlands and Watercourses (IWW) Regulations. Designated tidal wetlands are regulated by the State of Connecticut through the Department of Environmental Protection, Office of Long Island Sound Programs, and Darien Planning and Zoning Commission.

Issues & Opportunities

Given the existing land use scenario in Darien, issues for protecting and enhancing Darien's wetlands (both inland and tidal) include:

- Darien has limited undeveloped lands. Remaining land tends to have more wetlands and other features that make development more challenging. As remaining land is developed, the potential for encroachments on wetlands becomes more pervasive.
- As new individual residential lots are developed or redeveloped, wetlands and their buffers may be impacted by removal of native vegetation, landscaping, and accessory recreational use of the property.

- Currently, Darien regulates earth-disturbing activities within 50 feet of an inland wetland, or 100 feet of a named watercourse. This may not be sufficient to adequately protect wetland integrity.
- Potential impacts to vernal pools in the course of development are a concern.

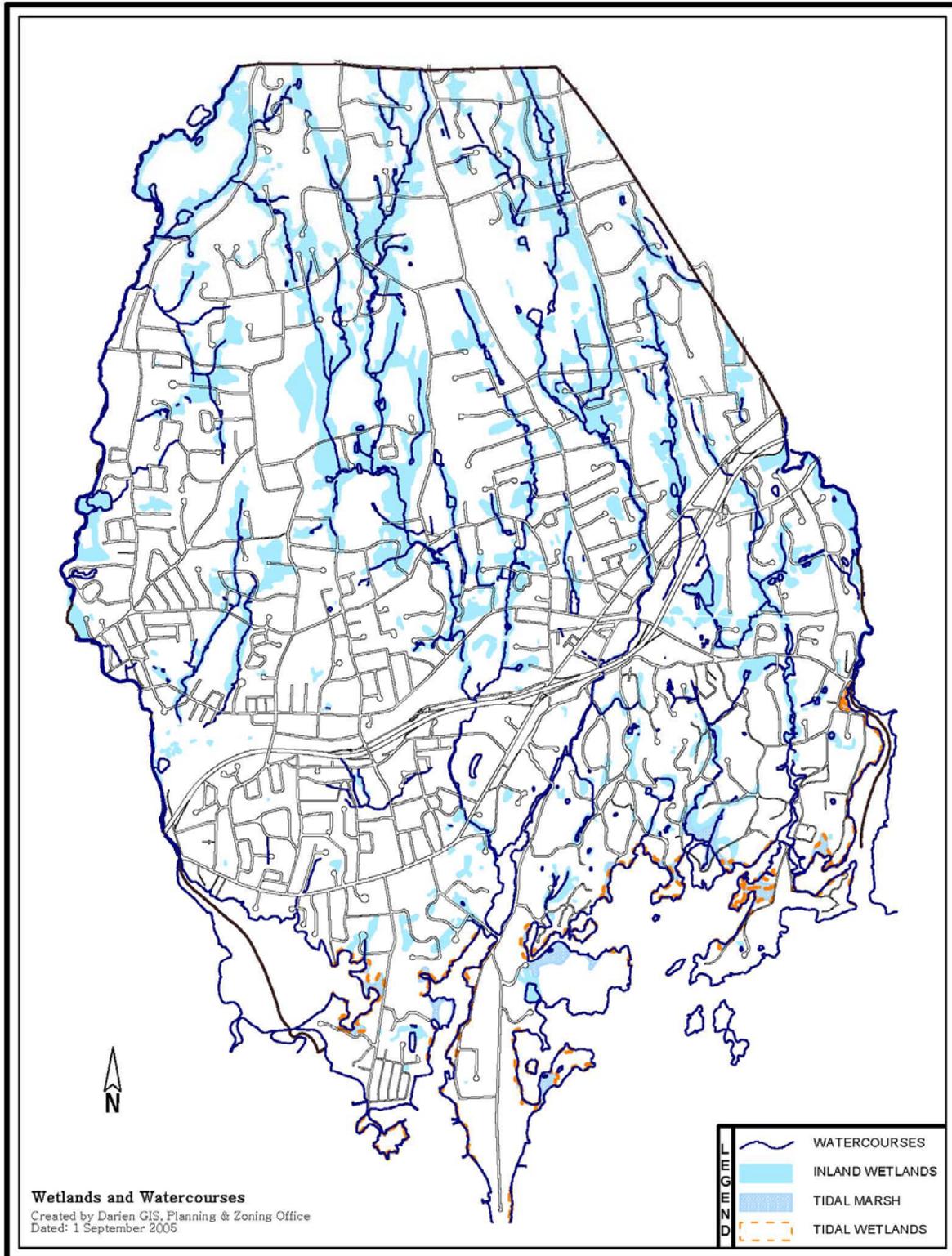
Protection Tools Currently Used in Darien

The IWW Regulations for Darien prohibit earth-disturbing activities (including vegetation removal) within 50 feet of an inland wetland and/or within 100 feet of Holly or Gorham's Pond.

The Zoning Regulations include a section on Land Filling, Excavation, and Earth Removal (Section 850) and Soil Erosion and Sediment Control (Section 870) that limits the area of impact within 50 feet of a wetland and requires applicants to include provisions for managing stormwater runoff and erosion and sedimentation in proposed site development plans.

The zoning, subdivision, and IWW provisions noted in the previous section on watercourses also apply generally to the protection of wetlands.

EXHIBIT 3-6 INLAND WETLANDS AND WATERCOURSES



4. **Floodplains**

The Federal Emergency Management Agency (FEMA) manages the National Flood Insurance Program (NFIP). The main components of the NFIP are flood insurance, floodplain management, and flood hazard mapping. The Town of Darien participates in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage. In exchange, the NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in Town. The Town's participation in the NFIP is voluntary.

Regulated floodplains (A and V Zones) and floodways occur along most of Darien's major rivers and streams, as well as along substantial areas of the coast (see Exhibit3-6). However, flooding can occur adjacent to water bodies even where there are no regulated floodplains. Properties in Darien containing regulated floodplains or water bodies prone to flooding have essentially been subdivided and already contain structures. Most are older lots with structures built prior to flood protection regulations.

The amount and density of impervious surfaces within a local watershed directly affects floodplains within the Town. As described under *Watercourses and Watersheds*, the estimated percent of imperviousness in Darien's watersheds range from 0-9 percent (protected), 10-24 percent (impacted) and greater than 24 percent (degraded). With more runoff from impervious surfaces, flooding becomes more frequent and extensive/extreme.

When a watershed becomes more urbanized, the existing stormwater drainage can become inadequate and unable to handle increases in runoff volume. An example of this problem within Darien is the Heights Road area. During heavy and prolonged rains, the street collects water, essentially becoming a detention basin. The local watershed is small in size (0.5 square miles) and is estimated to be about 40 percent impervious.

The concentration of development north of Heights Road drains to one culvert (which is not under the Town's jurisdiction) located just north of the I-95 Interchange 10 southbound on-ramp and was not designed to handle the cumulative increases in impervious surfaces. Furthermore, some residents south of I-95 along Maple Street and Relihan Road abutting an unnamed tributary of Stony Brook have voiced concern over flooding problems.

Floodways are designated within Town and are associated with sections of Noroton River, Stony Brook, Gorham's Pond, Goodwives River, Tokeneke Brook, and Five Mile River. A floodway is the area of the floodplain that should be reserved (kept free of obstructions) to allow floodwaters to move downstream. The placement of fill or buildings in a floodway may block the flow of water and increase flood heights, which can lead to a greater potential of property damage. Floodway management and prevention of encroachment within the floodway is critical to the Town's overall floodplain management.

The Town regulates designated floodplains (A Zones or special flood hazard areas and floodways) through Zoning Regulations and through Coastal Site Plan review for projects within coastal hazard areas (A and V Zones) within the Coastal Area Management

boundary. New construction and substantial improvements are permitted within these areas provided they meet floodplain standards.

Issues & Opportunities

The primary issues for floodplains in Darien are:

There is an ongoing accumulation of impervious surface area in Darien that impacts stormwater flows. This increase is not monitored or adequately managed through Darien's regulations to prevent adverse impacts from excessive impervious land coverage over time.

The municipal stormwater conveyance system is inadequate to handle stormwater flows in the Heights Road and Lower Stony Brook areas of Darien.

Not all storm drains, catch basins, and outlets are controlled and managed by the Town of Darien, which hampers the ability of the Town to correct problems associated with improperly sized stormwater system components.

Darien is nearly built out and as such the requests for new subdivisions are limited each year. Consequently, the Town must rely heavily on Zoning Regulations (Section 820) for floodplain management. A recent trend has been that the majority of building permits have been for residential alterations, especially where older residences are being sold and replaced with larger residences. This trend eventually leads to increases in impervious surfaces as developed footprints expand.

Darien's floodplain regulations only apply to new construction or substantial improvements. While existing Town regulations define "substantial improvements", there is no time frame associated with those improvements. This can essentially allow a homeowner to apply for a building permit below the substantial improvement threshold, and then subsequently apply for another permit for the remaining improvements, thereby avoiding having to comply with some major floodplain protection standards.

As noted earlier, current Zoning Regulations lack adequate limitations on the creation of new impervious surfaces in Darien. Excess impervious surface area contributes to volume and velocity of surface water runoff, thereby increasing flooding potential. Also, the section of the Zoning Regulations on accessory uses and the definition of an accessory use contained in the regulations do not include parameters with regard to size or placement within areas deemed to be environmentally sensitive.

There is significant and documented flooding of Heights Road caused by increases in impervious surfaces over time within its watershed and the large amount of stormwater being funneled into one storm drainage outlet. This outlet is inadequate but is associated with a private property and therefore not within the Town's authority to upgrade or improve it.

Protection Tools Currently Used in Darien

The Zoning Regulations include a provision allowing the Commission to require conservation easements as part of development. Such easements can be used to create protection between development and floodplains.

Section 820 of the Darien Zoning Regulations is dedicated to the control of land use within high hazard, flood prone areas.

The sections of the Darien Zoning Regulations dealing with conservation subdivisions (Section 840), land filling and excavation (Section 850), and soil erosion and sedimentation control (Section 870) all have provisions to minimize flooding potential and require applications to include provisions for managing stormwater runoff. However, no specific standards for these activities are provided.

The Zoning Regulations do include some provisions limiting area of a lot covered by impervious building surfaces (Building Coverage and Developed Site Area, in some commercial zones).

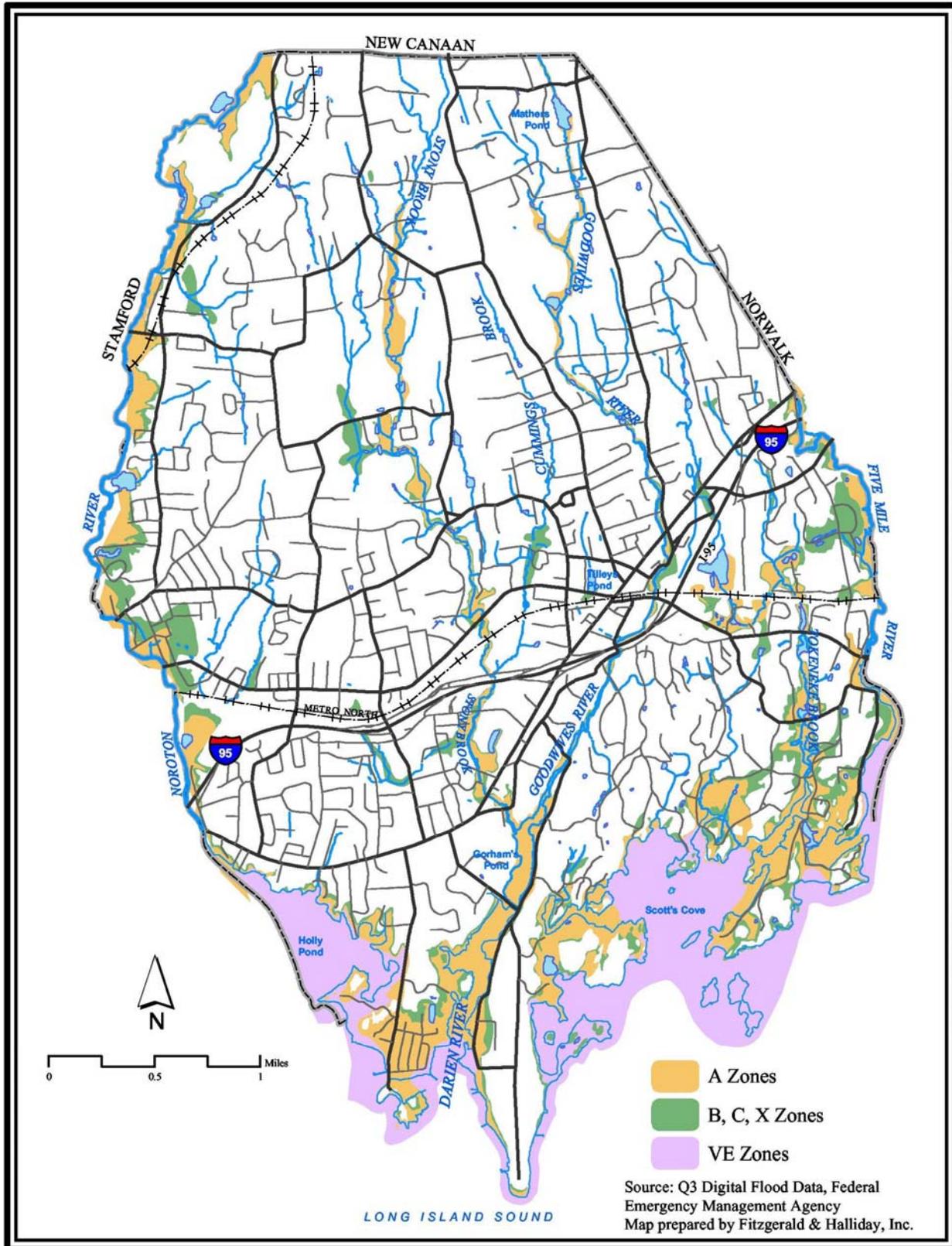
The Zoning Regulations include a provision requiring the preparation of an environmental impact analysis and plans to offset or mitigate anticipated impacts, including potential flooding, as part of the development within the Hollow Tree Ridge Road affordable housing zone.

The Subdivision Regulations also have a provision requiring the preparation of an environmental impact analysis under certain circumstances.

Section 840 of the Zoning Regulations provides for clustering development on a lot in order to protect “significant natural, special, and/or man-made features” including floodplains, in the course of the subdivision or resubdivision of land.

The Subdivision Regulations for Darien include requirements to provide information on erosion and sedimentation control and storm drainage management plans. The Subdivision Regulations for Darien also include requirements for preservation of existing topography and irreplaceable environmental features to the extent possible.

EXHIBIT 3-7 FLOODPLAINS



5. Coastal Resources

Darien's adopted Municipal Coastal Program (Planning and Zoning Commission, 1984) is still relevant in terms of goals, policies, and objectives. While Darien is located within the highly urbanized area of Fairfield County, its coastal resources have not been substantially degraded and still offer generally high quality and diverse recreational and ecological opportunities. Integral with the Town's quality of life, these resources offer public beaches, shellfishing, boating, and scenic views.

Darien's shoreline is a very valuable and fragile natural resource. It extends in an east-west orientation only 2.7 miles, but the actual shoreline is some 16.5 miles in length. Darien has two Town beaches, Pear Tree Point Beach and Weed Beach that are the Town's primary public access points offering both active and passive recreation. Beach erosion has not been a major issue, but the Town adds sand annually. The Town has six designated harbors.

Much of Darien's coast has rocky shorefronts that are not well suited for public access and recreation within the intertidal zone. Public beach areas offer sufficient public access to coastal waters, as does the Rings End Bridge. However, seawalls, revetments, groins, and docks continue to be built along the shoreline that can hinder or limit public access to coastal resources.

There is increasing evidence that tidal wetlands are becoming increasingly degraded. The invasive common reed (*Phragmites communis*), which forms monocultures with low habitat value, is present in many locations. Due to its invasive nature, the possible increase of *Phragmites* in Darien's coastal zone is a concern, like it is all along the Connecticut coast. The risk of *Phragmites* invasion is especially high whenever tidal hydrology is altered or tidal wetlands are disturbed, even minimally such as through increased sedimentation.

Boating occurs throughout the coastal and estuarine waters of Darien. Boat moorings shall be concentrated in the Darien Harbor. It shall be the policy of the Town to increase the boating capacity and safety of the Darien Harbor; maintaining an anchorage control system for other harbors and areas of the Darien shoreline to protect them from overuse and abuse, in order that coastal resources may be best protected. Dredging is needed periodically at the Darien Boat Club, the Noroton Yacht Club, and at individual properties in the Harbor to maintain boating operations. The main channels of the Darien Harbor, and the public boat launching ramp have also been dredged by the Town and by private property and boat owners to maintain safe boating passage. Five Mile River is maintained by the US Army Corps of Engineers.

Views of the shoreline and waters of Long Island Sound are important in the quality of life of Town residents. Scenic views are being gradually diminished as redevelopment of lots in the coastal area continues, larger residences are built with more formal landscapes and the construction of docks, fencing, and tree alterations. Shoreline buffers and habitat, such as heron rookeries are lost or disturbed by such lot clearing development.

Unlike other areas along Connecticut’s coast, Darien has not had problems with septic failures, so on-site wastewater disposal is still an option and does not appear to be a factor in coastal water quality.

All buildings, uses and structures fully or partially within Darien’s designated coastal boundary are subject to the Town’s Coastal Site Plan Review process. A variety of activities beyond 100 feet from the mean high tide line may be exempted from site plan review where no potential adverse effects can be determined. Activities within tidal wetlands are regulated by the State of Connecticut.

Darien’s coastal waters have large areas of soft and hard clam beds and oyster beds. According to the Aquaculture Division of the State Department of Agriculture, shellfishing is “prohibited” within Holly Pond, extending along the coast to Pratt Island Two, the lower portions the Goodwives River, and Five Mile River, north of Butler’s Island. The oyster bed south of Butler’s Island and east of the Fish Islands is classified as “conditionally-approved.” The hard clam and oyster beds east of Nash Island within Darien River are classified as “restricted A3-relay.” The only “approved” shellfish waters are within Darien’s natural shellfish bed Scott’s Cove.

Areas where channels and boat anchorages exist should be maintained by periodic dredging. Otherwise, dredging should be limited in order to preserve the integrity of shoreline wildlife and aquatic habitats.

The prohibited areas are primarily due to runoff polluted by, fecal coliform from septic systems. The conditionally-approved areas are monitored by the State Bureau of Aquaculture. Harvesting is prohibited in these areas during and after rainfall events, as the result of polluted runoff. The Town Health Department authorizes harvesting for personal use, while the State issues licenses for commercial harvesting and for bed leasing. Coastal resources are inherently “downstream” of all other lands and are therefore affected by upstream events, land uses, and activities. While various coastal uses can be controlled through provision of facilities and access points, the long-term quality of some resources is dependent upon control, modification, or enhancement of activities affecting water quality and runoff throughout all of Darien’s associated watersheds. In this regard, long-term maintenance and protection of key values such as water quality and ecological integrity of tidal wetlands will necessarily involve similar issues as watercourse and wetland protection.

Issues & Opportunities

The primary issues for coastal resources in Darien, are:

- *Water Quality Degradation in Long Island Sound*

Land based activities have had both a direct and indirect impact on water quality in Long Island Sound. Impacts to the quality of coastal resources and enjoyment of them by Darien residents are a concern.

- *Invasive Species*

Due to its invasive nature, the spread of *Phragmites* in Darien's coastal area is a concern. The risk of *Phragmites* invasion is especially high wherever tidal wetlands are disturbed.

- *Shoreline Preservation*

Dredging activities along or near the shoreline poses a hazard to preserving the integrity of shoreline wildlife and aquatic habitats.

The long-range objectives of the Town include continuing to improve the capacity and safety of the Darien Harbor for boats; maintaining an anchorage control in other Darien waters in order to protect them from overuse and abuse from temporary mooring activities; and improvement of the regulatory procedures governing construction of individual docks and other structures in order that coastal resources may be best protected.

Protection Tools Currently Used in Darien

In addition to the zoning and subdivision tools previously noted in this chapter that provide some controls on creation of impervious surfaces, erosion and sedimentation, stormwater management, and flooding potential, the Zoning Regulations also include specific provisions (Section 810) for the control of activities within the designated Coastal Boundary in Darien.

Darien has a Harbor Waters Charter. This controls the allowed speed of boat operations and mooring and anchoring gear, protection of channels, prohibition of garbage dumping, law enforcement, and Harbor Master reports.

Darien also has a Boats and Harbors Ordinance that includes Darien Harbors descriptions, operation of boats in beach areas, boat speed limits, mooring tackle and gear, interference with channels, Harbor Master authority in Darien waters.

The Darien Board of Selectmen, working with the advice of the Advisory Commission on Coastal Waters and the Darien Harbor Master, administer the Harbor Waters Charter. The Harbor Master has authority in accordance with State Statutes.

6. Air Quality

The U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants to ensure the protection of human health and public welfare. NAAQS were established for: carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), ozone (O₃), and particulate matter (PM), which now includes PM₁₀ (PM with a diameter of 10 microns or less) and PM_{2.5} (PM with a diameter of 2.5 microns or less). The Clean Air Act of 1970 and subsequent amendments required states to monitor air quality to determine if regions meet the NAAQS. If a region shows violations of any of the NAAQS, that part of the state is classified as nonattainment for that pollutant, and the State must develop an air quality plan, called a State Implementation Plan, to bring that area into compliance.

Issues & Opportunities

Regions or counties throughout the state are designated as either attainment or non-attainment for each criteria pollutant. Fairfield County (and therefore Darien) is in attainment for CO, PM₁₀, NO₂, Pb, and SO₂. However, Fairfield County, with the exception of Shelton, is designated as severe non-attainment for the 1-hour O₃ standard.

Cumulative impacts to air quality can result from collective impacts of traffic volume increases, idling of diesel-powered vehicles such as buses and construction vehicles, long-range pollutant transport, and stationary sources, in addition to continual increases in vehicle emissions. For example, Darien has Interstate 95 and two major truck stops, which both are significant sources of air pollution. Air quality impacts also arise from construction activities that create fugitive dust from demolition of buildings or exposure of soil.

The EPA and the CTDEP regulate air quality standards within the state; therefore, local control over air quality is very limited. However, the Town can embrace the following measures to enhance local air quality:

Ensure compliance with Section 22a-174-18(a)(5) of the Regulations of Connecticut State Agencies, which requires that idling of mobile sources be limited to three minutes. This applies to school buses and town maintenance vehicles.

For intersections that could experience a drop in level of service and therefore more congestion (and increased vehicle emissions -- elevated CO) as a result of new development, the Planning and Zoning Commission can require reasonable traffic mitigation. Mitigation would aim to ensure that level of service is greater than D (congested flow) as estimated by standard traffic engineering methods).

The Planning and Zoning Commission can request a dust control plan for certain projects to minimize fugitive dust.

Request that construction contractors use diesel oxidation converters to reduce particulate matter adjacent to sensitive public areas during construction.