Conservation and Development

Policies Plan for Connecticut

2005 – 2010

Office of Policy and Management

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Introduction and Overview

"The State has a vision of remaining one of the country's most dynamic and attractive areas characterized by a robust economy; strong linkages to regional and global economies; a pristine set of shoreline and rural areas; stimulating urban centers; valued educational institutions; a hot bed for technology, bioscience and other critical industry clusters; and employment opportunities to enable all of its residents to pursue their dreams." - Connecticut Transportation Strategy Board

Connecticut seeks to achieve a balance between its conservation and development policies. The vision statement above represents not only a desired outcome, but also a starting point to the deliberative process of determining what actions are needed to ultimately achieve the vision and to preserve Connecticut's premier quality of life for future generations.

This process is no small task, given the myriad of opinions and perspectives held by a socially and economically diverse population of 3.5 million citizens spread across 169 municipalities. Furthermore, the state's 15 regional planning organizations (RPOs), Native American tribal entities, involved government agencies, and a variety of special interest groups also play critical roles in this process.

Under Connecticut's "home rule" system of government, each municipality has the autonomy to regulate local land use in a manner that is both fiscally and environmentally responsive to its residents' needs and desires. To a certain degree, municipal land use decisions can be influenced by state infrastructure plans and capital investments in transportation facilities, public water supply and sewer lines, sewage treatment plant upgrades, and property acquisitions for open space and other restricted development purposes.

The Conservation and Development Policies Plan for Connecticut 2005-2010 (the Plan) provides the policy and planning framework for administrative and programmatic actions and capital and operational investment decisions of state government. An integral part of the Plan is the Locational Guide Map that graphically distills the conservation and development priorities of the state. The objective of the Plan, developed in accordance with Section 16a-24 through 33 of the Connecticut General Statutes, is to guide a balanced response to the current and future human, economic, and environmental needs of the state.

Regional public hearings are conducted throughout the state prior to the Plan's submittal for legislative approval. Although the Plan strives to achieve a high degree of consistency with municipal and regional plans of conservation and development and local zoning regulations, only state agency actions are required to be consistent with the Plan. Municipalities must consider the Plan and note any inconsistencies when they update their own plans, but they are not required to reconcile any differences.

This lack of absolute consistency is due in part to the different natures of state, regional and municipal plans. For example, municipal and regional plans and local zoning regulations generally reflect existing and future *land uses*, while the Plan serves as a *policies* guide for prioritizing state investments and for coordinating state agency planning. The Plan is not a compilation of existing and future land uses. Instead, it is recognition of the reciprocal role of municipalities and RPOs in ensuring that land use decisions generate the maximum return on state infrastructure investments.

In response to recent proposals to invigorate the Plan and to make it more prescriptive to municipalities and RPOs, this revision is predicated on a trial concept of growth management principles. The growth management principles are to:

- Redevelop and Revitalize Regional Centers and Areas with Existing or Currently Planned Physical Infrastructure

- Expand Housing Opportunities and Design Choices to Accommodate a Variety of Household Types and Needs

- Concentrate Development Around Transportation Nodes and Along Major Transportation Corridors to Support the Viability of Transportation Options

- Conserve and Restore the Natural Environment, Cultural and Historical Resources, and Traditional Rural Lands

- Protect and Ensure the Integrity of Environmental Assets Critical to Public Health and Safety

- Promote Integrated Planning Across all Levels of Government to Address Issues on a Statewide, Regional and Local Basis

These broad-based principles are an important step in furthering the state's efforts to improve interagency coordination and to ensure uniform application across state-sponsored projects. Furthermore, municipalities and RPOs are encouraged to address these growth management principles when they update their own plans of conservation and development. Under this approach, municipalities and RPOs would have the latitude to address the principles from their own perspectives, based upon their unique situations and local interests. Where there is common ground with the Plan and the Locational Guide Map, the potential will exist for state capital investment.

This incentive-based approach is well suited to Connecticut's home rule system, since municipal plans of conservation and development can be publicly debated at the grass roots level and advanced under the purview of local-elected officials who are directly accountable to their residents. As each municipality develops its unique vision of the type of future they intend their infrastructure to support, and local zoning ordinances are consistently enforced, there is a reduced likelihood that haphazard development will occur.

One drawback to home rule's tradition of local control and accountability is the costly inefficiencies to taxpayers, since each municipality must finance and operate similar government services within its delimited town boundaries. As our society has become more mobile and the vast amount of new development

continues to occur outside traditional urban areas, there is a growing awareness among many municipalities of their larger role and responsibility toward the overall economic and environmental health of their region.

Creating an ethic of regional coordination is key to the successful implementation of all the growth management principles. Regional coordination is about pragmatic, rather than political, solutions to the mounting fiscal burdens on Connecticut taxpayers caused in part by the recent devolution of federal government programs to states. This can include voluntary collaboration among public, quasi-public, and private sector entities, as well as non-profit and community-based organizations that helps to address the issues that go beyond town boundaries. Just as we have come to understand that a healthy environment must be viewed in terms of ecosystems, so too, must a healthy state economy be viewed in terms of regional networks.

In this economic environment, the state and its municipalities have a mutual interest in working together to seek out economies of scale wherever practicable to ensure the efficient delivery of services. This Plan recognizes the vital role that RPOs can perform in facilitating inter-municipal cooperation with regard to workforce, transportation, housing, open space, working lands, waste management, and social services issues to meet the regional needs of their member towns. To this end, the Plan seeks to guide future state capital investments in a manner that leverages existing physical assets, revitalizes our urban areas to make them attractive again to our citizens, and provides municipalities with incentives to ensure that their land use policies do not inadvertently raise public costs or degrade natural resources.

Plan Text and Locational Guide Map Application and Implementation

The C&D Plan is comprised of two separate, yet equally important, components – the Plan text and the Locational Guide Map. Both components include policies that guide the planning and decision-making processes of state government relative to: (1) addressing human resource needs and development; (2) balancing economic growth with environmental protection and resource conservation concerns; and (3) coordinating the functional planning activities of state agencies to accomplish long-term effectiveness and economies in the expenditure of public funds.

The policies contained in the Plan text provide the context and direction for state agencies to implement their plans and actions in a manner consistent with the Growth Management Principles. The policies contained in the Locational Guide Map spatially interpret the principles with respect to each area’s potential to fulfill and to balance the conservation and development priorities of the State.

Due to the diverse needs and desires of the State and its citizens, an open and robust planning process among state agencies is essential to the implementation of these conservation and development priorities. It is essential that municipalities and regional planning organizations understand the State's principals and policies and apply them in their own plans and actions.

Specific requirements set forth in Section 16a-31 of the Connecticut General Statutes include the following:

1. State agencies are directed to consider the Plan when they prepare agency plans. In addition, agency prepared plans, when required by state or federal law, are to be submitted to the Office of Policy and Management (OPM) for a review of conformity with the Plan.

2. State agencies are required to be consistent with the Plan when undertaking the following actions:

a) The acquisition of real property when the acquisition costs are in excess of one hundred thousand dollars;

b) The development or improvement of real property when the development costs are in excess of one hundred thousand dollars;

c) The acquisition of public transportation equipment or facilities when the acquisition costs are in excess of one hundred thousand dollars; and

d) The authorization of any state grant for an amount in excess of one hundred thousand dollars for the acquisition, development, or improvement of real property or for the acquisition of public transportation equipment or facilities.

3. The Secretary of OPM submits to the State Bond Commission, prior to the allocation of any bond funds for any of the above actions, an advisory statement commenting on the extent to which such action conforms to the Plan of Conservation and Development.

In accordance with Connecticut Environmental Policy Act (CEPA) regulations, state agencies are required to undertake a comprehensive evaluation of any applicable action that might significantly affect the environment. An important requirement of this evaluation process is for the sponsoring agency to assess the consistency of its proposed action with the C&D Plan. After the sponsoring agency has taken into account all public and agency comments and made its final decision on the proposed action, OPM must make a determination as to whether the evaluation satisfies CEPA requirements.

The Locational Guide Map plays an important role in coordinating relevant state actions by providing a geographical interpretation of the state's conservation and development policies. The Map comprises the best available digital, standardized, statewide data for each policy's definitional criteria. If the criteria defining a particular site changes subsequent to the Plan's adoption, a proposed project should be judged for consistency based on the most current data sources available at the time of the evaluation.

In addition, the reuse or redevelopment of an existing site for economic development, affordable housing, or public-supported initiative may also be eligible for state funding, even if it is not located within a development category on the Map. A full CEPA review may be necessitated when the proposed redevelopment is of a greater intensity than the past use; thereby requiring a thorough analysis of all potential impacts and mitigation measures, as well as consideration of alternative sites within the region.

The Locational Guide Map comprises four development categories and four conservation categories that are prioritized according to their characteristics and suitability for various state actions. The policies associated with these categories reflect the Plan's different applications and impacts relative to an area's character of development, social structure, economic base, natural conditions, and public service facilities. *The Map is not intended to serve as a mirror image of all existing local development or zoning.* When a conservation priority is reflected on the Map in an area where development currently exists, the Plan text must be consulted to help interpret a proposed action's consistency.

The overall Plan strategy is to reinforce and conserve existing urban areas, to promote staged, appropriate, sustainable development, and to preserve areas of significant environmental value. Areas that have valued intrinsic qualities, perform useful natural functions, or have existing or potential value for significant public use need to be protected from degradation or inappropriate development. However, protecting the environment is not simply identifying areas where no growth should occur. In many cases, development is possible that is compatible with the basic environmental or renewable resource values or physical safety problems of the land.

The Locational Guide Map categories are assigned a relative priority value as follows:

Development Area Policies (In order of priority)

1) Regional Centers – Redevelop and revitalize the economic, social, and physical environment of the state's traditional centers of industry and commerce.

2) Neighborhood Conservations Areas – Promote infill development and redevelopment in areas that are at least 80% built up and have existing water, sewer, and transportation infrastructure to support such development.

3) Growth Areas – Support staged urban-scale expansion in areas suitable for long-term economic growth that are currently less than 80% built up, but have existing or planned infrastructure to support future growth in the region.

4) Rural Community Centers – Promote concentration of mixed-use development such as municipal facilities, employment, shopping, and residential uses within a village center setting.

Conservation Area Policies (In order of priority)

1) Existing Preserved Open Space – Support the permanent protection of public and quasi-public land dedicated for open space purposes.

2) Preservation Areas – Protect significant resource, heritage, recreation, and hazard-prone areas by avoiding structural development, except as directly consistent with the preservation value.

3) Conservation Areas – Plan for the long-term management of lands that contribute to the state's need for food, fiber, water and other resources and environmental quality by ensuring that any changes in use are compatible with the identified conservation value.

4) Rural Lands – Protect the rural character of these areas by avoiding development forms and intensities that exceed on-site carrying capacity for water supply and sewage disposal, except where necessary to resolve localized public health concerns.

The following is an attempt to clarify a number of Map issues, so that the state's intended policies are better understood:

> 1) The term "Neighborhood Conservation Area (NCA)" refers to the state's #2 *development* priority after Regional Centers. NCAs can entail a wide variety of development, such as commercial, industrial, and/or urban-scale density residential land uses. The overall intent of this policy is to maintain the overall character and vitality of the area by promoting infill development and maximum use of existing infrastructure.
>
> 2) Aquifer Protection Areas (APA) and Historic Areas appear as crosshatched overlays on the Map, but they are defined and treated as Conservation Areas.

• An APA represents the defined recharge area of a major public water supply well. Such areas are shown as overlays because Department of Environmental Protection (DEP) regulations place certain limits on land uses within the APA. Any development actions in an APA, regardless of public or private financing, must conform to APA standards.

• Historic Areas include Local Historic Districts, as defined in state statute, as well as National Register Historic Districts. Historic Areas are shown on the Map as an overlay because any development in these areas must be in accordance with any guidelines or standards established for the district. The state lacks boundary data for the vast majority of National Register Historic Districts, so these areas do not appear on the Map. This absence does not alter their treatment as a Conservation Area on a project-specific basis.

3) Floodways and coastal wave hazard areas are represented on the map as Preservation Areas, while the remaining 100-year river and coastal floodplains are shown as Conservation Areas. Given the public's continued attraction to rivers and the coastline, many of the state's flood hazard areas experience intensive commercial and industrial development. The Plan does not prohibit the continuation or the modification of these land uses. The Conservation Area designation is a red flag denoting that future actions must be consistent with the flood management objectives for such an area.

4) Public drinking water supply watersheds cover large areas of the state. These lands provide a valuable public health function by protecting reservoirs from polluted runoff and by ensuring a clean and safe drinking water supply. Because these lands are vast in size, there are many instances where development has occurred within the watershed. The state's policy in public drinking water supply watersheds is to discourage the introduction of infrastructure for the purpose of accommodating new development. Exceptions may be allowed in certain instances where development has already occurred, and added pollution controls are required to protect potable waters.

5) Class I utility owned lands are defined and treated as Existing Preserved Open Space. However, since there is no statewide mapping available for Class I lands, they are not reflected on the Map. This absence does not alter their treatment as Existing Preserved Open Space on a project-specific basis.

6) Finally, the entire Existing Preserved Open Space inventory is currently being updated by DEP. The data reflected on the Map will be superseded once this inventory process is complete.

Plan Adoption and Revision

The Office of Policy and Management integrates the Plan into the Office's planning and coordinating functions as closely as possible. The Plan is used as a framework for evaluating plans and proposals submitted to OPM for review through mandated review processes (e.g., Intergovernmental Review System, Municipal Development Program, Environmental Impact Reporting). OPM advises an initiating agency, when appropriate, on how well individual plans or projects relate to the Plan. In addition, regional planning organizations and municipalities are encouraged to use the Plan and, in fact, must note any inconsistencies with the Plan when developing their local Plans of Conservation and Development.

Section 16a-28 of the Connecticut General Statutes sets forth a recurring five-year cycle for the preparation, legislative committee review, and public hearings that precede full General Assembly consideration for adopting a conservation and development plan. OPM is responsible for the preparation of the Plan for the Continuing Committee on State Planning and Development (CCSPD) of the General Assembly and in consultation with state, regional, and local agencies.

In 1971, House Joint Resolution No. 40 called for the development of a state plan of conservation and development. A Plan of Conservation and Development was drafted as executive policy for state government actions affecting land and water resources and was implemented through Executive Order.

In 1976, the General Assembly established a process for direct legislative participation in the preparation and adoption of a conservation and development plan, specified its application, and directed the broadening of its scope. Plans were subsequently developed by OPM and adopted by the General Assembly in 1979, 1983, 1987, 1992, and 1998.

This document represents the fifth revision to the Plan. The Conservation and Development Policies Plan for Connecticut 2004-2009 will continue in force until the next revision cycle is completed in 2009. Finally, Section 16a-32 of the Connecticut General Statutes sets forth the following:

1. In addition to the five-year cycle for Plan update and change, OPM adopted regulations with regard to criteria and procedures for the initiation and approval of interim changes to an adopted Plan.

2. OPM is required to annually report to the Continuing Committee on State Planning and Development (CCSPD) on the progress made toward implementation of the Plan, and the extent to which state actions have been in conformity.

Connecticut at a Crossroads

C*rossroads* is defined as "a place where two or more roads meet; a place where different cultures meet; a crucial point or place." It serves as an appropriate metaphor to summarize the findings from a number of recent reports that focused on various quality of life issues in Connecticut.

Connecticut Regional Institute for the 21st Century

In 1999, the Connecticut Regional Institute for the 21st Century, a coalition of public, private, and institutional leaders, was formed to develop a framework for defining the basic structure, relationships and linkages that drive the pattern and location of economic activities. The resulting publication, *Connecticut Strategic Economic Framework* (the Gallis Report), prepared by Michael Gallis and Associates concluded that metropolitan regions serve as the functional economic units within the emerging global transportation and communications network. Metropolitan regions, in turn, are structured in a pattern of centers and corridors created by the development of freeways, transit systems, international airports, and suburban population and job growth.

The Gallis Report places Connecticut at the center of the "New Atlantic Triangle" – a unique cluster of five metropolitan regions anchored by the New York, Boston and Albany metro regions, and including the Hartford/Springfield and the Southeast corridor metro regions. This multi-state area is characterized by its large, diverse population and its massive concentrations of economic, institutional and cultural resources.

Notwithstanding these attributes, the Gallis Report cautions that inadequate Hudson River crossings and the area's heavy dependency on its congested highway network could impede the flow of commerce between New England and the larger continental grid west of the Hudson River. Gallis cites the emergence of northern New Jersey's ports as the preferred point of connection to the continental grid as a prime example of the dynamic nature of global networks shifting to more efficient routes. Over time, constrained access to global market flows could result in slower growth and a higher cost of living in Connecticut and New England.

In 2003, the Connecticut Regional Institute for the 21st Century published another report, *Economic Vitality and Land Use*, to help business, civic, and government leaders understand the effect of current development patterns and land use decisions on future growth opportunities, urban revitalization efforts, transportation mobility, and other economic and quality of life issues. The report lists several steps for invigorating state, regional, and municipal planning processes, and cites recent efforts in Massachusetts and New Jersey to restructure

state government activities to better coordinate land use and environmental regulatory programs.

Connecticut Transportation Strategy Board

In September 2000, the Governor and legislative leadership convened a Transportation Summit to discuss the critical linkages between transportation, economic development, and land use planning identified in the Gallis Report. An Interim Transportation Strategy Board was subsequently established, and a number of its recommendations were captured in Public Act No. 01-5 of the June (2001) Special Session. This Act created the current Connecticut Transportation Strategy Board (TSB), a 15-member panel of government, business, and private interests, and established five Transportation Investment Areas (TIAs) representing Connecticut's major transportation corridors.

The TIAs, which are somewhat similar to the Gallis concept of metro regions, are required to prepare a biennial corridor plan that assesses their competitive strengths, opportunities and challenges in both a regional and statewide context. With broad input from their member towns, affiliated Regional Planning Organizations (RPOs), the business community and other interested parties, TIAs bring an important local and regional perspective to the statewide transportation planning process.

In January 2003, the TSB published *Transportation: A Strategic Investment*, which incorporated recommendations from the five initial TIA corridor studies and from the five working groups charged with addressing the movement of people, the movement of goods, land use and economic development, funding and finance, and evaluation criteria to measure the effectiveness of proposed projects. This report unveiled a 20-year transportation strategy, a set of 10-year action plans to implement that strategy, and specific recommendations on fiscal and other incentive programs to enhance Connecticut's ability to sustain economic growth and to preserve its premier quality of life.

The TSB strategy is based on the following five elements:

- Leverage existing transportation and other infrastructure assets, especially in urban centers;

- Expand and market the quality and quantity of options to single occupancy automobile trips to mitigate road and transit congestion;

- Expand and coordinate the State's air, rail, road, and water-based infrastructure to expand the quality and quantity of options for the movement of freight;

• Implement a 10-year financing plan with revenues dedicated to funding the capital component of the strategy's strategic actions and tactics; and

• Ensure adequate and reliable financing of the State's ongoing capital and operating costs of the transportation system.

In developing its strategy, the TSB focused primarily on transportation's role as an enabler of economic activity, but it also recognized the implications that transportation has on land use and quality of life issues. For example, increased access to land raises its potential for development, and this development generates additional travel. Once access has been provided, land use patterns begin to change over a period of time and are, for the most part, irreversible. The societal impacts resulting from such changes have historically been treated as a by-product of development because they are fluid and not easy to gauge.

CenterEdge Project

The CenterEdge Project, a broad coalition of religious, environmental, business, civil rights, educational, governmental and civic-minded organizations, is a leading voice in moving public debate forward over economic and social disparities created by long-term patterns of development. It provides a forum to help people from different settings understand their common problems and self-interests concerning access to good schools, jobs, affordable housing, safe streets, and public spaces and parks. CenterEdge claims that how we organize society directly affects human dignity and the capacity of individuals to grow in community.

The basis for the CenterEdge Project's conclusions is the publication entitled, *Connecticut Metropatterns: A Regional Agenda for Community and Prosperity in Connecticut.* A primary theme of this study is the interdependence of Connecticut's cities and towns, and how they can benefit from regional efforts to counter inefficient development patterns and social and economic polarization.

Connecticut Metropatterns finds that the way the state is growing hurts all communities over time – from the most impoverished to the most affluent. The study organizes the state's 169 municipalities into six distinct community classifications based on their fiscal, social and physical characteristics. Despite their different sets of problems – from poverty, crime and poor performing schools, to rapid population growth, traffic congestion and loss of open space – each type of community faces complex choices in balancing the cost of providing quality public education and local services with the desire to preserve or improve their community character.

The study cites the state's heavy reliance on the property tax to finance municipal services and schools as a leading cause of fiscal zoning. Fiscal zoning occurs when land use decisions are based primarily on the amount of net tax revenue that

can be generated from a parcel, instead of based on the overall physical suitability of the land and the long-term needs of the town and region. The resulting competition among municipalities to increase their tax bases often undermines the character of local communities, and can lead to short-sighted land use decisions that foster costly, inefficient development, traffic, and loss of open space.

Two important predictors of cost to a municipality are population change and density of development. For example, municipalities coping with a loss in population and jobs must spread the cost of public services across fewer taxpayers. Conversely, municipalities with rapidly growing populations are able to spread the cost of services across more taxpayers, effectively subsidizing the cost of infrastructure expansions to accommodate new residents and businesses.

Similarly, low-density development increases the per capita cost to extend road and sewer infrastructure to widely dispersed areas, and to provide school transportation and police and fire protection to these areas. Moderate to high-density development, on the other hand, can help limit per capita costs by maximizing the use of existing infrastructure capacity and by having a more concentrated public service area.

Blue Ribbon Commission on Property Tax Burdens and Smart Growth Incentives

The proliferation of fiscal zoning practices is an integral factor behind the creation of the state's *Blue Ribbon Commission on Property Tax Burdens and Smart Growth Incentives* (the Commission), created by Special Act No. 02-13 in June 2002. The Commission comprises a number of chief elected officials, town managers and others appointed by the Governor and Leadership of the General Assembly, the Connecticut Conference of Municipalities (CCM) and the Connecticut Council of Small Towns (COST), as well as representatives of business, labor, and the state. The Commission's report is intended to stir debate over possible changes to the state's tax structure to reduce municipalities' reliance on property taxes, while promoting incentive-based approaches for encouraging municipalities to develop and conserve their land in a manner that serves the long-term needs of the community and the region.

Although "smart growth" can mean different things to different people, the Commission generally defines the term as "a comprehensive planning process that encourages patterns of development that can accommodate and sustain economic growth while at the same time limiting sprawl, reducing transportation congestion, protecting natural resources, preserving the traditional character of communities and ensuring equitable access to affordable housing, jobs and community services."

The Commission suggests that public debate of these issues can be enhanced through improved data sharing and planning tools, such as a coordinated

statewide geographic information system (GIS) database, a statewide build-out analyses, and an evaluation of the public costs associated with alternate patterns of development. This GIS database would comprise the most up-to-date digital information on existing infrastructure and natural resources, and would enable exchanges between state, regional and local decision-makers. The build-out analysis would provide a visual projection of what the state might look like if development patterns were to continue under existing land use regulations. The build-out analysis should also be tested for sensitivity to the state's surface and groundwater resources, transportation systems, and sewer plans to determine how these resources should be managed to accommodate projected development.

Although the reports summarized above were commissioned by largely disparate groups, they tend to share a common theme: Current patterns of development in Connecticut are not sustainable; and cities, suburbs, and rural communities are impacted in different ways that make the provision of municipal services increasingly inefficient and expensive, and contribute to a host of socio-economic and environmental challenges. Moving forward, how we deal with these challenges will have profound impacts on the state in terms of its ability to compete in the national and global economy, and on the quality of life that we seek in our hometowns. Connecticut is, indeed, at a crossroads.

How did we get here?

Connecticut is a land blessed with abundant natural assets, such as its scenic rolling hills, fertile valleys, freshwater streams, and expansive coastline. Over time, its citizens leveraged these natural resources to build the physical infrastructure necessary to support their evolving social and economic needs. It is this human influence that provided Connecticut with its characteristic New England villages, historically vital cities, innovative industries, and rich cultural heritage.

Following the Industrial Revolution, cities provided housing and employment opportunities to the vast majority of factory, retail, and professional workers and their families. As working class families accumulated modest wealth, additional housing opportunities in close-in suburbs became a viable option to many. A hub and spoke system of public transit was created to provide ample mobility between home and city services. This trend toward decentralized development continued into the first half of the 20th century, facilitated by growing automobile ownership and an expanding state highway system.

The post-World War II era ushered in a period of accelerated migration from cities to suburbs, fueled in large part by federal highway construction and suburban housing initiatives. This migration became the engine for a long period of economic and physical expansion. Over time, highway-accessible suburban shopping malls, corporate offices, and industrial parks further lured retail and employment opportunities away from cities.

Today, single-family homes on private lots continue to be the most desired form of residence, and “big box stores” are exceptional economic performers. Low density and strip development exists because the market supports it, and many suburban dwellers enjoy their quality of life. Despite suburban gains in wealth and political clout, Connecticut’s cities still hold major concentrations of economic activity and service centers that support regional populations. Many of their remaining businesses are part of regional “clusters” that compete nationally and internationally.

This ability to compete, however, is undermined to an extent by the national ratings that place some of Connecticut’s largest cities among the poorest in the nation. While many other cities across the country have the ability to annex their wealthier unincorporated suburbs and gain new land for development, Connecticut cities are confined by their relatively small and highly developed political boundaries. Without the benefit of a broader representation by metropolitan area, both the perception and the reality of this geographic stratification by income leave few opportunities for cities to increase their tax bases in the short term.

Where are we going?

The landscape we have created is the framework within which we must work to balance the environment, economy, and community. Over the past decade, the state has seen very little actual new growth occurring relative to population gain and job creation. What appears to be growth in one town is often just another town’s loss in disguise. Essentially, the Land of Steady Habits has developed a bad habit of consuming land at a disproportionately faster pace than the actual rate of new growth.

As a result, open space and farmland are converted to subdivisions and strip commercial developments, water quality is threatened by excessive demand and the loss of natural buffers, ecosystems are fragmented, vehicle travel and congestion increases, and taxpayers effectively subsidize the higher cost of delivering municipal services to dispersed developments. Recognizing that this pattern is not sustainable from an economic, environmental and quality of life standpoint is only the first step in what needs to become a consistent, long-term ethic to slow this trend.

The introduction of growth management principles in this Plan puts in place a framework for improved coordination among state agencies, so that there will be early recognition of cross-agency issues and better planning for the potential consequences of their actions. Although land use trends are not highly responsive to any one particular factor, strategic public investments can leverage and influence subsequent private investment in key areas. Connecticut has pursued the concept of growth management as illustrated by the following recent major initiatives:

• Revitalizing Our Cities

- Bridgeport – New multi-modal transportation center, Harbor Yard entertainment complex, and maritime infrastructure improvements.

- Hartford – The Six Pillars of Progress economic development initiative includes the Adriaen's Landing convention center, hotel, and entertainment district; downtown and neighborhood residential development; the riverfront park system; central business district improvements; a downtown college campus; and the Rentschler Field football stadium in East Hartford.

- New Haven – Phase II of the Ninth Square downtown redevelopment project and the new State Street Train Station.

- New London – Pfizer Headquarters campus development, Fort Trumbull added to state park system, and State Pier rebuilt.

- Stamford – New multi-modal transportation center.

- Waterbury – Downtown college campus, Palace Theater renovation and arts magnet school.

• Industry Cluster Initiative – This statewide market-driven strategy linking the public and private sectors is designed to increase the competitiveness of key industries, including: bioscience, aerospace, software/information technology, metal manufacturing, maritime, plastics, agriculture, insurance and financial services, and tourism.

• Urban Site Remedial Action Program – Former urban brownfield sites have been cleaned up and put back to productive use. Large-scale projects include:

- former New London Mills site (Pfizer);

- former Waterfront Steel Mill in Bridgeport (Derecktor Shipyard); and

- former Scovill/Century Brass factory in Waterbury (Brass Mill Center Regional Shopping Mall).

• Open Space Acquisition – The goal is to preserve 21% of the state's land as open space by the year 2023, through the combined efforts of the state, municipalities, private non-profit organizations, and water utilities. In 2002, the state made the largest such acquisition in its history by

purchasing approximately 15,000 acres of public water supply watershed land in southwestern Connecticut.

• Farmland Preservation – In accordance with Section 22-26cc of the Connecticut General Statutes, a goal of the state is to acquire development rights to 130,000 acres of farmland of which at least 85,000 acres are prime or important cropland soils that can be devoted to the local production of food products.

• Transportation Strategy Board – Created to bring a strategic economic framework to planning and prioritizing investments in the state's transportation systems.

• Higher Education – The UConn 2000 and UConn 21st Century Programs have committed $2.3 billion to the state's flagship institution, and over $860 million has been committed to the Connecticut State University system and the Community Technical College system to modernize and improve the physical infrastructure of their campuses.

As indicated above, Connecticut already has a number of key growth management programs and policies in place that can be enhanced through better coordination, packaging, and marketing. In order to build on these and other state initiatives, however, there is a reciprocal responsibility on the part of municipalities, developers, individuals, and interest groups to be fully engaged in a deliberative civic planning process.

By focusing on its human capital, Connecticut is well positioned to flourish in the growing knowledge-based economy. It is ranked among the top states in the nation for per capita income and educating its children. These factors are key to generating significant purchasing power for consumer products and investment capital for entrepreneurial activities, in addition to producing the highly skilled and educated workforce for which Connecticut is known.

Investments in our higher education system help to provide attractive in-state options for Connecticut families, as well as highly competitive choices for out-of-state students. Given the state's aging demographics, a primary challenge is to not just cultivate this resource, but to provide the type of environment and amenities that entice such students to ultimately become rooted in Connecticut.

Connecticut's urban areas can play a vital supportive role in facilitating affordable housing and entertainment options to attract this highly educated and creative class. Underutilized infrastructure in urban areas represents a significant resource that can be efficiently utilized to develop pedestrian-friendly, mixed use neighborhoods that cater to young professionals, couples, and retirees.

While the potential for urban revitalization is significant, there remain serious issues regarding quality of schools, perceptions of public safety, housing costs, and taxes relative to services. In order to truly be a land of opportunity, we must make every effort to ensure that every person, regardless of income or race, has reasonable access to the same opportunities available to others. The growth management principles addressed in the following chapters lay the foundation for guiding state planning and investments to provide a future in which no citizen of Connecticut is limited in their ability to pursue the American Dream on account of where they live.

Growth Management Principle #1

Redevelop and Revitalize Regional Centers and Areas

with Existing or Currently Planned

Physical Infrastructure

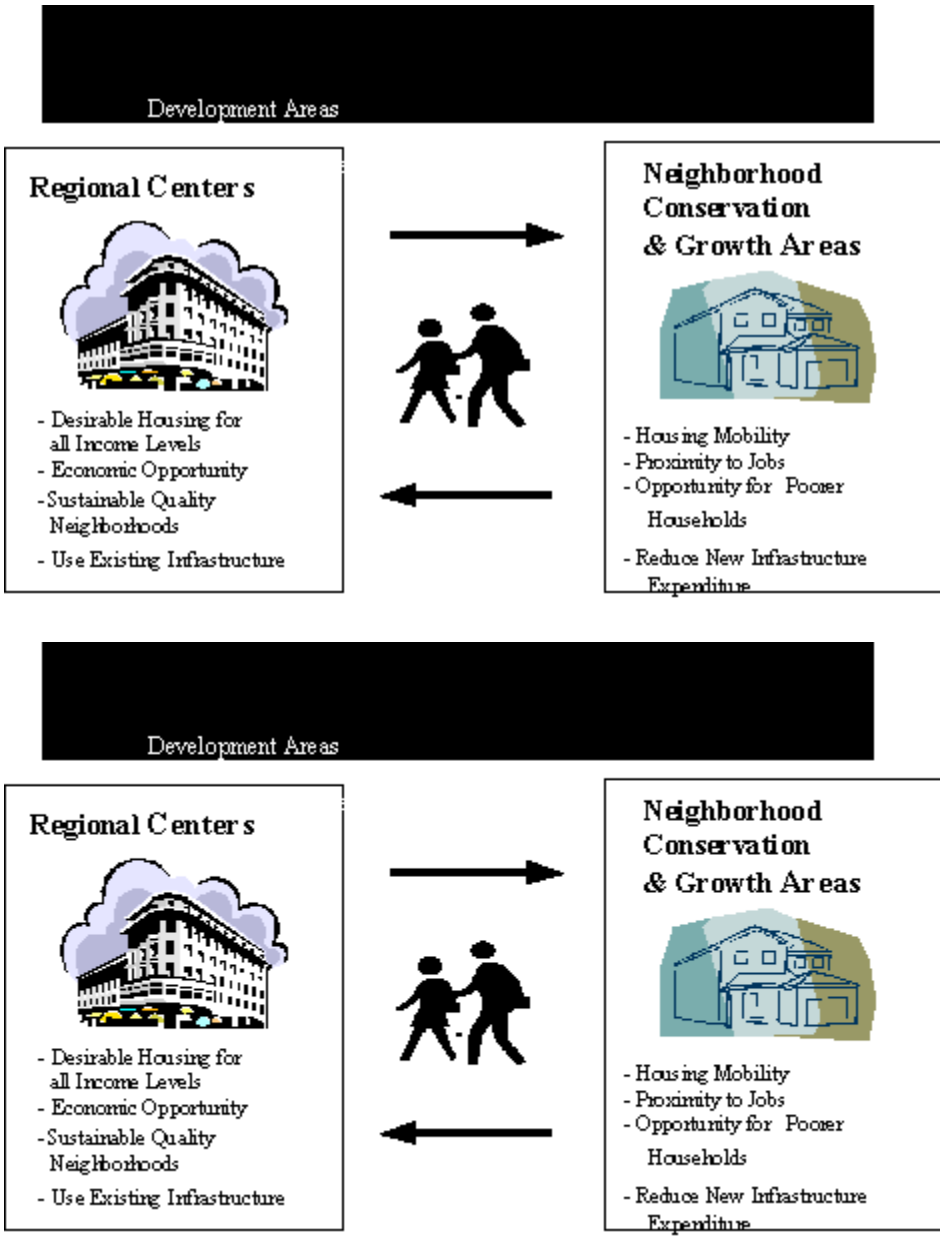
The development trends of the last century have brought a high quality of life to many in Connecticut. Advances in technology, particularly transportation and communications, have increased the availability of previously undisturbed land. Consequently, development patterns have concentrated growth and wealth at the fringe of urban areas. In the last half century, this growth pattern has pushed beyond traditional urban boundaries creating new suburban communities while abandonment and poverty have been concentrated in urban centers. This has required suburban growth areas to create new infrastructure to support outward development, while urban infrastructure is available and maintains excess capacity. An alternative to this outward development pattern is not a reduction of development, but rather a fuller use of already developed places.

The challenge in revitalizing or maintaining development areas is to create an atmosphere that promotes the establishment of desirable, quality urban communities (For the purpose of this Plan, development areas are Regional Centers, Neighborhood Conservation Areas, Growth Areas and Rural Community Centers as defined in the attached Locational Guide Map). This will demand greater civic creativity and a coordinated approach to planning at the state, regional and local levels. To overcome concentrated urban poverty, access to social and economic opportunity must be available to all. Resources need to be directed towards promoting profitable businesses, quality housing choice for all

income groups, economic opportunity, recreational opportunities, public safety, education and transportation options. The competitive advantages of inner cities, including strategic location near major transportation nodes, a large, diverse and available pool of labor, and untapped local markets with substantial purchasing power, must be promoted and more fully utilized.

Sustainable quality communities need economic opportunities that are available to persons of all income and education levels, where jobs are available close to home and people have transportation options. Quality communities need neighborhoods that are stable places, with opportunities for households of all income levels to find apartments, condos or starter homes, for those able, to buy up, and for the elderly to find affordable housing and services. Quality communities need to have recreational opportunities, accessible green spaces, and provide safe, clean environments where children can grow to adulthood with a sense of community and of place. And, quality communities need to be desirable places to live and work that attract and can accommodate diverse populations and businesses.

Revitalization of our development areas cannot take place in a vacuum. State and local policies promoting urban revitalization and neighborhood stabilization must be coordinated with regional planning efforts. Addressing the concentration of low-income households and low rates of homeownership in urban areas must be done on a regional basis. Where there is a lack of diversity, there is a need to create incentives for new development that incorporates low and moderate income housing reflecting the percentage of all such households in the region. Housing mobility could give poorer households the ability to settle in middle-class, suburban areas resulting in closer proximity to employment and enhanced educational opportunities. Likewise, urban development policy must be focused on creating housing opportunities, and communities that are also desirable to middle and higher income populations in order to foster investment. A coordinated approach, or regional planning strategy, must be adopted to revitalize our urban centers and develop communities that are demographically diverse, economically vibrant and sustainable.



A. Nature of Development

Improving the quality and fabric of urban centers is key in beginning to reverse the development patterns that produce sprawl. It is only natural that households that can afford mobility will choose to live in communities that are attractive, safe, have good school systems, and have commercial amenities close to home. If urban centers and their associated neighborhoods are unable to provide these attributes, growth will continue to take place in an outward direction at our urban boundaries. The alternative is not mandated stagnation and a reduction of development, but a more planned and fuller use of already developed areas. Creating quality urban environments and offering stable livable neighborhoods

will help attract people and development inward to built up areas in existing communities, where infrastructure is already in place (already built environment).

- **Policy:** Focus urban design to help old and new neighborhoods to function by mixing housing types and land uses, creating meaningful central places, and introducing new forms of open space. These communities should be distinguished by attractive design, and a diversity of people, places, open space, recreational opportunities, transportation options and economic opportunity.

    - Plan for compact, transit accessible, pedestrian-oriented mixed-use development patterns and land reuse, and promoting such patterns and reuse.

    - Provide a broad range of choice among housing types, designs and costs to meet diverse individual family needs for each community in locations convenient to other activities and existing facilities.

    - Provide attractive neighborhoods with mixed-use development adjacent to transit stops to create a sense of place and build the critical population mass to support the transit system.

    - Focus land use patterns inward, utilizing existing infrastructure to build on the community's assets.

    - Encourage development on a scale that promotes street level activity to maximize sense of neighborhood and encourage pedestrian activity.

    - Consider expanding local authority to regulate aesthetics such as orientation of building entrances, amount of window space, and facade treatments.

    - Planning for urban neighborhoods must incorporate clearly distinguishable boundaries such as common streetscape, similarity of architecture, landmark structures or landmark public spaces and appropriate signage to create a sense of cohesion.

    - Promote infill housing and address land use regulations to insure infill development is at the proper scale and density to maintain or improve the character of the neighborhood.

    - Transportation planning must make downtown areas accessible and create intra-neighborhood accessibility.

- Link affordable housing land use planning objectives with transportation systems planning.

- Integrate downtown and main street areas with surrounding neighborhoods.

- Community groups and governmental leaders must be engaged in order to help create, or in some cases, re-create a sense of community.

- Investigate and develop new design practices and principles that promote sustainable compact urban design and development.

- Utilize greenways to link together residential and recreation areas, schools and community centers, protect existing trail and greenway corridors and encourage new linkages as development occurs.

B. Infrastructure

Connecticut's existing infrastructure systems should be viewed as the building block for continued development in the state. State, regional and local policy should promote the maintenance and improvement of existing infrastructure systems and development in the areas where such infrastructure already exists. Infrastructure support in urban centers, transportation corridors and growth areas is necessary to attract and support investment in those areas and to reverse development patterns resulting in sprawl. Promoting development in areas with existing infrastructure saves taxpayer dollars and makes both public and private investment more cost effective.

The state, municipalities and private sector must focus on creating a physical environment in urban areas that enables development to take place as well as providing the necessary support to maintain stable first ring suburban neighborhoods. The state must target funding for water, sewer, road improvement, housing and economic development and to improve or maintain other existing infrastructure where appropriate and withhold such support in those areas where it is not appropriate. The first step in realizing the vision of living urban communities that sustain human and financial capital is to ensure that the existing infrastructure can support redevelopment. Areas that have been abandoned, where buildings and infrastructure have deteriorated, need to be targeted and support needs to be extended to communities that are experiencing the fiscal strain of maintaining older infrastructure systems. Subsequent redevelopment and private infrastructure improvement in these areas will serve to create the fiscal climate to sustain growth in these communities.

- **Policy:** Support existing communities and neighborhoods by targeting state resources to support infrastructure improvement and development in areas where the infrastructure is already in place.

    - Encourage fuller use of already developed places with existing infrastructure, particularly deteriorated areas where site abandonment or neglect are responsible for lack of investment, job loss and neighborhood flight.

    - Support maintenance or improvements to infrastructure systems that are experiencing deterioration in first ring suburban neighborhoods and mature suburbs.

    - Encourage innovative programs that assist homeowners in urban centers, and mature neighborhoods to maintain the quality of aging housing stock.

    - Balance the full environmental, social, and economic costs and benefits of new development, including infrastructure costs such as transportation, sewers and wastewater treatment, water supply, stormwater quality and quantity control, schools, recreation and open space and project benefits such as job creation, brownfield redevelopment and impact on local tax base.

    - Focus on improvement of existing infrastructure to support redevelopment and infill, and discourage intensive development in rural areas not already supported by local infrastructure, or where development is not consistent with state, regional and local land use policy.

    - Protect stable neighborhoods and extend their useful life through continuous upgrading.

    - Support communities to effectively develop long term growth strategies which will promote meeting economic and housing needs within a planned infrastructure framework.

Energy:

The State of Connecticut imports most of its current energy supply, including oil, coal, natural gas and uranium. In addition, the state continues to be particularly dependent on oil, which is generally imported from foreign countries. These markets are now commodity driven, and this creates a significant continuing risk of economic disruption from sudden cost escalation or supply interruption, conditions over which we have little or no control.

Energy supply and pricing have a substantial influence on economic growth within the State of Connecticut, particularly in the industrial sector. Energy prices in New England are much higher than prices in most of the United States and represent a competitive disadvantage to Connecticut businesses and an economic burden to Connecticut families. The introduction of competition in many parts of the electric and natural gas industries in Connecticut and other Northeastern states has been motivated by the need to try to reduce energy costs as much as possible.

The ability to redevelop Connecticut's Regional Centers requires that existing infrastructure be maintained and updated to support compact urban development. This holds true and is particularly relevant regarding electric capacity and delivery systems. While concentrated development in Connecticut's Regional Centers will require appropriate energy capacity and distribution infrastructure, this type of compact growth can help reduce the need for multiple delivery systems across dispersed areas. This becomes increasingly more important as issues relating to the state's aging power grid and increasing energy demands are addressed. The development and utilization of distributed electric generation facilities, small scale generation capability that is not "piped" in from a remote location, should be contemplated in addressing load management issues in areas of concentrated development. To maximize the efficient use of energy infrastructure, compact, higher density development should be promoted in areas served by distributed generation. Distributed generation can be helpful in areas subject to locational marginal pricing by reducing congestion charges.

In addition, Connecticut will need to continue to bolster its efforts towards conservation of energy. Conservation has the ability to not only help reduce energy costs but also create other economic and environmental opportunities for the state-notably industries dedicated to the development of high-efficiency products, renewable technologies and perhaps most importantly, fuel cells. Every dollar that Connecticut businesses and families don't have to spend on energy can be used for other purposes and every molecule of fossil fuel that is not combusted causes no pollution.

- **Policy:** Secure a sustainable supply of energy at the best possible cost and promote its efficient use.

    - Expedite the review and site approval of needed and environmentally acceptable energy generation and transportation facilities, consistent with Public Act 03-140. Siting decisions should give preference to existing sites that have adequate land and the infrastructure necessary to support the development and operation of new or modified facilities. Where existing sites are located within or adjacent to areas of environmental concern, minimize impacts to the environment.

- Explore creating a mechanism to proactively identify future energy related needs and problems and then solicit solutions to the identified need or problem. Proposed solutions could include transmission, generation, conservation, load management or a combination of strategies. Proposed solutions would be evaluated with regard to environmental and social impacts, costs, reliability and security.

- Seek to diversify the state's energy supply mix where practicable with energy resources least vulnerable to interruption, depletion, or security issues.

- Use renewable energy resources, such as solar and photovoltaic systems, hydro, biomass, and wind energy, to the maximum practicable extent.

- Encourage competition among energy sources and generators consistent with the need for safe, economic and reliable energy supplies.

- Decisions concerning electric power generation should consider means to promote conservation, load management, fuel diversity, and the quality of the environment.

- Identify efficiency opportunities in each sector and cost effective improvements. Educate consumers to recognize the life cycle cost saving of energy efficient major purchases.

- Capitalize on opportunities to develop and deploy innovative energy technologies.

    • Maintain a consortium of government, commercial, industrial, educational and utility organizations to accelerate the commercialization of advanced technologies.

    • Identify and support energy related research currently taking place.

    • Assist firms in locating and applying for federal financing for energy research, development, and demonstration projects.

    • Remove state regulatory barriers to the introduction of new energy technologies; e.g. fuel cells offer clean, diversified, and efficient sources of energy and should be

encouraged with streamlined permitting and financial assistance.

• Provide host sites at state facilities for demonstrations of new technologies and encourage siting at commercial facilities through partnering efforts with industries that might utilize the technology.

C. Revitalization and Reuse

Revitalization and reuse of the state's regional centers and neighborhoods is key to changing existing development patterns that promote sprawl. Maintaining existing green spaces and the character of the state must not rely solely on preservation efforts, but by making development in the urban core more attractive than at the urban boundary. This will create a development pattern that promotes the revitalization of our regional centers and neighborhoods, while preserving open spaces.

Efforts to revitalize the state's regional centers and neighborhoods must take advantage of the existing assets in these areas as well as create new opportunities. This includes utilizing existing infrastructure as discussed above, and creating other incentives to make urban development more attractive. Issues pertaining to zoning, building code and regulatory review processes must be addressed at the proper state, local and regional level to help streamline urban revitalization efforts while insuring that appropriate development, reuse and revitalization occurs.

➢ **Policy:** Revitalize the state's regional centers and neighborhoods by investing wisely and sufficiently in improvements to their human resources and infrastructure systems to attract private investment. Promote reutilization of older and vacant buildings for mixed-income housing, mixed-use development, commercial and industrial development, as well as infill development on available urban property.

o Create incentive-based priming of the urban housing market through strategically targeted housing development to create additional investment opportunities in urban housing markets.

o Create incentive-based priming of urban commercial and mixed-use real estate market with targeted commercial projects in order to create possibilities for private developers.

o Pursuant to Section 8 of Public Act 03-184 continue the ongoing efforts of the Office of the State Building Inspector and the Codes and Standards Committee to establish a building sub-code that applies specifically to building rehabilitation rather than new construction.

- Review zoning requirements at the local level for modifications to allow for density bonuses for mixed income housing rehabilitation projects.

- Consider pre-approved development areas to promote certain uses and streamline regulatory approval process.

- Support local communities that develop strategic plans for neighborhood revitalization.

- Pursue opportunities to link revitalized areas, particularly in river corridors, to trail and greenway projects.

Brownfield Redevelopment:

Because of Connecticut's historically industrial dependent economy, and the number of brownfields sites existing in the state's development areas, brownfields redevelopment is a key element in urban revitalization efforts. Brownfields are properties that have real or perceived environmental contamination, which adds additional risk to redevelopment. They are often underutilized or abandoned, and due to the uncertain cost, additional liability and the uncertain timeframe to complete remediation, these properties are more difficult to develop. In addition, obsolete structures, inadequate parking and loading, insufficient land area or poor location often hinder development of these properties.

However, there are several benefits to redeveloping brownfields in urban areas. These include public health and safety, urban economic development, increased municipal tax revenue and a more complete use of already built areas that relieve the pattern and pressure of development at the developed fringe. To address these issues and stimulate the redevelopment of brownfields sites, Connecticut has implemented a number of incentive programs to assist in the assessment, remediation and development of brownfields. Connecticut has been a leader in revitalizing brownfield properties, and has been successful in recycling contaminated properties beck to productive use. The state has been successful in creating the public private partnerships needed to be effective in addressing brownfield redevelopment. Programs administered by the State Department of Economic and Community Development (DECD), the Department of Environmental Protection (DEP) as well as the Connecticut Brownfields Redevelopment Authority (CBRA) offer tax incentives, up front grants, tax incremental financing, low-interest loans, direct financial assistance and technical assistance. In addition, CBRA maintains a partial inventory of Connecticut brownfields. These efforts, in conjunction, have begun to break down both real and perceived barriers to the remediation and development of brownfields sites. State, regional and local policy and planning must continue to focus resources on and address the need for brownfields redevelopment as part of a larger strategy to revitalize areas with established infrastructure and create quality communities.

One important lesson learned by the State of Connecticut, through its efforts to redevelop brownfields properties, is that loan funding to projects generally is not effective to address this problem. Brownfield properties are competing with undeveloped land. The costs to test and remediate a brownfield site represent a significant premium that an undeveloped parcel does not have. This cost and possible uncertainty in timing to bring a site to usable condition makes brownfield sites uncompetitive with raw land. To improve the competitiveness of brownfield sites, the environmental investigation/remediation costs should be non-loan funds that do not render the bottom line of developer's pro forma to be economically unfeasible. Tax Increment Financing (TIF) or the repayment concept used by USRAP (repayment sought from responsible parties) is an effective and proven means of remediating sites using non-grant or grant-like programs.

The use of tax credits to foster economic development activities has become an important tool for state and local governments. Tax credits can also be employed to revitalize brownfields. Tax credit programs provide the developer with credits for state corporate taxes. These credits can be sold as a commodity by the developer to raise capital for development. Connecticut has recently implemented the Industrial Site Investment Tax Credit Program, which provides tax credits and the potential for local property tax abatements.

- **Policy:** Promote, encourage and market brownfields remediation and redevelopment in development areas as designated in the State Plan of Conservation and Development.

    - As permitted by fiscal ability, the state should fund, to optimal levels, the Urban Sites Remedial Action Program (USRAP).

    - Support DEP plans to develop a statewide comprehensive inventory of brownfields that will build on information already included in the CBRA inventory and should include additional information such as the cost of site assessments, site characteristics and remediation costs.

    - Encourage municipalities to submit all brownfields sites within their town to CBRA for posting on the brownfields inventory.

    - The state should consider remediating, and marketing, certain targeted urban sites to encourage private investment, and encourage municipalities to use the Municipal Development Program (MDP) and USRAP to prepare brownfield properties for reuse.

    - Study the potential effectiveness of the existing state brownfield development programs and amend as necessary to improve the effectiveness of these programs.

- Undertake outreach activities to educate the development community about the existing brownfields programs

- Study and evaluate existing regulatory requirements for the sale of small abandoned urban brownfields and consider alternative approaches to promote reuse of these properties as infill development.

- The state should focus resources on marketing brownfields sites by maintaining a brownfields program website that combines brownfields information available on the DECD, DEP and CBRA websites.

- The state should actively promote programs that offer technical assistance for entities looking to secure environmental insurance for brownfields remediation.

- Market availability of state subsidies for environmental liability policy premiums under the DECD manufacturing assistance program.

- Study brownfield liability, its effects on brownfield development, and develop strategies and programs to address pertinent concerns.

- The state should continue to support funding regional entities to administer loan programs for site investigation and remediation in support of industry and housing.

- Consider the greenway potential of a brownfield site, particularly in urban areas and along waterways.

Historic Rehabilitation:

Historic rehabilitation programs can give residents of older neighborhoods incentives to stay and invest in their communities. As such, older homes and structures that have been designated on the State and/or National Register of Historic Places can be an asset in helping to create neighborhood investment. In addition, historic landmarks can help define neighborhoods and create a sense of place and permanency. This is important in the state's already developed areas, particularly regional centers and neighborhoods in inner ring suburbs. These areas have older housing and building stock that are more likely to qualify for available assistance. However, when deteriorated, and investment is not available for rehabilitation, older and or historic structures can have the opposite affect, becoming a neighborhood detraction, and an advertisement for decay. Public sentiment to save these structures and the historic character of the neighborhood

must be balanced by analyzing the economic feasibility of rehabilitation, the potential for mothballing the structure until rehabilitation funding can be secured, the impact demolition may have on the neighborhood, particularly if no alternative development is planned in its place, and the opportunity cost of losing a cultural resource.

Connecticut established the Historic Homes Rehabilitation Tax Credit program in 1999 to encourage new homeownership and to assist existing homeowners in maintaining or renovating their historic properties. In addition, the state has the Connecticut Historic Restoration Fund, a grant program focused on funding municipal and/or non-profit owned projects. Listing on the State or National Register of Historic Places is required in order to qualify for either of these programs, which are administered through the State Commission on Arts, Tourism, Culture, History and Film. While the provision allowing eligibility for properties included on the State Register is beneficial because it is a more expeditious application process than the National Register (which can take up to a year), the application process for both does require a certain level of knowledge regarding the structure's history and architectural significance. To maximize utilization of these programs, agencies with technical expertise need to provide assistance to interested individuals and organizations. In addition, under the Historic Homes Rehabilitation Tax Credit program assistance should be available for individuals and organizations that are unable to utilize the tax credit and must take the additional step of selling the tax credit for corporate use in order to realize the program benefit.

In addition to the programs administered through the Commission on Arts, Tourism, Culture, History and Film, programs offered by The Connecticut Housing Finance Authority (CHFA) such as the Urban Rehabilitation Homeownership Program (A low interest loan program targeting urban municipalities and certain census track neighborhoods) can assist prospective homebuyers in purchasing and renovating homes in need of repair, and should be developed and encouraged.

- **Policy:** Seek to increase rehabilitation efforts for historic structures and older homes in development areas.

    - As permitted by fiscal ability, re-fund the Urban Rehabilitation Homeownership Program to meet demand for this program.

    - Continue to encourage municipalities to develop historic inventory surveys to list homes that are on the State and National Register of Historic Places, and to identify older neighborhoods with buildings more than fifty years old that retain architectural integrity and illustrate a period in town history.

- The state and municipalities should promote outreach efforts and provide technical assistance for homeowners interested in applying for state or national historic designation and the Historic Homes Rehabilitative Tax Credit program.

- Continue and promote outreach and education efforts, as currently performed by the Office of the State Building Inspector, for property owners regarding Section 29-259 of the Connecticut General Statutes, and Chapter 34 of the Connecticut State Building Code, allowing for certain code waivers for the rehabilitation of historic structures.

- Explore and develop options and strategies to enhance the use of tax credits by homeowners for rehabilitation of aging housing stock.

Main Street Development:

Many towns and cities in Connecticut have traditional town centers that are in varying states of economic health. Some are popular, attract investment and continue to be centers for economic and community life. Other town centers have difficulty attracting investment are plagued with vacant storefronts and are in a state of disrepair. Revitalization of these main street areas is important not only because they are usually the historical, cultural, civic and geographical center of the community, but because they are also an alternative to the forces that fuel low-density development at the fringe of growth areas. A revitalized main street can accommodate compact, mixed-use, pedestrian oriented development. Higher density development with a mix of commercial and residential uses can create a variety of housing and transit opportunities. Revitalization strategy must take advantage of existing main street assets and build on historic architecture, a traditional town center sense of place, pedestrian friendly safe walking environment and the opportunity for unique business development in order to provide an alternative to “big-box” and mall shopping.

- **Policy:** Focus resources to promote and encourage the revitalization and reuse of town center main streets in rural community centers, regional centers and older suburban towns.

  - Municipalities should review and enact zoning regulations that are conducive to development of the town center environment.

  - Municipalities need to identify and build on a market niche for the main street area.

  - Municipalities should engage local civic groups, the local business community and local colleges, universities and hospitals

when assessing, planning for and marketing the future of main street areas.

- Identify and promote cultural and historical attractions.

- Promote economic development in the context of historic preservation.

- The state should continue to fund the Connecticut Main Street Center through the Department of Economic and Community Development.

- The state should encourage the use of funds from quasi-public and private agencies to encourage business startups in these areas.

- Encourage the linkage of main streets to trail and greenway development wherever possible.

D. Economic Development

Attracting and maintaining suitable economic development is a critical aspect in the creation of revitalized sustainable communities in Connecticut. The competitive advantages of Connecticut's urban areas must be promoted in order to achieve development patterns that focus investment in areas with established infrastructure and away from expansion at the urban fringe.

Planning for economic growth needs to be comprehensive and incorporate not only business development, but housing, transportation, recreation and public safety in order to create desirable, attractive, urban communities that will sustain and grow economic opportunity. Public resources need to be targeted in an efficient and effective manner to prime urban areas for sustainable private development. The state, regional and municipal authorities, must be creative in utilizing scarce resources to maximize private investment in urban economic development. The state should continue to encourage vigorous economic development in the state's urban centers, however these activities must be tempered by the reality that market forces have an impact on the selection of site locations for businesses.

The primary goal of economic development policy must be to build stronger and better communities through sustained economic growth. Connecticut has adopted a comprehensive approach to economic development, which utilizes both short-term and long-term strategies and addresses the primary issues of job creation/retention and economic expansion. Since there is no single solution or method to achieving sustainable growth and economic prosperity, the state uses this approach to maximize the holistic and synergistic effect these efforts have on one another.

Connecticut’s Industry Cluster Initiative is the state’s long-term economic development and competitiveness strategy. This strategy is based on the economic premise that clusters of industries, not individual companies, will drive Connecticut's economy and that the expansion of quality jobs and wealth will only occur where large number of companies can successfully compete in the global marketplace. The ultimate goal of this strategy is to increase the competitiveness of Connecticut's businesses, to identify and nurture industry clusters, and for the businesses involved in these clusters to make a high level of commitment to help strengthen the "economic foundations" and environment in which they compete.

This initiative represents a decision to strategically invest a portion of the state’s economic development resources in certain industry clusters. This approach compliments the need to invest in the long-term growth and sustainability of the state’s economy with the immediate case-by-case business needs that are met through the utilization of the agency’s other economic development tools and initiatives.

An outgrowth of the Governor’s Council on Economic Competitiveness and Technology, administered by the Department of Economic and Community Development, is the Connecticut Inner City Business Strategy Initiative, which focuses on urban revitalization through business development and increasing the income, wealth and job opportunities of inner city residents. It incorporates the thinking of the Initiative for a Competitive Inner City (ICIC), a national not-for-profit organization, and replaces the traditional focus on urban deficiencies with a more constructive focus on market opportunities, promoting Connecticut’s cities and their competitive advantages. These advantages include, strategic location, underserved local demand, underutilized workforce, and access to regional business clusters. The State and Connecticut’s cities should continue to build on the strategies through the promotion of these advantages, and by creating incentives to bolster the economic viability of development, and a more business friendly urban environment as well as-focus on strengthening linkages between the inner city and regional economies.

Forming urban business clusters unites leaders in the public and private sectors and serves to market Connecticut’s urban centers to ensure these areas become an attractive draw for leading businesses. Through collaborative efforts in workforce development, joint purchasing, information sharing, technology consulting and other areas, members of a cluster network can significantly improve operations and develop and sustain a competitive edge. Clusters serve to promote and stabilize the business base in cities and also create an opportunity for inter-city cluster collaboration that can strengthen regional business and promote sustainable economic development across the state.

Connecticut has established a number of active business clusters including: aerospace, agriculture, bioscience, insurance/finance services, maritime, metal

manufacturing, plastics, tourism and software information technology. Formation of these clusters represents a cooperative approach to business development that includes business, civic and government leaders. By implementing a business cluster strategy, a city can build on its existing business base. This is often its strongest asset. Public policy, on the state, regional and local level, should continue to support the growth of urban business clusters as primary engines for sustained economic growth.

In addition to the formation of business clusters, economic development incentives that target investment and business development to urban areas, such as the state's Enterprise Zone program, the Economic And Manufacturers Assistance Act program and the Urban And Industrial Sites Reinvestment Tax Credit program, and brownfields development programs, are vital to the redevelopment of the state's urban centers. Connecticut was the first state in the nation to utilize enterprise zones, and continues to encourage the re-use of the state's existing industrial infrastructure through its targeted development programs. Both state and local policy focus efforts on reutilizing and promoting development of selected places already serviced by infrastructure by offering property and corporate tax incentives in targeted investment communities and along certain transportation corridors.

Utilization of these types of programs serves to attract economic development to designated areas, enhance urban revitalization, provide businesses with strategic locations that utilize existing transportation infrastructure, enhance local and state tax revenue, and create an alternative to development at the urban fringe. State and local policy should continue to use these targeted incentives as a tool to encourage and leverage private investment in selected areas already serviced by infrastructure and add to a business environment that will attract economic development to the state's urban centers.

Through the Connecticut Department of Economic and Community Development and quasi-public agencies such as the Connecticut Development Authority, and Connecticut Innovations, the state supports a number of financing and business incentive programs. Through these three agencies, the state provides incentive driven loans, direct loans, loan guarantees and investments in high technology companies throughout the state. In addition to these funding sources, business can take advantage of a number of programs that offer tax credits and exemptions on corporate, property and sales taxes. While some of these programs (as mentioned above) target investment in our urban centers, many of these programs offer business assistance on a statewide basis. In order to focus resources inward and decrease the pressure of development at the urban fringe, state economic development agencies should continue to encourage business development in Connecticut in a manner that incorporates the growth management policies presented in this Plan and support inner city projects and the reutilization of existing infrastructure with all of their available business assistance programs.

The state's labor force is also a major factor in attracting and maintaining economic development in urban areas. Workforce development must be focused on strengthening the competitive edge of urban residents and training must be relevant to the needs of the evolving urban marketplace. Connecticut's public and private educational institutions must work with local business in order to invest in programs that provide real world experiences and focus on relevant training and education. The Connecticut Inner City Business Strategy Initiative, through programs such as STRIVE (Support and Training Result In Valuable Employees) and NFTE (National Foundation for Teaching Entrepreneurship), suggests a critical need for innovative training programs that will improve work readiness, upgrade skills of incumbent workers and provide executive education for urban business owners.

Attracting and maintaining industry is dependant on many factors including the livability of an area, productivity of the work force, market potential, and cost of doing business. As a state, Connecticut is competitive in all of these aspects. However, targeted attention must be given urban areas that lag behind in terms of livability and work force development. Urban areas must not only have an attractive business climate, but must be desirable places to live as well. It is vital that the interdependency of economic development and the supply and development of affordable housing be recognized and that community development activities create the environment necessary for sustainable economic growth, stable neighborhoods and healthy communities.

In addition, transportation planning in urban areas needs to ensure the accessibility of our urban centers and should take advantage of natural assets such as deep-water ports and existing rail lines. Not only is it important to attract incubator business, but urban centers must have the amenities and infrastructure to accommodate these industries as they grow. The involvement of existing institutions such as universities, hospitals, and large private companies must also be encouraged. State, regional, and local planning, in partnership with the private sector must be engaged in creating and maintaining a supportive urban business environment, and actively marketing this environment, in order to foster economic opportunity in Connecticut's cities.

- **Policy:** Promote an urban economy that will attract and retain businesses, sustain business investment and create individual economic opportunity and jobs.

    - Encourage companies to convert unused or underutilized buildings in urban areas into productive properties.

    - Continue to leverage existing programs, as well as develop new ones as appropriate, that make it easier to reclaim or clear industrial property for new development.

- Continue to leverage existing incentives, as well as create new incentives for companies to reclaim old industrial real estate that create jobs where employees don't have to travel great distances and will add cohesion to a central neighborhood.

- Encourage the development of transportation hubs in neighborhoods that will entice residents and pedestrians into the community and into businesses that will make the transit stop more attractive.

- Encourage the use of existing assets in urban neighborhood economies and develop them to serve residents more effectively.

- Encourage municipalities to reserve a sufficient number of desirable sites for industrial development through protective regulation or acquisition by the municipality, which is consistent with the successful, state-sponsored Municipal Development Program.

- Strive to minimize conflicts between industrial development and residential development and transportation patterns to assure accessibility.

- Promote the protection of the state's marine resources industry, ports and harbors from incompatible development and promote access to the waterfront for commercial users and the public.

- Promote urban areas as centers for arts, entertainment and culture.

- Continue to consider job quality when prioritizing economic development investments.

- The private business community, state and local government and regional authorities should be encouraged to continue to support the formation of active cluster working groups.

- Promote expanded use of the state's higher education institutions and vocational education facilities for training and retraining in response to the changing needs of the community and business world.

- In order to reduce the current tax disadvantage of inner-city locations, the state should continue to provide and expand the range of tax credits to businesses seeking to develop or expand in Connecticut's cities.

- The state should continue to support the *Connecticut Inner City 10 Initiative* and other outreach/marketing programs to change current perceptions about doing business in, and increase the competitiveness of the state's inner cities.

- The state should continue supporting urban inner city development through programs such as the Urban Site and Industrial Site Investment Tax Credit Programs.

- State and local government in partnership with the business community should continue to market the inner-city business environment and competitive advantages of the urban location.

- Encourage economic redevelopment through the use of start-up loans provided by organizations such as the Community and Economic Development Fund, which can now make loans to eligible parties in all 169 Connecticut cities and towns.

Growth Management Principle #2

Expand Housing Opportunities & Design Choices to Accommodate a Variety of Household Types and Needs

Housing is a critical component of effective community development for the state and the nation. Among the many indicators of economic change, positive or negative, is housing construction. The type, location, and number of units constructed or rehabilitated has significant impacts on other community resources including infrastructure, public transportation, school systems, local services, and taxes. It is necessary to create housing development policies that integrate the need to respond to these variables.

Strategic growth management principles must also recognize the differences of housing development opportunities in the urban and suburban communities throughout the state. For the most part current housing stock, availability of land, and market value influences these opportunities. Specifically, urban development initiatives related to housing require a balance of rental and ownership units, density and green space, and income diversity.

Today, Connecticut's urban centers are home to a population of primarily low and moderate-income individuals and families who reside in rental housing. Cities are challenged to create more home ownership opportunities for these households. Census data show that 67% of all Connecticut's households own their own homes while in the cities of Hartford, Willimantic, New London and Bridgeport the home ownership rates are 25%, 38%, 40% and 43% respectively. At the same time family median incomes in those cities are one-half to two-thirds of the state's median income of nearly $54,000. The cost to construct new housing far exceeds the market value in many cities which is further exacerbated by a gap between actual market value and what many city residents can afford. The cost to own a home for city residents, relative to income, is proportionately more expensive than for Connecticut's residents on the whole. Increasing home ownership rates in Connecticut's cities is an important step in fostering responsibility for the upkeep of neighborhoods and serves as a building block to creating desirable, stable residential areas. Homeowners have a long-term stake in the community, contribute directly to the tax base and have a vested interest in the quality of their real estate.

The rental costs for city residents are also higher relative to income. For example, in the City of Hartford, 37.4% of households in rental units pay gross rent that is 35% or more of their household income. This compares with 25.9% of rental households in the rest of the municipalities comprising Hartford County. The same data indicates that median rent in Hartford is $560/monthcompared to Hartford County at $645/month, making the significant indicator the low household income in relationship to housing cost. This holds true for all of Connecticut's urban centers.

Aging housing stock is also an issue. For instance, in the City of New London 68.5% of the existing household structures were built prior to 1960. Similar percentages exist across the state's urban areas. These structures typically require more upkeep and are more expensive to maintain than newer housing. For those city residents who do own their own home, this expense, coupled with lower incomes, can be difficult to meet.

While the cost of housing, relative to income, is higher in cities, between 1990-2000, conditions for housing did improve in some areas of the state where increases in income levels kept pace with increases in housing costs. Median household income rose 9.6%, while the cost of an owner-occupied dwelling unit fell 6%. And although median monthly rent rose 14%, this did not cause an increase in the percentage of income households paid for housing costs. Although income has maintained pace with housing costs in certain areas, without assistance, many potential buyers will have little chance to enjoy homeownership**.** The April 2002 study of Southeast Connecticut, "Housing A Region In Transition", indicates that between 1990-2000, the region's economy shifted from primarily defense dependent to one now dominated by the tourism and gaming industries. The growth of new job opportunities in these industries has created a

population shift (while the overall population increased by only one percent, single person households increased by 22% and total households by 7%) that has placed a significant demand on the region's supply of housing units. This market demand has served to increase housing costs and reduce availability.

In order to fully address the housing and economic disparities that exist in Connecticut, the development patterns that have grown over time and the way growth is viewed as a society must be re-examined. Continued growth at the outside boundaries of urban and growth areas will only serve to reinforce existing population and housing disparities, abandon existing infrastructure, strain transportation systems and increase environmental risks. Strategies must be developed to create new opportunities within our existing development areas that will revitalize our regional centers, sustain older suburban communities, and give more residents the ability to secure housing across regional areas. As such, state programs that support housing development need to prioritize project assistance in a manner that incorporates the growth management policies presented in this Plan.

Connecticut, through the Department of Economic and Community Development (DECD) and the Connecticut Housing Finance Authority (CHFA) has programs in place to assist with homeownership, rehabilitation, maintenance and the development of affordable housing. CHFA offers several home mortgage financing programs to assist low and moderate-income borrowers to encourage homeownership. CHFA's single-family mortgage programs have income and sales price eligibility requirements. However, to encourage homeownership in urban areas of the State, income limits do not apply. CHFA also provides financing to build and/or rehabilitate affordable rental housing throughout the State and supports economic development objectives by providing financing for market rate rental housing in key urban areas consistent with state development and revitalization efforts. Through the administration of its lending and tax credit programs the Authority seeks to support land-use and growth management strategies consistent with the objectives of the Conservation and Development Policies Plan. The DECD offers a variety of affordable housing products and services that are primarily income targeted and support development projects through grants, loans and loan guarantees. The opportunities DECD provides are market driven and include: first time homeownership opportunities, land trusts, limited equity cooperatives and mutual housing associations, transitional and permanent housing for homeless populations, supportive housing for special needs populations, adaptive re-use of commercial properties for residential use and elderly and congregate residential housing. While these programs are designed to address many of the issues discussed above, they may not be specifically tailored to address land-use patterns and growth management strategies, key elements of any housing development policy.

Local land-use regulations must also encourage the appropriate development of multifamily, mixed-use, mixed income and low and moderate-income housing. Housing policy needs to be managed in a manner that promotes inclusionary

zoning practices at the municipal level, affords municipalities the ability to maintain the unique character of their communities and address housing choice and mobility on a regional basis. Connecticut General Statutes, Section 8-2, state that zoning regulations of every Connecticut municipality shall;

> "…encourage the development of housing opportunities, including opportunities for multifamily dwellings, consistent with soil types, terrain and infrastructure capacity, for all residents of the municipality and the planning region in which the municipality is located, as designated by the Secretary of the Office of Policy and Management under section 16a-4a. Such regulations shall also promote housing choice and economic diversity in housing, including housing for both low and moderate income households…"

According to the Report of the Blue Ribbon Commission to Study Affordable Housing, dated February 1, 2000, over half of Connecticut's municipalities have not followed this legislative directive. If the state is to achieve housing mobility, even at modest levels, zoning policy must be balanced with the need for housing opportunity. One of the conclusions of the "Housing A Region In Transition' study is that "local land use policies and regulations are a key element in any regional effort to meet housing needs." Regional strategies should promote fair share housing practices to address the concentration of affordable housing in some areas and the lack of affordable dwelling units in others.

Commitment to a regional housing strategy means that some areas must try to accommodate growth of market based housing in a manner that maintains environmental and community values, while creating opportunities for diverse income groups. Other areas will require strategies to promote compatible infill or to expand low and moderate-income housing opportunities through either new construction or through rehabilitation of substandard housing. Still other areas with severe deterioration of housing will require a focus on neighborhood revitalization strategies that cut across human service, health and safety, economic development, transportation and housing disciplines. Planning will need to address the need for mixed income, mixed use, transit oriented housing development on a regional basis to create housing, and employment mobility.

Community development planning needs to take a multi-disciplined approach in order to address the many facets involved in sustainable urban revitalization and housing mobility. It is necessary to integrate planning for affordable housing across disciplines in order to encourage investment in cities and promote economically diverse urban centers, as well as create incentives for affordable housing in areas that are underserved. Policies must be directed toward building capacity and critical mass in order for all areas to be economically vibrant and sustainable. The development of mixed-income housing and housing choice is a first step to community development and creates opportunity, residential stability, public order, and confidence. Housing should be seen as a building block to create

the necessary critical mass to support neighborhood business opportunities and sustainable quality communities.

- **Policy:** Promote housing mobility and choice across income levels utilizing current infrastructure and the preservation of existing residential neighborhoods and housing stock.

  - Study regional housing cost patterns and zoning practices and establish regional plans to address and promote affordable fair-share housing and inclusionary housing policies.

  - Encourage planning for affordable housing on a regional basis to provide choice across income levels, proximity to employment and greater opportunity to develop income diverse neighborhoods in urban and suburban areas.

  - State funded programs for affordable housing development and homeownership should be implemented, when and where appropriate, in a manner that is consistent with the growth management policies in this Plan of Conservation and Development

  - The State should encourage regular contact among government agencies and housing providers to tailor housing, job training, transportation access and economic development resources to meet community needs, and be cost effective.

  - Invest in the maintenance of existing publicly assisted rental housing stock to preserve it as a long-term resource.

  - Continue to encourage and support existing incentives as well as to encourage the development of local initiatives for the promotion of homeownership opportunities in regional centers where homeownership rates lag far behind.

  - Provide favorable loan terms for multifamily housing and mixed-use properties in targeted areas.

  - Market urban communities to certain niche populations more likely to move back to urban environments such as young people and empty nesters

  - Support local efforts to develop appropriate urban infill housing to make better use of limited urban land.

- Continue to support incentive based priming of housing markets through strategically targeted housing development to create additional investment opportunities in those areas.

- Support adaptive reuse of historic structures for use as residential housing.

- The state should promote support for mixed-income developments in areas that currently under-serve low and moderate-income households.

- Study existing zoning regulations to determine if they provide realistic opportunities for development of multifamily dwellings and low and moderate-income housing where needed.

- Study the need for and impact of developing model zoning regulations that encourage housing opportunities for multifamily dwellings and promote housing for low and moderate-income households.

- The state should consider strengthening language in CGS 8-2, or a new section, to define inclusive zoning policy and require municipalities to adopt zoning regulations that adhere to this policy.

- On a regional basis, the need for equitable housing choice and mobility should be addressed to promote fair share affordable housing across municipalities.

- The state should consider giving regions and/or municipalities that meet affordable housing thresholds priority for open space funding or other incentives.

- Encourage interaction of civic groups, local political, religious and community leaders in order to build a sense of community.

- Recognize the interdependency of economic development and affordable housing and encourage public/private partnerships in the development of affordable housing as a statewide economic development strategy.

- Encourage alternative land use strategies by municipalities that support the housing policies of this Plan.

- Encourage and promote access to recreational opportunities, including trails and greenways, for affordable and mixed-income housing.

Growth Management Principle #3

Concentrate Development Around Transportation Nodes and Along Major Transportation Corridors to Support the Viability of Transportation Options

Transportation planning, to provide safe, efficient and cost-effective movement of people and goods, is primarily a state and regional responsibility. Municipalities are responsible for planning and regulating land use development within their borders. The lack of integration between these two planning functions has had a cumulative effect on unintended development and the inefficient use of transportation resources.

Over the past several decades, population migration from cities to suburbs has made it increasingly difficult and expensive to accommodate society's demand for mobility. As land use patterns change, the transportation system is faced with new demands in certain areas while other areas are left with underutilized capacity. The effort and cost to just maintain this expansive network, limits the state's ability to be responsive to all of the deficiencies in the transportation system.

Today's suburban communities are characterized by their low-density, single use patterns of development that seldom support any form of transportation other than the automobile.

Commuting patterns that traditionally involved a central hub now often cut across regions from suburb to suburb. Highway-accessible shopping malls, corporate offices, and industrial complexes have drawn considerable retail and employment away from regional centers, further limiting public transportation's ability to be responsive to the convoluted travel demands. As a result, suburban arterial

roadways are forced to handle significantly more traffic than they were designed to accommodate.

Past experience confirms that the state cannot build its way out of congestion, as short-term improvements in highway expansion often exacerbate development pressures at the suburban fringe. The solution requires a consistent, long-term approach to match land development with the ability of the transportation network to provide an acceptable level of mobility. There is no silver bullet that can cure congestion, but transportation options can become viable over time as more concentrated land use patterns emerge through prioritized infill development around transportation nodes and along major transportation corridors.

The following sections address key policies and strategies for restoring a more sustainable balance to Connecticut's transportation system, while recognizing the important complimentary role that Metropolitan Planning Organizations (MPOs), municipalities and their residents must play to ensure that scarce state resources are invested in projects that are vital to promoting a healthy and vibrant economy, environment, and quality of life in each region of the state.

A. Strategic Economic Framework

The Transportation Strategy Board (TSB) was created to bring a statewide strategic investment perspective to the state's transportation planning process. Connecticut's ability to compete for economic development depends in part on an efficient transportation system that provides adequate connections to national and global markets by road, rail, sea and air. Bradley International Airport and the state's three seaports in New London, New Haven and Bridgeport serve as Connecticut's gateways to the world. These major transportation hubs handle the bulk of the state's foreign trade, while highway and rail freight are the dominant domestic shipping modes.

Investments in transportation infrastructure benefit the economy by creating construction-related jobs, increasing the productivity of businesses, and improving the overall quality of life for individuals. Business operations that involve freight distribution depend on rapid unencumbered access to products and markets, especially in this era of just-in-time inventory methods and reduced warehousing practices. Furthermore, business productivity suffers whenever employee commute trips are delayed by traffic and stressful driving conditions.

The primary goal of the Connecticut Department of Transportation (ConnDOT) is to maintain and maximize the efficiency and safety of the existing transportation system. ConnDOT must also administer the implementation of TSB priority projects, as funding permits. The TSB strategy is designed to target transportation projects that have a positive economic impact on an industry cluster, a region, or the overall statewide economy.

In order to ensure that such capital investments achieve their goal, it is imperative that municipalities, in consultation with their MPO and/or ConnDOT, take appropriate steps to address local traffic congestion and zone for land uses that support the growth projections in ConnDOT's 20-year project design capacity.

- **Policy:** Cluster freight and passenger facilities and other supportive development in appropriate locations near seaports, airports, and rail terminals to promote a broader range of safe and competitive transportation options and to reduce the amount of long haul truck traffic through the state.

    - Improve landside access to seaport facilities to support intermodal connections and containerized shipments. Schedule dredging activities to accommodate feeder barge draft capacity.

    - Expand maritime-based industry by promoting appropriate land use activities around the state's three major ports and discourage non water-dependent land uses within port zones.

    - Encourage complimentary public and private development in the vicinity of Bradley International Airport through coordinated multi-town economic development plans.

    - Improve the land transportation network serving Bradley's passenger and air cargo markets by providing appropriate connections to multi-modal hubs.

    - Provide relief of general aviation traffic at Bradley by emphasizing use of reliever airports in central Connecticut.

    - Undertake improvements at public use airports in accordance with approved airport master plans. Development or improvements to coastal airports shall be in accordance with coastal area policies.

    - Ensure rail freight access with the New York City market and with other parts of the national transportation grid via collaborative efforts with neighboring states. The Transportation Strategy Board and ConnDOT should work with appropriate stakeholders to identify the need for and ensure that commensurate measures can be taken by Connecticut to plan for and manage the anticipated growth in freight traffic if a new rail freight crossing project for the Hudson River is approved.

    - Preserve abandoned rail rights-of-way that have a demonstrated potential for future transportation use and oppose abandonments that harm the state, when economically justifiable. Explore interim

or long-term use of rail corridors for recreation purposes and/or greenways.

- Promote intensive development near the Stamford, New Haven and New London stations that provide high-speed rail passenger service between Boston and New York.

- Any proposed new interchange on a limited access highway should be required to undergo a cost-benefit analysis relative to its impact beyond the local economy, such as an industry cluster, the regional or statewide economy to ensure that induced growth occurs in areas that already have the capacity to support development at an urban scale.

- Identify potential sites for designating pre-approved development areas around major transportation nodes, corridors and facilities. The state and Regional Planning Organizations should assist interested towns and their residents in determining the type and size of the activities appropriate for the site, determine specific permits and approvals required, and identify potential funding sources for site remediation.

B. Transit Supportive Land Use

State investments in public transportation equipment and operations cannot be cost-effective without supportive land use planning and design. Transit supportive land use is a process whereby communities plan and zone for intensive, mixed use development in close proximity to transit stations or along transit corridors where physical infrastructure is typically already in place. A wide variety of transportation options, including train, bus, car, bicycle and walking should be integrated into the area's design in order to provide travel choices and improve the overall effectiveness of the transit system for all of its users.

Transit supportive land use presents opportunities for infill development and redevelopment in underutilized areas, including a wide variety of housing types and prices, and reducing the number of automobile trips. By mixing employment, residential, retail, and leisure activities into concentrated areas, transit service can become more viable. Furthermore, station area development is a way to bring visitors into a community to shop or dine without adding to traffic on local roads.

Transit supportive land use is about more than just addressing the transportation engineering aspect of moving people safely and efficiently. It is about creating an environment that facilitates opportunities for social interaction and chance encounters. This can be an attractive environment for many, including young professionals, college students, senior citizens, and others who might choose to live and work nearby, in addition to enhancing their mobility.

Communities that currently have stations along the New Haven Line and its branches and the Shoreline East commuter rail line have the greatest potential for transit supportive land use. Shoreline East communities in particular have an affirmative obligation to create new ridership by clustering residential development within walking distance to stations, if this heavily subsidized service is to ever become more viable.

Several other opportunities exist for transit supportive land use in communities along the New Haven-Hartford-Springfield commuter rail line. Furthermore, a network of planned bus rapid transit facilities in the Capitol Region will create additional opportunities for station area development. Lastly, municipalities with existing local bus service can evaluate their routes and stops to ensure that areas with high density, mixed uses, and pedestrian access are well served by transit.

- **Policy:** Promote compact, transit accessible, pedestrian-oriented mixed use development patterns around public transportation stations and along public transportation corridors.

  - Encourage affected municipalities to enact transit supportive zoning regulations within ¼ mile of an existing or proposed transit station. Such regulations should be developed with assistance from the respective regional planning organization (RPO) and have consensus among the community regarding specific density and design standards. ConnDOT should concur with the regulations before any related capital project is approved for funding.

  - Provide incentives for developers to invest in projects that complement both the community development goals within the transit corridor and the transit system operation, such as pre-approved development areas and density bonuses for protecting open space.

  - Provide incentives for individuals to live within walking distance to public transportation facilities through strategies such as location efficient mortgages that allow the mortgage applicant to apply more income toward the monthly mortgage payment as a result of lower monthly personal transportation costs. Employers are also encouraged to provide housing or public transportation incentives for employees who live near their jobs and/or use public transportation.

  - Provide state tax incentives for businesses that locate in areas accessible to public transportation facilities, such as Connecticut's Inner City Business Strategy discussed on page 26.

- Emphasize clustering of mixed-use, mixed-income development in pedestrian friendly villages to reduce the number of automobile trips, especially in Rural Community Centers where public transportation may not be available.

- Encourage an appropriate mix of services near transit stations that accommodate the needs of working families and the transit dependent.

- Provide a network of pedestrian and bicycle paths and greenways that are safe and provide convenient access to the transit system. Wherever possible, the transit system should try to accommodate bike transport or provide appropriate storage facilities at the station. Vehicle operator awareness programs pertaining to bicycle and pedestrian safety should also be promoted around transit corridors.

C. Managing the Existing Transportation System

The ConnDOT Master Plan focuses primarily on the agency's responsibility to maintain and maximize the efficiency and safety of the existing transportation system. Due to the extensive effort and money dedicated to the Infrastructure Renewal Program since 1984, Connecticut's transportation system, with the exception of its rolling stock, is generally in good physical condition. However, current fiscal, social and environmental constraints limit the state's ability to rely on future capacity expansion projects to address congestion on state highways and the New Haven Line commuter rail services, or to provide new public transportation service to low-density development.

Due to the heavy demand on much of the state highway system, it is inevitable that construction and maintenance activities will only exacerbate traffic conditions. The need to alter access on roadway segments during maintenance activities, intersection improvements, or new lane additions requires significant traffic management and safety planning. ConnDOT has implemented a number of management techniques to reduce disruptions, such as contractor incentives for shortening the duration of construction and moving construction periods to off-peak times when traffic volumes are lower.

ConnDOT and the Metropolitan Planning Organizations continue to conduct strategic corridor planning studies to develop a comprehensive set of strategies for addressing Connecticut's most critical transportation needs. The corridor studies involve relevant state and federal agencies, local officials and the public, and evaluate future deficiencies and needs, recommend strategies for improving transportation and land use coordination, and establish priorities for implementing projects.

Many of the existing and projected highway capacity problems occur on state maintained arterial roads. Congestion on these roads often results from strip development and poorly designed access along commercial corridors. Roadways cannot efficiently handle both rapid through-traffic and local on/off movements. An access management plan is one mechanism that can be used to preserve and improve the capacity of existing arterial roadways by controlling the number, location, and design of driveways and side streets within a corridor.

By adopting access management policies through zoning regulations, plans of development, site plan review procedures, or driveway ordinances, municipalities, in cooperation with state and regional transportation planners, can limit the adverse impacts associated with development. In certain extreme instances where the existing roadway capacity cannot be expanded or its productivity further increased, it may become necessary for towns to allocate remaining access on a commodity-like basis for all but existing residential lots.

Flexible design standards for roads and bridges, context-sensitive design, and traffic calming techniques are other strategies that can be considered during a project's design phase, when supported by complementary local land use controls. Although not appropriate for all roadways, these strategies can be effective in certain instances on state roads in Rural Community Centers and Historic Areas when the desire to slow traffic, enhance pedestrian safety, and/or preserve community character takes precedence over vehicle throughput. Traffic calming strategies can also be incorporated into certain low-volume, local street designs to slow traffic through neighborhoods and allow pedestrians and cyclists to co-exist safely with automobiles.

Urban and rural areas have fundamentally different characteristics regarding density, types of land use, and travel patterns. State routes in Rural Lands also need to be proactively managed to enable future growth to occur in a manner that does not overwhelm the existing roadway design capacity. Functional roadway classification is the process by which streets and highways are grouped into classes according to the service they are intended to provide to the surrounding land uses. Connecticut's road classification system can be improved to better reflect the intended transportation and land use functions along the highway network.

The lack of sufficient quality parking near key New Haven Line and branch stations is a major limiting factor in the state's efforts to expand intra-state commuter demand. The vast majority of commuters do not live within walking distance to a station or within easy access to a bus line, so their only means of access is via the automobile. Future station area development must be balanced to serve not only commuters' parking needs, but also to provide for more transit supportive land use that makes more housing and services available within close proximity to the station.

While most individuals will not change their commuting habits unless an alternative becomes more convenient and less expensive than the automobile, corporate decisions regarding site location and parking policy can be key to enhancing the viability of alternative modes of transportation. Coordinated planning among employers, developers, transit providers, and government representatives must continue to address the local issues of parking management, transit, ridesharing, and shuttle services. A strong regional approach to encourage employment clustering is also needed, since competition between municipalities vying for the same jobs and potential property tax revenue often undermines efforts to reduce congestion. In order to discourage fringe development, funding for economic development projects should be tied to local land use decisions that channel traffic-generating development to more accessible locations within transportation corridors.

Transit service expansions should be considered when bolstered by high density, mixed land uses. Transit providers should continue to provide service to those corridors where transit service currently exists, is most feasible, or is essential to maintaining access and sustaining the economic development of urban areas. In addition, demand for specialized transportation services is expected to continue due to changing demographics and the needs of older persons to maintain their mobility and independence.

People with disabilities, as well as other transit-dependent populations, often have special transportation needs that make them particularly dependent on public transportation. Without adequate transportation, these persons are denied access to employment, education, health care, and social services. Affordability and accessibility to demand-responsive services are essential to the daily mobility of these individuals. Coordination must continue to be improved among the organizations that provide these services, and regularly scheduled public transit routes must be supplemented, where appropriate, with specially equipped vehicles for the disabled. Regional dispatching of specialized door-to-door transportation services is an effective mechanism that can aid in achieving such improvements. Efforts to accommodate the transportation needs of city residents who leave welfare to find jobs must also continue with expanded transit and/or vanpool service to major suburban employment centers.

Providing efficient connections between different modes is key to achieving a more balanced transportation system that serves both people and goods via land, air and sea. Since most transit trips begin or end with a pedestrian trip, transit connections must be convenient, accessible, and competitive with single use modes. Furthermore, the various modes should serve complementary functions, such as feeder service to a main line connection, to avoid competing for the same market. Technological advances, such as real time scheduling, have made intermodal demand management a key area for improvement at ConnDOT.

Utilizing telecommunications and information technologies in the deployment of Intelligent Transportation Systems (ITS) can also enhance the safety and efficiency of transportation systems by providing real-time information on traffic conditions and transit schedules. ITS technologies include computerized signal controls that provide smoother traffic flow and less idling time on arterial roadways, traffic monitoring and surveillance devices that allow for early detection and interdiction of traffic-causing incidents, and automatic vehicle location systems that improve dispatching and scheduling of transit services. Continued monitoring of electronic toll collection systems in neighboring states may provide insight into possible future region-wide applications and experiments with peak-period congestion pricing and high occupancy toll lanes.

Transportation and communications systems now are bound together as part of the same network that connects the state to the larger national and global markets. As the telecommunications industry adapts to technological, economic, and societal forces, there will be impacts on transportation and land use. However, the exact nature of these impacts cannot be predicted. Telecommunications technology may free many individuals from traditional work commutes, but caution must be taken to ensure that transportation and land use policies do not accommodate further decentralized development.

- **Policy:** Maintain and maximize the efficiency and safety of the existing transportation system and improve the coordination of air, land, and water-based transportation operations to provide adequate mobility for its users.

  - Manage construction and maintenance projects in a manner that reduces overall incidences of construction-related delays.

  - Require access management plans for all Strategic Corridor Planning Studies and for all state highways in Rural Community Centers and Rural Land categories, so that land use and transportation planning work in unison to preserve highway capacity and an acceptable level of service. For planning regions that do not meet the definition of metropolitan region, the RPO shall fulfill the transportation planning role.

  - Allow for flexible design standards, context-sensitive design, and traffic calming measures on highways and bridges in Rural Community Centers and Historic Areas when the local desire to slow down traffic, enhance pedestrian safety, and/or preserve community character takes precedence over vehicle throughput.

  - Assess the actual versus intended functional classification of each state highway segment to determine if municipal land use policies and state transportation policies are in conformance.

- Continue to schedule rehabilitation, expansion, and maintenance activities for the New Haven Line including track, bridges, catenary, shops and yards, as well as upgrading railroad crossings.

- Provide for the addition of new rolling stock on the New Haven Line to accommodate demand, and plan for the regular replacement or maintenance of rail equipment and facilities.

- Provide appropriate expansion, improvement, and coordination of parking facilities, shuttle and local bus service at New Haven Line stations.

- Enhance Shore Line East service commensurate with demand during construction activities associated with Q-Bridge replacement and associated widening on I-95.

- Continue rehabilitation of general aviation runways and taxiways, and maintain the State Pier in New London and existing state ferry service.

- Encourage development of an integrated network of private ferry services and related harbor area development, as promoted by the Long Island Sound Waterborne Transportation Plan project, when consistent with municipal and regional plans of conservation and development and coastal area policies. Priority should be given to harbor locations that have the potential to accommodate intermodal connections, reduce highway congestion, and generate complementary landside development.

- Continue to market Bradley International Airport to a wider audience, pursue additional air carrier routes, and upgrade airport-related services. Promote utilization of Tweed-New Haven and Groton-New London airports as secondary commercial airports.

- Improve intermodal connections at key transportation hubs to effectively serve major markets and activity centers.

- Continue to coordinate with Amtrak and the Federal Railroad Administration to improve high-speed rail service between New York and Boston with service to Stamford, New Haven, and New London.

- Maintain and improve highway access to both in and out-of-state ports, airports, and rail freight intermodal facilities.

- Encourage collaborative efforts with neighboring states to foster coordinated, demand-based, public transit to accommodate regional labor markets that cross state lines.

- Encourage public/private partnerships in financing public transit operations, such as employer-sponsored shuttles that provide connections to local rail stations.

- Encourage employers to consider offering their employees "commuter choice" benefits, such as TransitChek or parking cash-out, to the full extent allowed under federal law.

- Institute new suburb-to-suburb bus routes, where practicable, that do not require a transfer at an urban hub and where supported by land use infill and intensification decisions along the corridor.

- Provide city to suburb bus/vanpool service, where demand warrants, especially for persons leaving welfare to find jobs at major suburban employment centers.

- Provide policy and technical support for regional coordination of specialized transportation services for the elderly, disabled, and transit-dependent.

- Foster deployment of ITS technology where appropriate to improve the safety and efficiency of existing highway and transit systems.

- Explore the feasibility of electronic toll collection and congestion pricing in light of changing technology and federal funding by monitoring neighboring states' experiences with the EZ Pass system.

- Preserve abandoned rail rights-of-way that have a demonstrated potential for future transportation use. Explore interim or long-term use of rail corridors for non-motorized transportation, recreational purposes and/or greenways.

- Support a viable rail freight system that meets the needs of the state and is fully coordinated with existing and planned rail passenger operations. Encourage potential rail-using activities to locate along existing freight lines.

- Complete major transportation projects identified in the Connecticut Master Transportation Plan contingent upon economic feasibility and successful environmental review of benefits and

costs, including evaluation of secondary growth impacts induced by the project. Public Act 91-101 requires that major transportation proposals be identified in the Plan of Conservation and Development. Major transportation proposals and projects include:

- Route 6 corridor improvements from Bolton to Windham
- Route 7 bypass of Brookfield commercial district and widening in New Milford
- I-84 lane addition from Waterbury to Southington
- I-84/Route 72 interchange configuration improvements in Plainville
- Route 72 realignment and widening from Plainville to Route 229 in Bristol
- I-95 bridge rehabilitation and Corridor Improvement Program in Bridgeport
- Route 34 Stevenson Dam Bridge improvements in Monroe/Derby
- Route 15 replacement of Sikorsky Bridge over the Housatonic River in Milford
- Route 25 corridor improvements from Monroe to Newtown
- Route 6 corridor improvements in Brooklyn
- I-95 New Haven Harbor Crossing (“Q” Bridge replacement) and lane addition to Branford
- Route 82/85/11 corridor improvements from Salem to Waterford
- Route 7 corridor improvements including completion of the Merritt Parkway interchange in Norwalk and widening of existing Route 7 from Danbury to Ridgefield
- Bus Rapid Transit System from New Britain to Hartford
- Bus maintenance facilities for New Haven and Waterbury areas

- New Haven Line catenary replacement, transportation crew facility, and fiber optic communication network

- New Haven Line parking expansion at New Haven and Wilton stations

- New Haven Line Americans with Disabilities Act (ADA) improvements to Milford, Fairfield and Westport stations

- Shore Line East rail station improvements in Branford, Guilford, Madison, Clinton and Westbrook

- Reconfiguration of New Haven rail station track and signal system

- Installation of centralized traffic control on the New Haven Line-Danbury Branch

- Misc. bridge replacement projects along New Haven Line

- Southeastern Connecticut ITS traffic management system

Other major ongoing studies are conducted as a preliminary step to environmental review in order to ensure that all prudent and feasible alternatives are identified in advance and assessed in accordance with their economic, social, and environmental implications. Major transportation studies include:

- Bus Rapid Transit feasibility study from Manchester/Vernon to Hartford

- Downtown Hartford bus circulation study

- Griffin Corridor Reassessment

- New Haven-Hartford-Springfield Commuter Rail Study

- I-95 Branford-Rhode Island Feasibility Study

- Route 2/2A/32 corridor improvements in southeastern Connecticut

- Feeder Barge Services

- Stamford Urban Transitway

• South Central Regional Transit Development Study

• I-84 corridor improvements between Danbury and Waterbury

• I-84/Route 8 interchange in Waterbury

D. Transportation and the Environment

Attaining a cleaner and healthier environment requires that transportation and land use decisions do not adversely affect the attainment or maintenance of air quality, water quality, or energy planning objectives. An ongoing challenge to this objective is the continued increase in vehicle miles traveled (VMT), due in large part to decentralized patterns of development. Increases in VMT threaten to offset some of the gains from technological advances in automobile fuel efficiency and emissions control systems.

Consumption of energy is the primary source of air pollution in our state. Emissions from the burning of fossil fuels contribute to a range of undesirable consequences including acid rain, water pollution and global warming. Global climate change concerns have led to calls for action to reduce the production of greenhouse gases, primarily carbon dioxide. The transportation sector is the single greatest source of greenhouse gas emissions.

The transportation conformity provision of the Clean Air Act is the principal tool for linking transportation planning to the attainment of health-based air quality standards. ConnDOT is required to assess the conformity of transportation programs, plans and projects with the state's air quality plan to determine the effects of six criteria air pollutants (ozone, particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead). Existing conformity procedures will continue to ensure that this issue is properly considered prior to key decision points in the transportation planning process.

Another issue addressed early in the planning stages for transportation projects is the avoidance of significant or sensitive natural resources. Roadways and paved areas produce some of the highest concentrations of non-point source pollutants, such as phosphorus, suspended solids, bacteria, and heavy metals. These pollutants are carried by stormwater run-off over land, potentially contaminating surface and groundwater. Attention to existing and potential non-point sources of pollution must be integrated into everyday planning and land use management. Strategies to slow the growth of impervious surfaces include clustering development, reduced road width, judicious use of curbing, retaining natural drainage features, and substituting pervious surfaces where appropriate.

- **Policy:** Ensure that transportation projects conform to applicable air quality, water quality, and energy planning standards.

- Promote travel reduction programs which, together with other energy, air quality, and transportation programs, will reduce the rate of growth of annual vehicle miles traveled to a level that will contribute to the achievement of: 1) ambient air quality standards for ozone; 2) a reduction in carbon dioxide emissions; 3) energy intensity improvements and reduced petroleum reliance; and 4) satisfactory levels of service on state highways.

- Identify and promote the most cost-effective ozone reduction strategies that are consistent with transportation policies and urban development goals.

- Promote the use of telecommuting as a strategy to reduce congestion and the resulting vehicle emissions.

- Encourage a balanced approach to the siting of telecommunication towers that fulfills the public need for enhanced communication capability, while respecting the importance of municipally identified scenic areas.

- Ensure that transportation projects on or around state scenic roads, as designated by ConnDOT's Scenic Road Advisory Committee, are designed and managed in a manner that does not detract from the scenic or natural character or visual qualities of the road area.

- Incorporate stormwater management techniques in new or reconstructed roadway and bridge projects to provide effective alternatives to diverting collected runoff into water bodies via impervious paved surfaces. Such techniques should address groundwater recharge and wetlands impacts associated with potential hazardous materials spills, road salt, removal of vegetated buffers, and erosion and sedimentation.

- Encourage energy-efficient patterns of development such as revitalized Regional Centers, higher densities around public transportation nodes and along corridors, and planned mixed-use development that provide convenient access to transit and enable more opportunities for bicycling and walking.

- Encourage municipalities to implement pavement management programs incorporating natural resource-based stormwater management techniques that reduce the amount of impervious paved surfaces. For example, a system of gravel shoulders and adjacent grassed swales can be substituted for traditional storm sewers, improving filtration of stormwater runoff and protection of

watersheds. Encourage municipalities to identify opportunities to retrofit/reduce existing impervious areas.

o Encourage diesel emissions reduction through engine tune-ups, cleaner diesel fuels, emissions filter catalysts, and retrofitting equipment.

o Encourage fleet conversion to natural gas or other alternative fuel, and support development of appropriate refueling infrastructure.

o Support actions that improve the energy efficiency of vehicles and the use of alternative fuel vehicles and advanced technologies such as fuel cells.

Growth Management Principle #4

Conserve and Restore the Natural Environment, Cultural and Historical Resources, and Traditional Rural Lands

A goal of this plan is to preserve diverse landscapes that offer outdoor recreation, preserve fragile natural communities, agricultural lands, and habitats for plants and animals, protect and enhance water resources, and offer green spaces accessible to residents both in the country and in the cities. These natural, scenic, recreational, and historic areas of the state are essential to the quality of life, are important economic assets in Connecticut, and must be maintained and protected from adverse effects. Preserving this heritage is a challenge in such a small, densely populated state with a limited land and water resource base. Future development must occur in careful balance with the protection of these resources.

In recognition that the natural resources of the state were finite and precious and that a growing population and expanding economy were having a profound impact on the life-sustaining natural environment, the General Assembly declared the policy of the state "is to conserve, improve and protect its natural resources and environment and to control air, land, and water pollution in order to enhance

the health, safety, and welfare of the state." It directed state government to use all practical means to improve and coordinate state plans, functions, programs, and resources to the end that the state may:

- "fulfill the responsibility of each generation as trustee of the environment for succeeding generations;

- assure for all residents of the state safe, healthful, productive, and aesthetically and culturally pleasing surroundings;

- attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

- preserve important historic, cultural, and natural aspects of our Connecticut heritage and maintain, where possible, an environment which supports diversity and variety of individual choice;

- achieve an ecological balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities;

- enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources; and

- practice conservation in the use of energy, maximize the use of energy efficient systems, and minimize the environmental impact of energy production and use." ……..(C.G.S. Section 22a-1a(b)).

Connecticut has a strong history of protecting the environment. It has strict anti-pollution laws as well as statutory and regulatory protections for important natural resources. State, municipal and private agencies and organizations have set aside irreplaceable scenic and recreational resources. Regulatory programs afford protection to specific resources such as wetlands and floodplains. Yet, the scope and intricacies of regulation and the limits on the ability to compete with development in setting aside land leaves an undesirable margin for environmental degradation. To maintain this diversity and natural heritage, it is necessary to protect the functional integrity of critical wildlife habitats and important natural resource systems such as watersheds, ridgelines, large forest areas, and Long Island Sound. Identifying and protecting these larger systems must be a major focus of future public and private conservation and development planning efforts.

While economic and social forces shape much of the quality of urban life, the natural environment is an important amenity often in short supply in the cities. Cities also hold many of our cultural and historical resources of greatest value.

Preserving and celebrating these resources while enabling sorely needed economic and social revitalization is a vital concern.

Recognizing and avoiding impacts to environmentally sensitive areas not only offers protection but is generally much more cost-effective than attempting to clean up or mitigate impacts after the fact. This does not mean halting all development in all areas, but it does involve careful attention to ensure that the resources of concern are not harmed.

A. Open Spaces

Existing Preserved Open Spaces:

Existing Preserved Open Spaces are places protected by public or quasi-public ownership. (Refer to the back of the Locational Guide Map for more concise definition of this category). They represent a commitment and investment of past generations to set aside areas that range from intensively used public beaches and playgrounds to natural preserves with highly controlled public access. Continued maintenance of these open spaces is a high priority of the state.

- **Policy:** Continue to protect Existing Preserved Open Space areas and to limit improvements to those consistent with long-term preservation and appropriate public enjoyment of the natural resource and open space values of the site.

    - Encourage public use in conformance with management plans that foster long-range, multi-purpose usage;

    - Approve actions not consistent with long-term preservation only when it is demonstrated that there are overriding social, economic, and public benefits and there are no feasible alternatives; and

    - Manage public trust lands to ensure their long-term preservation, the viability of their natural ecological processes, and availability to the public.

Preserved Open Space Objectives:

It is a goal of the state to have at least 10% of Connecticut's land area (320,576 acres) owned by the state as open space for the beneficial use and enjoyment of the public as additions to the state's system of parks, forests, wildlife, fisheries and natural resources management areas. It is also a goal of the state to assist municipalities, private non-profit organizations, and water utilities to preserve an additional 11% of the state's land area (352,634 acres) for a total of 21% of the state's land preserved as open space by the year 2023 (Connecticut General

Statutes Section 23-8(b)). *The Connecticut Green Plan: Open Space Acquisition for Fiscal Years 2001-2006* recommends the types of lands that should be acquired.

- **Policy:** Provide a system of appropriately managed natural areas with a diversity of well-functioning habitats, and a wide variety of high quality outdoor recreational opportunities to all citizens, emphasizing activities that broaden understanding of and contact with the natural environment. Assess statewide needs for recreational resources and facilities. Develop management plans that maximize multiple uses of state-owned lands, and encourage collaborative ventures with municipal and private entities to provide, protect, and manage recreation and habitat lands, emphasizing:

  - Continued support for state acquisition or state assisted acquisition of open space lands for natural resource protection to meet the overall statutory goal of preserving 21% of the state's area, while seeking to define an appropriate resource-based goal for protected acreage;

  - New water-based recreation sites that are consistent with other resource protection requirements;

  - Access to Long Island Sound shoreline areas of highest recreational potential, with recommendations for state-first option for purchase, lease-back, easements, and other incentives to maintain and increase public access to coastal areas, or to acquire through emergency purchase high-hazard coastal areas;

  - Maintenance of access to sufficient acreage to support hunting and fishing as viable sporting activities through coordinate management of public land and access to leased privately owned open space;

  - Continued development of five-year open space acquisition, recreation, and wildlife development plans as an adequate, comprehensive and balanced schedule for expanding state recreational facilities and for preserving and enhancing management of areas critical for protection of wildlife habitats, water quality, and other natural resources;

  - Maintenance and management of critical wildlife habitats, exemplary natural communities, and large forest blocks;

  - Continued funding for the research, identification, designation, and formulation of appropriate management guidelines necessary to protect these areas;

- Coordinated expansion of natural resource management programs with other public and private interests concerned with the management of natural, cultural, and historical areas; and

- Continued development of trail opportunities for both non-motorized and motorized recreation.

B. Preservation Areas

General Strategy:

In accordance with Sections 7-131d and 23-73, et seq., of the Connecticut General Statutes the goal of the state is to acquire the most important land and water resources. However, acquisitions costs, competing land uses, competing demands on the state budget, decreasing federal support, and intensifying demands of resource management make it clear that acquisition will not be the only tool required to protect natural resources in the future. Coordinated state, regional, local, and private efforts combining acquisition with easements, public education, regulation, and technical assistance to landowners will be increasingly vital to ensure that natural resource systems receive adequate protection.

Due to the critical nature of their resource, Preservation Areas should be managed to the degree feasible as no-build areas and no-net-loss areas. Preservation areas are defined as: existing rivers and water bodies, tidal and inland wetlands, Class I type reservoir lands and wellhead Lands (within a minimum 200-foot radius of community wells) not in water utility ownership, habitats of state endangered, threatened and special concern species, natural and archeological areas of regional and statewide significance, agricultural land where development rights have been acquired, floodways within the 100 year flood zone, and open space areas designated in local plans and approved by local legislative bodies.

- **Policy:** Foster the identification of significant resource, heritage, recreation, and hazardous areas of statewide significance and advocate their protection by public and quasi-public organizations in their planning and investment decisions. Avoid support of structural development except as directly consistent with the preservation values, and

  - Target for protection these resources in public acquisition programs;

  - Do not cause or promote expansion of development into these areas other than activities that may be ancillary to the basic open space or environmental resource values;

- Pursue plans and proposals not consistent with the preservation values of an area only when there is a lack of available alternative sites and there is an overriding public benefit; and

- Incorporate into projects occurring within or adjacent to these areas, site planning, architectural, or design restrictions, land use restrictions, buffers or fencing appropriate to protect and manage the area and to prevent subsequent pressure for additional development or uncontrolled access.

Wetlands:

Development pressure on wetlands continues to be an area of concern. There needs to be a better understanding of what buffer areas are adequate to protect wetlands and associated resources. Mitigation may be used when there is no feasible means of leaving wetlands undisturbed. Mitigation projects should be monitored to ensure that wetland functions are being properly replaced, and the results are incorporated into future mitigation planning.

➢ **Policy:** Seek to achieve no-net-loss of wetlands and watercourses through development planning that avoids wetlands whenever possible, prevents or minimizes pollution or other environmental damage to wetlands and watercourses, and provides for compensatory mitigation in the following order or priority:

- Restore, enhance and create productive wetlands or watercourses;

- Monitor effectiveness of wetland regulations, identify the most environmentally significant wetlands, and continue to train and assist Connecticut's municipal inland wetlands agencies in understanding the significance of wetlands and watercourses;

- Monitor the long-term viability of mitigation approaches, and evaluate possible wetlands banking as a tool to help achieve the no-net-loss policy; research interactions between wetlands, watercourses and buffer areas; and

- Continue to provide state guidance regarding the regulation of activities outside of wetlands and watercourses.

Floodways:

Floodways represent the high velocity flows within the overall 100-year flood plain. Incursions into this area not only present significant risks to the structures and occupants during a flood, but also may increase the risks to other structures in

the floodplain by increasing water surface elevation. In addition obstruction that are swept downstream can cause an obstruction to flood waters with an increase in flood levels behind such obstructions. A comprehensive, integrated, flood prevention program and an early warning system with appropriate measures to remove existing structures that incur repeated flood damage or cause adverse flooding impacts and to avoid new development are needed to reduce flood damage.

- **Policy:** In order to prevent the loss of life and property in the floodway:

  - Enforce state channel encroachment line statutes and encourage municipalities to establish stream channel encroachment lines to stop inappropriate development and ensure that all new development and redevelopment projects which impact a floodway are in compliance with local, state, and federal statutes and regulations;

  - Construct dikes, channels, dams, and barriers where such works offer the only feasible and prudent solution to correct an existing flooding problem and are consistent with local, state, and federal floodplain and environmental statutes and regulations;

  - Acquire storm-damaged coastal and riverine areas, where appropriate, to increase public access and to prevent rebuilding;

  - Inspect and regulate construction, operation, and maintenance of dams to ensure public safety from the hazards of dam failure; remove obsolete dams in order to restore and enhance the environmental qualities of rivers, and continue support for the state-owned dam repair program and the cost sharing program with municipalities for the repair of municipal-owned dams, which programs serve public safety and ensure the availability of water-based recreation opportunities;

  - Promote agricultural, recreational, and open space uses wherever appropriate; and

  - Encourage a watershed approach to flood control including land use planning to avoid increases in stormwater runoff and stormwater management plans which are coordinated throughout the watershed.

Lake Resources:

Lakes and ponds across Connecticut provide access for fishing, swimming, boating, and wildlife habitat. By increasing residential property values and recreation expenditures into the local economy, Connecticut's lakes are also important economic resources. The benefits Connecticut enjoys from its lakes are directly related to their water quality. However, Connecticut's lakes face many issues that are deteriorating water quality and inhibiting their uses.

Among the threats to Connecticut's lakes are invasive plants. In 2003, aquatic non-native invasive plants were specifically listed in legislation as plants that are illegal to sell and transport in Connecticut. Other threats to lakes include eutrophication, a process that occurs when a lake becomes more fertile from nutrient laden runoff, resulting in problematic weed and algae growth. As Connecticut becomes increasingly developed, controlling and abating eutrophication will continue to be a major issue. Monitoring sanitary conditions at public bathing beaches has become more consistent over the past several years. The information provided from these surveys indicates that sanitary water quality of lakes is an issue that will need to be further assessed and managed to assure that Connecticut lakes meet public health standards for contact recreation. In addition to water quality issues, Connecticut lakes are increasingly used for recreation. This increased demand for lake-based recreation has amplified public safety concerns and user conflicts.

- **Policy:** Manage Connecticut lakes and associated watersheds to enjoy optimal water quality and recreational benefits.

    - Provide technical assistance and support to communities for lake studies, restoration projects and land use planning;

    - Develop programs to control invasive plants;

    - Develop and support programs to assess lake water quality for trophic trends and sanitary conditions and the presence of non native invasive plants; and

    - Assess the recreational demands for lakes in order to help resolve public safety and use conflicts.

Long Island Sound:

Long Island Sound is an invaluable ecological, recreational, and economic resource. It is under serious stress from many sources and requires a significant interstate commitment to remedial measures. It experiences severe oxygen starved conditions caused by nitrogen discharges from wastewater treatment plants, nonpoint runoff and atmospheric deposition. Through bi-state cooperation with New York, the retrofitting of wastewater treatment facilities with new technologies is being implemented to reduce the amount of nutrient pollutants that

are discharged to the Sound from sewage treatment facilities. It is estimated that as much as $53 million per year for 15 years will be needed to complete this program of nitrogen removal. Concurrently, the management of nonpoint sources and atmospheric depositions of nitrogen must be addressed.

Public access to Connecticut's rivers and Long Island Sound should be expanded and improved, especially in light of major, continuing public investments to restore the quality of these resources. The continuing rise in sea level, which may be accelerating due to global warming, will eventually threaten a variety of man-made and natural resources. Planning efforts must address ways of protecting or replacing these resources.

- **Policy:** Promote the objectives of the Long Island Sound Restoration Program:

  - a) Improve dissolved oxygen (reduce hypoxia extent and occurrences)
    b) Lower toxic contamination
    c) Lower pathogen contamination
    d) Reduce floatable debris
    e) Restore the health of living marine resources
    f) Maintain public involvement and education, and
    g) Avoid habitat loss and water quality degradation from land development.

  - Support state, regional, local and interstate efforts to protect and restore vital coastal habitats and resources, such as salt marshes, beaches and coves.

  - Undertake development activities within coastal areas in an environmentally sensitive manner consistent with statutory goals and policies set forth in the Connecticut Coastal Management Act. Emphasize public access to the waterfront and the priority of water-dependent uses in waterfront development.

  - Consider the projected rise in sea level in the location, design, and protection of development to ensure continued usefulness of potentially impacted properties and utilities and to avoid unnecessary future costs. Where possible, avoid construction of structures such as seawalls that hamper the long-term functioning of vital coastal resources. Identify resource areas likely to be at risk and begin public discussion of options available to lessen or manage the risks.

- Restrict additional development on offshore islands to preserve their resource and habitat value and to minimize exposure to coastal hazards.

Long Island Sound is a 1,300 square mile resource that has often been overlooked as a food-producing region. The naturally occurring, as well as cultivated (aquaculture) resources of the Sound, produce commercial seafood catches valued at $40 million to the fishermen "at dockside" and over $100 million to Connecticut's economy. Another significant component of seafood production from the Sound is represented by the sport fishery catches of marine recreational anglers. Further, Connecticut is also home to an offshore fishing fleet in New London County which fishes Atlantic waters outside of Long Island Sound

The Connecticut oyster industry has experienced resurgence in part due to the restoration of beds. Production has varied from 50,000 to 80,000 acres under cultivation.

Due in large part to the Long Island Sound restoration program, water quality has improved. But, Connecticut must continue to restore and protect the quality of Long Island Sound and to manage the marine resources to ensure future seafood production capability.

- **Policy:** Promote Connecticut's commercial and recreational fishing and aquacultural industries consistent with marine productive capacities.

  - Monitor and regulate shellfish beds and the harvest of shellfish species. Advise municipalities concerning sustained yields.

  - Eliminate shellfish closure areas by upgrading water pollution control facilities and reducing non-point sources of pollution.

C. Conservation Areas

General Strategies:

Conservation Areas represent resource lands for the production of food, wood, water, and mineral, or are important for sustaining native flora and fauna and the landscapes essential to scenic and recreational enjoyment. Generally, some development may occur if it is in a form that is compatible with the resource that is to be protected. The exact nature and extent of such development will vary depending upon the character of the resource as are set forth in the policies and strategies below.

Conservation Areas are defined in this plan as the following areas: Class II type reservoir lands and aquifer protection areas and other high yielding aquifers that

are not Existing Preserved Open Space or Preservations areas regardless of ownership, prime agriculture lands that have not been protected by public actions, contiguous large forest blocks, significant sand and gravel resources, historic areas, trap rock ridges, greenways, the flood fringe of the 100 year flood plain, scenic and recreation river corridors, and areas protected by conservation easements. Because of the critical importance of water supplies to human health this topic is discussed under Principle # 5.

- **Policy:** Plan and manage for the long-term public benefit the lands contributing to the state's need for food, fiber, water and other resources, open space, recreation, and environmental quality and ensure that changes in use are compatible with the identified conservation values.

  - Promote research, education, resource management, regulations, financial and technical assistance or public acquisition as necessary to achieve proper use and protection;

  - Undertake or support only those uses that are compatible with the resource or hazard of concern, consistent with evaluations of both direct and secondary impacts;

  - Demonstrate the lack of alternative sites, overriding social or economic concerns, and the lack of any reasonable alternative public or private uses for any proposal which is clearly and significantly incompatible with conservation; and

  - Include mitigation measures necessary both to protect against degradation and to enhance environmental quality.

  - Where development projects will affect natural areas or recreational areas;

  • the resource and environmentally sensitive areas should be incorporated into an undeveloped open space or passive recreation portion of the property;

  • site planning, architectural or design restrictions, and the use of development restrictions, buffers or fencing controls should be undertaken, where appropriate, for resource protection, prevention of subsequent pressure for additional development, or uncontrolled access;

  • any unavoidable loss of such areas should be compensated for by restoration or creation of replacement resources as appropriate.

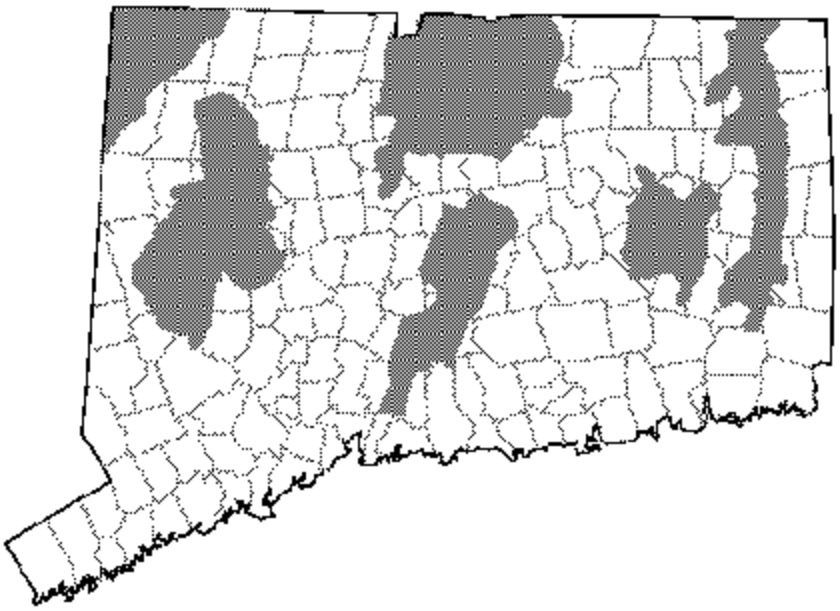
Agriculture:

Farmland has contracted from 80% to 12% of the area of the state during the past one hundred years. While agriculture in Connecticut has been enhanced through the greenhouse and bedding industry, which don't require prime soils, soil based agriculture is now confined to the best remaining farmland soils that have not been preempted by competing land uses. Connecticut's agricultural activities have evolved from extensive subsistence cultivation to fewer, larger, and better operated commercial farming operations. To retain soil based agriculture as a viable industry in the state, farming must continue to be financially attractive for younger generations or farmland acreage will continue to decline.

Viable farms promote the economy, provide jobs, protect valuable wildlife habitat and recreation, and add variety to the rural landscape. Conversely, mismanagement can result in loss of productivity and environmental impacts from erosion, odors, pesticides, and over fertilization. Government programs in education, conservation practices, technical and financial assistance, purchase of development rights, and agricultural value taxation have promoted farming as a livelihood and have slowed but not halted the loss of agricultural land to development. Connecticut lost 12.1 percent of its farmland (357,154 acres) from 1997 to 2002, the largest percentage of any state, according to the 2002 USDA Census of Agriculture.

In recognition that the state's growing population and expanding economy have had a profound impact on the ability of public and private sectors to maintain and preserve agricultural land for farming and food production, the General Assembly declared that "unless there is a sound, state-wide program for its preservation, remaining agricultural land will be lost to succeeding generations and that conservation of certain arable agricultural land and adjacent pastures, woods, natural drainage areas and open space areas is vital for the well-being of the people of Connecticut." (C.G.S. Section 22-26bb)

Stewardship of prime farmland is fundamental to a sustainable agriculture. Agricultural land preservation strategies compete with other social and economic needs. Areas where agriculture is viewed as the best long-term land use need to be further recognized in public policies.



Important Agricultural Areas: Source: CT Resource Protection Project

In accordance with Section 22-26cc of the Connecticut General Statutes, a goal of the state is to acquire development rights to 130,000 acres of farmland of which at least 85,000 acres are prime or important cropland soils that can be devoted to the local production of food products. This amount of acreage is estimated to enable the local farm industry to meet 50% of the annual demand for fresh milk and 70% of the in-season demand for fresh fruits and vegetables. As of December 2003 the Connecticut Farmland Preservation Program had preserved 29,875 acres on 210 farms. This land provides food, as well as open space, habitat, and scenic values. Given rising land values and intense development pressures on farmland in the state, the purchase of development rights is a vital strategy to secure protected and affordable farmland that will be available to growers in the future. The purchase of development rights is also an important investment in agricultural business since the funds paid to farmland owners for their development rights is often invested in acquiring additional agricultural lands, new or improved infrastructure and to reduce farm-related debt.

An in-state food production capability offers several benefits. There is less reliance on the highly specialized, mechanized, and energy intensive out-of-state production. There is the likelihood of improved availability, freshness, and lower costs through local production. Active agricultural lands offer related benefits of open space variety, a more diverse rural

economy, and maintenance of Connecticut's quality of life. Shorter farm to market trips have beneficial air quality and energy consumption impacts. There is significant economic benefit to Connecticut in keeping dollars spent on food within the state.

State and local governments should strive to make a priority of agricultural sustainability, land preservation, and the promotion of conservation practices on private land. Connecticut should encourage the expansion of agricultural biotechnology research and development as this area has the potential to generate economic and employment growth within the state.

It is the goal of this plan to maintain and support the viability of the agricultural sector to increase a long-term, in-state food producing capacity: 1) through conservation and preservation of prime agricultural lands, and 2) through the creation of incentives that will continue to support agricultural business.

- **Policy:** Protect prime agricultural land in sufficient quantity to ensure a long-range food production capability within the state. Consider food production as the most appropriate use for prime agricultural lands in priority farm preservation areas. Further, protect all active agricultural lands unless and until the land is no longer viable for agricultural uses.

    - Prime agricultural lands should be maintained for food production to the maximum extent feasible by:

        • Minimizing development pressure created by the placement and design of infrastructure and major public facilities;

        • Permitting state actions that result in irreversible conversion to other uses only when there is a demonstrated overriding need, alternative sites are not technically feasible or economically justified, and the impact of conversion is weighed;

        • Recognizing prime farmland in regional and municipal plans and regulations and promoting such preservation techniques as the transfer of development rights, use of land trusts and cluster development,

        • Continuing support and funding for the State's Purchase of Development Rights program and matching available federal and private funding with the objective of preserving

130,000 acres. Give priority to the purchase of farmlands that are producing farms or have potential for excellent agricultural production, are in jeopardy, are in high density agricultural land use areas, are adjacent to and compatible with state, local or other protected open space resources, and are not in conflict with exceptional areas of state or regional economic significance.

• Encourage municipal plans of development that support policies to enhance farm viability and prioritize farmland preservation as an economic development strategy.

➢ **Policy:** Enhance the economic and environmental viability of farms.

o Protect existing agricultural land and oppose the introduction of infrastructure except to solve existing problems.

o Label, locally process and cooperatively market locally grown products both in-state and out-of-state, acquire local products in state-run food programs when feasible, and permit local farm retail stands to sell locally grown products.

o Assure the availability and appropriate use of farm credit through the U.S.D.A. Farm Services Agency and Small Business Administrations and the Connecticut Development Authority. Study the development of an entry-level program for beginning farmers that may combine grants and loans to assist in overcoming the large initial investment of starting a farm.

o Encourage the use of soil and water conservation practices and appropriate structural management practices that retain productivity and lessen on-site and off-site impacts of erosion, sedimentation, and animal wastes. Assist farms in the development of resource management plans that are located in aquifer protection areas and in water supply watersheds.

o Support the growth of agricultural technology research and
development and agricultural technology businesses. The state should continue the education, research, and development work of the Connecticut and Storrs

Experiment Stations and the UCONN College of Agriculture and Natural Resources to develop new crops and plant strains, to promote season-extending techniques such as cold frames and greenhouses, and to improve insect and weed control practices that will safely increase crop yields per acre.

- Support programs promoting proper application of nutrients and pesticides to crops. Encourage the use of least toxic pesticides and herbicides through Integrated Pest Management and Best Management Practices. Promote safe reuse or disposal of animal wastes.

- Encourage sale/lease of hunting and fishing rights to preserve farmland where consistent with Department of Environmental Protection programs.

- Develop a statewide policy for renting state-owned land for farming where feasible and appropriate.

- The state should consider surveying state owned lands for prime and important agricultural soils and may consider the viability of these lands for agricultural use.

- Continue to support the State's Environmental Assistance Program that allows cost-sharing for capital improvements to waste systems on farms.

- Continue to support the State's Farm Reinvestment Program that helps fund capital improvements that allow for the expansion of production capacity or diversification of farm business.

Forest Resource:

Connecticut's forestlands are increasingly fragmented with 80% of the resource divided among thousands of owners. This inhibits active conservation and management of forests to meet such needs as timber production, watershed protection, wildlife habitat, scenic vistas, sequestering carbon in plant matter and soils, and protection of air quality. There is a growing belief that forest blocks of 15,000 acres are the minimum size necessary to enable forest systems to not only survive hurricane, ice storms, and other catastrophic events, but to support sustainable, breeding populations of various species of birds and roaming mammals. In order to sustain the broadest diversity of plant and animal species, forests that are resilient to natural and human-caused catastrophes, and the widest range of outdoor recreational experiences, the state needs to work with municipal

and private interests to protect and to maintain several large, contiguous blocks of forest lands.

- **Policy:** Retain healthy, vigorous forestlands and achieve sustainable yields of forest resource-based benefits through scientific management of these resources.

  - Develop an information system sufficient to analyze forest resources, forest health and the stresses on these resources, forest productivity, and consumption of forest products.

  - Encourage sound stewardship of privately owned forestland through:

    - education, technical advice and assistance to private landowners in sound management practices;

    - provision of federal and/or state cost-sharing assistance for forest management where there is a direct public benefit;

    - provision of tree seedling stock at cost.

  - Assist municipalities in managing such resources as reservoir lands, town forests, and urban street and park trees. Encourage use of licensed arborists, when appropriate, for these activities. Provide specialized assistance to local fire departments in prevention and control of forest fires.

  - Support forest resource-based industries and ensure that best available management practices are applied when harvesting forest products.

  - Actively manage state-owned forestland to maximize multiple benefits while improving the overall health and vitality of the forest.

  - Restore native plan communities where necessary through such methods as eradications or control of invasive plant species.

Watersheds and Rivers Management:

Watersheds are natural drainage divides that vary in size from drainage for backyard ponds to all the tributaries of the Connecticut River. An effective watershed plan recommends goals and policies to guide future development so as to minimize impact on both water quality and natural resources; directs available

technical and financial resources to restoration and enhancement needs; facilitates partnerships to promote stewardship; and, recommends alternative actions and measures to track progress. There are over 2,500 watercourses in Connecticut. Many are subjected to numerous and competing demands on water use and numerous and conflicting demands from adjacent land uses. Management decisions involving river resources must be made comprehensively and from an overall basin perspective. Integrated water use, water quality, land use data, and the instream biotic resource and habitat needs must be considered in river management decisions. In recognition of the Connecticut River's unique value, the Connecticut River Gateway Commission and the Connecticut River Assembly have been created and charged with special multi-town land use management responsibilities.

- **Policy:** Plan, manage, and regulate water resources on a watershed basis (including interstate cooperation where appropriate).

  - Protect the ecological, scenic and recreational aspects of river corridors utilizing the statutory Protected Rivers, Multiple Use Rivers, and Rivers Restoration programs to comprehensively assess and balance competing land uses within such corridors;

  - Restrict structural development to the least scenic areas or to areas already significantly altered;

  - Prohibit clearing of wetland and watercourse vegetation that serves a variety of ecological functions and re-vegetate scenic areas that are denuded;

  - Screen visible structures;

  - Retain right of access and control unauthorized access to potential recreational areas;

  - Protect and restore aquatic habitats; and,

  - Encourage the protection, restoration and/or enhancement of riparian area resources and waterbodies critical to long-term watershed health.

Floodplains:

The 100-year floodplain is composed of two areas: the floodway, previously address under Preservation Areas, and the flood fringe, any adjacent land needed to discharge the 100-year flood. Inappropriate development with the flood fringe can result in economic losses on the local, state, and federal level as well as losses to life and property in the event of a flood.

➢ **Policy:** Prevent inappropriate development in the flood fringe by ensuring that projects are in conformity with local, state, and federal statutes and regulations, and that:

- Adequate preparedness (forecasting, warning systems, notification, evacuation, sheltering) will ensure protection of life and continuance of essential services;

- The type and scale of development will not severely disrupt or burden the economy during flood periods;

- Future public expenditures will not be required for flood control facilities. All new development will incorporate design features which prevent flood damage to either the development or to adjacent properties. Environmentally acceptable local flood structures will be incorporated in the project design and financed through benefit assessments by the identified flood fringe users; and

- Adequate flood insurance protection can be obtained.

Historic and Cultural Resources:

Historic buildings are an important part of the fabric of our urban areas, and their preservation can become a focal point for reviving blighted areas. In those instances where preservation may not complement the community's social and economic goals, historical and cultural values must be carefully weighed in decisions about which resources to retain. Opportunities exist to increase economic and other benefits by promoting cultural events and preserving and interpreting settings that display Connecticut's cultural heritage. Historical resources now contribute significantly to tourism in the state and can make a greater contribution with proper recognition and management.

Metropolitan areas have the most acute shortage of natural resource-based recreational facilities and lack available sites for many recreational needs. In urban centers, both park development and rehabilitation are especially needed, and should be used to support neighborhood revitalization efforts. Promoting awareness of conservation and natural resources among urban residents is an important concern.

➢ **Policy:** Highlight, protect, and celebrate Connecticut's diverse cultural heritage.

- Heighten awareness of cultural opportunities and their importance to the quality of life and the state's economy. Support

the State Heritage Park Program and tourism promotion efforts focused on historic and cultural resources.

o Support programs that assist local artists and arts organizations, arts education, and increased opportunities for student artists.

o Continue to identify, interpret, and protect significant archaeological and architectural resources.

o Identify those elements of landscapes and townscapes of special significance or aesthetic noteworthiness and encourage their protection and participate in protection strategies being developed by federal, state, regional, and local interests such as the Quinebaug and Shetucket Rivers Valley National Heritage Corridor.

o Encourage reuse of historically significant buildings and support proposals in proximity to historical and cultural resources to the extent that these reuses or proposals:

• Are compatible commercial, educational, or residential uses that aid in long-term preservation and that will not involve significant alterations and replacements that detract from the appreciation of the historical and cultural values;

• Will not introduce visual, audible, or other elements so significantly out of character with the structure and setting as to make public access and enjoyment unreasonable or to make unfeasible their use and preservation by compatible uses.

o Development and rehabilitation of urban parks and recreation areas accessible to low-income, disadvantaged, and transit-dependent persons; and

o Identification and protection of remaining natural areas within cities and making these the foci of environmental education programs, including reclaiming derelict urban lands and restoring natural features where feasible.

Mineral Resources:

Mineral resources are natural deposits of limestone, sand, gravel, and quarry aggregate for which extraction is or will be commercially feasible and regarding which it can be demonstrated by geologic, mineralogical or other scientific data that such deposits have significant economic value to the state. The objective is to

maintain self-sufficiency in mineral commodities at the lowest cost with minimal environment impact.

- **Policy:** Identify and maintain the long-term availability of mineral resources and avoid irreversible commitment of potential resource areas to other uses until there is an opportunity to fully evaluate and potentially exploit their long-term resource and economic value to the state. Ensure the ability to extract mineral resources in an economical manner consistent with all environmental requirements and plan for the reuse of these areas after minerals have been extracted.

    - Regional and municipal land use programs should include the identification of potential mineral resources of local and regional significance and recommend a program of sequential land use for these areas, and

    - Ensure that proper erosion and sedimentation controls are utilized and that reasonable reuse of the site can occur after extraction.

Multipurpose Resource Lands:

While regulatory programs protect specific resources like wetlands, interactions of these and other resources in the landscape are often of greater significance than any single component. More attention to natural systems and broad principles of environmental protection are needed in state and local plans to help ensure the long-term functioning of these systems. The most critical environmental areas and resources of statewide significance must be identified and protected from disturbance to the maximum extent possible. Areas holding multiple resources should receive special consideration. An integrated natural resources database providing information on such areas should be made widely available as a tool to assist state, regional, and municipal agencies in making informed development decisions.

Greenways can be a simple greenbelt along a stream, a bikeway along a former railroad, or a broad swath of land representing natural corridors that contain or link important natural or cultural resources. Legislation on ridgeline and river segments highlights the importance of certain corridors in the landscape. A greenway link can enhance the value and attractiveness of major outdoor recreation areas or cultural resources. The Greenways Act (P.A. 95-355) declared the state's interest in creating a statewide greenways system.

- **Policy:** Encourage management of natural resources that preserves the diversity of habitats and species and achieves sustainable yields of renewable resources.

- Continue DEP's comprehensive inventory and monitoring program of the state's natural resources. Maintain up-to-date tools to analyze the health of natural resources systems and stresses on them and to enable easy sharing of this information. Encourage interagency and cooperative efforts, such as the Connecticut Resource Protection Project, to identify and develop information about the most critical of these resources and to devise innovative tools for their protection. Promote resource-based decisions in state and municipal planning and joint resource planning efforts across municipalities and all levels of government.

- Maintain the species diversity of Connecticut's flora and fauna. Avoid the loss of, or serious adverse effects on, any protected species or its essential habitat and mitigate all clearly unavoidable adverse impacts on such areas. Alter state-funded projects when necessary to avoid such effects.

- Enhance the public's understanding of resource conservation and natural diversity, and foster beneficial land use practices through educational programs and demonstration areas.

- Avoid significant adverse impacts to essential fish and wildlife habitats and migration corridors in permitting and supporting development projects.

- Encourage and promote the formation of greenways and acquisition or protection of contiguous tracts of open space for recreational and natural resource management purposes. A statewide system of greenways should tie to urban areas, link existing regional trail systems and major open space holdings, and use abandoned rail rights-of-way and other available corridors. (See Appendix showing officially designated greenways.)

D. Rural Areas

The western and eastern uplands of the state and areas along the lower Connecticut River offer some of the last major rural expanses in the heavily urbanized Washington-Boston corridor. These places embrace much of the state's remaining active farmland, vital environmental resources, and numerous historic villages and town centers. However, the urban-rural distinction increasingly blurs as urban scale development spreads farther into the countryside. Many rural towns now grapple with development controls ill-suited to the task of preserving the community character that makes them unique and attractive. Uniform large lot zoning, road standards based mainly on traffic movement, strict on-site parking requirements and similar measures replicate a creeping suburbanization of the landscape, degradation of valued natural and cultural resources, loss of prime

agricultural land, increasing dependence on the automobile, and perhaps even growing social isolation. Development at “in between” densities (greater than one half acre to approximately on and a half acre lot per dwelling) tends to increase the demand for public services but make their provision inefficient and expensive. Accommodating future economic development, job creation, industrial diversification, needed social services and availability of public transportation while maintaining the desirable qualities of rural towns is thus a critical planning concern at state, regional and local levels.

Rural area goals as set forth in Executive Order No. 31 (October 1980) are as follows:

- To preserve and protect the land, water, farm open space, and forest resources which characterize the state's rural areas, and effectively coordinate such preservation with the needs of rural residents for employment, housing, public services, and accessibility to commercial and cultural facilities

- To improve the quality of life for the residents of the rural areas of the state, ensure that rural citizens have adequate access to health care, education, human services, housing, and other basic programs and services provided by both the public and private sectors, and to help overcome isolation, discrimination, and other problems which often face the elderly, people with disabilities, low and moderate income residents, and minorities in rural communities;

- To ensure appropriately scaled economic development in rural communities which provides an adequate financial base and range of employment opportunities but which is compatible with the varied economic, social, and environmental needs and concerns of rural areas; and

- To simplify the administrative procedures which accompany state and federal programs and regulatory functions so that they more appropriately reflect the administration and planning capacities of rural communities.

This Plan seeks to properly scale responses to identified rural economic and social issues and to concentrate development activities within or adjacent to traditional village areas in order to maintain rural character and to protect environmentally sensitive places. Techniques such as open space development (cluster development with its primary aim the preservation of open space), regulations to encourage new development that mesh with historical development, mixed use development in community centers, and traditional street networks are some of the methods to maintain rural character and the resources that define that character.

Investment in infrastructure has shaped community character. Public sewer and water systems and highway improvements support urban scale and densities that are not consistent with rural character. Recent advances in on-site wastewater treatment technology have the potential to complicate greatly the issue of infrastructure in rural land use, even though their use will continue to be limited by soils and groundwater conditions. Their greater treatment efficiencies may enable substantially larger and more intensive development projects without conventional sewer service. Yet, they may also provide communities more flexibility in applying such techniques as cluster development and community centers.

Development and infrastructure in rural areas should be guided by the following guidelines:

- Encourage development in Rural Lands of a form, density, and location compatible with the carrying capacity of the natural environment, and which avoids the need for large scale and costly urban infrastructure for water supply, waste disposal, and transportation;

- Encourage rural plans and land use regulations to protect the rural environment through controls and techniques, such as cluster subdivisions, that direct development patterns in conformity with rural values. Further, rural communities should pursue a watershed planning framework that encourages inter-town cooperation to promote water quality and natural resource protection;

- Encourage the concentration of higher density or multiple use development into Rural Community Centers where practical and consistent with historic character; support industrial and business development within Rural Community Centers only of a scale and type which respond to an existing local employment need without inducing major development;

- Promote development and refinement of design and engineering standards for community infrastructure and facilities that are consistent with historic rural character and natural resource values, while adequately meeting public health and safety concerns;

- Ensure new projects are consistent with “rural design” principles and do not have unacceptable adverse impacts upon districts and sites of historic significance, important natural areas or concentrations of prime farmland;

- Supporting industrial and business development within Rural Community Centers only of a scale and type which respond to an existing local employment need without inducing major development;

- Foster application of best available design practices and control methods to nonpoint water pollution sources;

- Give priority to transportation improvement projects that recognize and reinforce the viability and character of village centers, particularly with regard to pedestrian access and safety;

- Encourage greenway projects that provide links both to and within Rural Community Centers and that provide alternative transportation and recreation opportunities;

- Locate highway interchanges in urban rather than rural areas to support the concentration of growth in those areas;

- Protect the capacity and safety of existing state roads through cooperative efforts with municipalities to control the number and location of access points; Improve traffic flow on existing highways, where feasible, as a preferred alternative to the construction of new highways;

- Protect significant natural areas, resources and ecological systems in order to protect and enhance the local economy and quality of life;

- Vigorously pursue sewer avoidance programs and limit development to those uses and densities that ensure indefinite functioning of on-lot or small community water supply and waste disposal systems, review zoning regulation and eliminate insufficient lot sizes, assure sufficient oversight of the permitting and maintenance of septic systems to ensure that on-site septic systems function indefinitely, and encourage enactment of local ordinances that require septic tanks to be inspected every three to five years and pumped out as needed; further, limit of water pollution control facilities to project costs required to correct an existing pollution problem (as environmental carrying capacity depends on many factors, site-specific factors and proper installation and maintenance have to be considered in any decisions as related to actual lot size);

- Support application of advanced on-site wastewater treatment technologies only when their long term functioning is assured and only where the development they support meshes with and complements existing rural patterns and avoids scattered development; in particular, they may be necessary:

    • To develop affordable housing in conformance with local and regional plans,

    • To support higher intensity uses and economic development within Rural Community Centers, or

• To enable cluster development to preserve environmental resources;

o Support the introduction or expansion of public facilities or services only when there is a demonstrated environmental, economic, social, or general welfare concern and then introduce such services only at a scale which responds to the existing need without serving as an attraction to more intensive development. An exception may be made to assist municipalities in the provision of infrastructure to service a particular site when: a) there is a definite commitment from a firm to relocate to the site in the immediate future; b) substantial employment will result from the relocation; c) a feasible site is not available within a development area; d) a project plan is prepared which sets forth the costs and the anticipated economic, social, and environmental impacts including availability of affordable housing; and e) there is no overriding environmental condition or concern that would preclude such service.

o Limit the extension of public water supply infrastructure to rural areas by using individual wells where well capacity is adequate.

Growth Management Principle #5

Protect and Ensure the Integrity of Environmental Assets Critical to Public Health and Safety

Human health and welfare cannot ultimately be maintained in an unhealthy natural environment. Healthy ecosystems provide a range of irreplaceable benefits; habitats for diverse animal and plant species, forest products and other economic goods, water supply sources, regulation of climate and flood flows, air and water purification, nutrient cycling and a wide range of open space and recreation opportunities. Protection of functioning natural systems is vital to maintaining our quality of life, which is in turn a key element in our health and economic progress.

Threats to habitats and ecosystems are among the greatest environmental problems Connecticut faces. While the entire Connecticut landscape reflects centuries of human activity, recent alterations are more permanent and disturbing. Dispersed development has eliminated critical habitats, fragmented what were

previously large undeveloped blocks of land, and altered the composition of species. Even development adjacent to natural areas can introduce stresses, such as increased predation by domestic animals or increased siltation that adversely affect important species. Development can interrupt important wildlife travel ways and isolate small populations of species, reducing those populations' chances for long-term survival.

In addition to the decline or removal of native species, the introduction of non-native or "exotic" species and their subsequent uncontrolled growth can have serious, long-term consequences, as in the cases of purple loosestrife, gypsy moths, and zebra mussels.

Conservation of resources implies more than setting aside the most critical habitats or ecosystems that were discussed in the previous section. It also means more than regulating effects on individual resources case by case. It requires that we recognize the finite nature of our natural resources and bend our creativity to ensuring that our activities do not deplete or unduly damage those that sustain us. It also requires that we recognize that the building blocks of natural systems interact in myriad ways, that our understanding of these is often limited, and that choices that affect them must be carefully considered. These principles must be integrated into all of our planning activities.

While protection of open space is an important part of ecosystem protection, it also serves to improve on Connecticut's quality of life. Undisturbed landscapes contribute much to the state's attractiveness. Access to natural environments for recreation and contemplation is increasingly important, as such places become increasingly rare.

A. Drinking Water Supplies

Adequate supplies of potable water are necessary to protect public health and to continue economic growth. A goal of this plan is to effectively establish, protect, and manage sufficient high quality water supply sources, treatment facilities, and delivery systems to meet existing and future needs. Current and future sources of drinking water must be continuously protected from intensive development and potentially deleterious land uses.

Groundwater contamination is a serious public health and environmental problem with contamination affecting more than 1,800 public and private wells and over 300,000 people. Groundwater resources essential for current and future drinking water must be identified and protected from harmful land uses and development practices. Nonpoint sources of pollutants from land use are a major threat to surface water and groundwater. Threats include stormwater runoff, erosion and sedimentation, fertilizers, pesticides, and chemical pollutant releases and failing septic systems. In addition, there is a growing concern related to harmful microbial agents—bacteria, viruses, and protozoa, such as Cryptosporidium. The

cumulative impacts of continuing development on both existing and potential water supply watersheds and aquifers can result in deterioration in water quality or the preemption of a site for consideration as a future water supply.

To prevent pollution, the state, regions, municipalities, and water utilities are working to identify and map existing and potential water supplies throughout the state and the land uses that impact them. The goal is to better manage land uses that contaminate waters that replenish surface and groundwaters.

Proactive pollution prevention of drinking water is the first line of defense in the provision of safe drinking water. These proactive efforts may need to be supplemented by treatment technology. Construction of sophisticated filter plants to meet health standards is resulting in significant investments by utilities and costs to consumers.

Although the total statewide yield of existing water supply facilities is adequate to meet existing and much of the future demand, these sources are not evenly distributed throughout the state. Thus, new sources and interconnections are needed to overcome local supply deficiencies.

Surface and groundwater withdrawals, even for uses as essential as potable water, can have serious downstream impacts because of reduced stream flows. In some drainage basins, the allocation of limited water resources among competing and differing water uses is a major concern. The growing need for additional water supplies, waste assimilation, instream flow for biotic resources and riverine habitat, and water-based recreation must be considered when determining the allocation of water resources.

Using existing water wisely, developing new sources, expanding appropriate interconnections between systems, increasing storage capacity, and conservation are all needed to ensure the efficient utilization of Connecticut's natural resources. Water conservation must be an integral part of water supply planning, as it is an important component of protecting against water shortages and of minimizing the social, environmental, and economic costs of developing new water supplies. Conservation will achieve savings in energy, treatment, and capital costs for water and wastewater facilities.

The abandonment of existing sources of water supply due to contamination and for economic reasons is a concern in that an irreplaceable resource may be lost, either as a future source of water supply or as a future open space resource. They should be evaluated for their potential to meet long-term drinking water needs while in the interim providing passive recreation and open space enjoyment.

Lastly, the delivery of adequate, potable water to each household is dependent upon a highly variable water utility industry that frequently does not have the long-term technical, managerial, and financial capability to supply adequate,

potable water through their distribution system. Water supply infrastructure is complex due to the multitude of suppliers. While about 70% of the state's population is well served by the 35 largest water utilities, there are hundreds of small community systems consisting of homeowners associations and small private companies. In addition, there are over 3,800 non-community public water systems; such as schools, industries, day care facilities, restaurants and other commercial establishments that must assume the burden of a water utility in assuring a safe water supply to their patrons. Small community water systems often experience technical, managerial, or financial problems. Their small size makes it difficult to correct deteriorated facilities that require high maintenance and repair expenditures, as they do not have adequate funding to meet these financial needs. Addressing utility needs in a manner consistent with state, regional, and municipal water and land use policies is another issue. The 1999 Needs Survey, conducted for the US Environmental Protection Agency, placed the water supply infrastructure needs at approximately one billion dollars over the next 20 years. The State Water Revolving Loan Program offers some assistance in bringing aging or inadequate delivery systems into compliance with federal water quality standards.

- **Policy:** Protect public health by meeting or exceeding state and federal drinking water standards for water supplies, by preventing the degradation of water supplies through the proactive protection of drinking water sources, and by providing adequate levels of treatment. Use a multiple barrier approach so that all public water supplies meet all drinking water standards.

    - Acquire critical water supply watershed and aquifer protection lands as feasible by water utilities, municipalities, and the state (Class I type watershed lands and areas within 200 feet of a well of a pubic utility serving 1000 or more customers). Enable recreational opportunities when consistent with source protection and where there is adequate oversight.

    - Maintain all Class I water utility-owned lands through Department of Public Health regulation of sale and use, and maintain all similar lands that are currently in state ownership as open space.

    - Prevent state funding of projects on lands that conform to Class I criteria that are incompatible with Class I regulations for surface water supplies because they create subsurface sewage disposal systems, create an intentional or unintentional point or non-point source of contamination, or permanently disturb ground vegetation except as appropriate for watershed, forest, or recreation purposes;

o Encourage new land uses within existing and potential public water supply watersheds and aquifers that are compatible with and operate in accordance with appropriate preservation and protection management strategies. Guide intensive development away from existing and potential water supply watersheds and aquifers and consider the cumulative effects of incremental growth in state, regional, and local planning programs and regulations.

o Maintain inventories and establish monitoring and inspection programs for high risk activities with the potential to threaten or adversely impact drinking water sources including: sites and areas prone to erosion and sedimentation control, underground fuel storage tanks, fertilizer and pesticide usage, drinking water sources lacking minimum setback distances, sites and areas with inadequate stormwater management measures, nonresidential development, and improper road salt storage and application, waste handling, and hazardous materials storage. Coordinate water utility and land use commission oversight through water utility surveys and water utility reviews and comment on land use proposals that may cause pollution.

o Maintain vigilance to ensure that existing, potentially threatening land uses do not harm community water systems in the future by continuing implementation of the Source Water Assessment Program to facilitate:

- Tracking of existing or potential contaminant sources,

- Formulating individual and regional drinking water source protection plans,

- Guiding local commissions in the siting of development projects in sensitive areas,

- Prioritizing source water area inspections, and

- Coordinating water utility and land use commission oversight through water utility survey and water utility review and comments on land proposals that may cause pollution

o Evaluate regional and municipal plans of conservation and development and municipal zoning regulations to promote protective measures with the most stringent measures focused on critical areas, which are those closest to either a reservoir or diversion and its tributaries or a well field. Permit land use types

and intensities that do not require sewer service. Design and manage land uses so that any waste discharges are treated completely on-site without contamination of ground or surface waters. Minimize site disturbance and utilize a site's characteristics for development through the use of cluster zoning, open space, conservation easements, or similar techniques. Continue to build stewardship and a conservation ethic in communities to protect and improve water quantity and quality.

- Avoid sewage collection systems except when essential to solve existing area-wide problems, limit state funding to a level necessary to solve pollution problems associated with existing development to avoid further intensive development on the watershed or aquifer. Disapprove plans for facilities that are excessively sized or that extend to areas where alternative remedial measures are possible.

- Continue to prohibit the disposal of domestic wastewater into existing and potential surface drinking water supply sources and consider wastewater receiving streams only for water supply during emergencies and only when appropriately treated or approved by the Commissioner of Public Health.

- Continue to implement the Aquifer Protection Areas Program to achieve Level A mapping for all existing and potential well fields and to bring into conformance all land uses with state and locally adopted land use regulations. Promote the adoption of model land use regulations and implementation at the local level of aquifer protection programs.

- Site, design, install, operate, maintain, repair, and renovate septic systems to function indefinitely and thus avoid the need to install sewers.

- As a general density guideline for water supply watersheds, require minimum lot sizes of one dwelling unit per two acres of "buildable" area (excludes wetlands). Consistent with the carrying capacity of the land, encourage cluster-style development to lessen impervious surfaces and avoid development in more sensitive areas.

- Encourage municipalities to enact local ordinances that require septic tanks to be inspected every three to five years and pumped out as needed.

- Through public education for septic system users, reduce disposal of materials that could threaten system operations and water quality.

- Manage 1) aquifer protection areas within Existing Preserved Open Space, Preservation Areas, Conservation Areas and Rural Lands; and 2) all water supply watersheds by not:

• Creating an intentional or unintentional point or non-point source of contamination without adequate man-made interception and control safeguards, as approved by the Departments of Public Health and Environmental Protection,

• Disturbing vegetation for more than one growing season, or permanently disturbing ground cover vegetation in areas with slopes greater than 5%, except as associated with access to or underlying a habitable structure, or to facilitate management of the area consistent with the above requirements,

• Allowing subsurface sewage disposal systems in areas with soils of twenty inches or less, or in poorly or very poorly drained soils,

• Creating a demand for new state highways, and

• Introducing water supply mains, sewer collector systems or advanced design wastewater treatment systems only after a thorough evaluation of all private and public alternatives determines these systems are the only feasible solution to an existing pollution problem, and the facility design and capacity will not induce further intensive structural development with attendant surface runoff threats to water supply quality. Plans for facilities that are excessively sized or that extend to areas where alternative remedial measures are possible shall not be approved.

- Encourage the use of water supply watershed protection handbooks such as “Protecting Connecticut’s Water Supply Watersheds: A Guide for Local Officials”, and “Protecting Connecticut’s Groundwater: A Guide to Local Officials” for regulatory and nonregulatory measures to protect drinking water sources.

➢ **Policy:** Identify water supply resources sufficient to meet existing demand, to mitigate water shortages during droughts, and to meet

projected growth and economic development over at least the next 50 years.

- Use the individual Water Utility Water Supply Plans, Water Supply Management Areas plans, DEP high yield aquifer assessments, and recommendations of the Water Planning Council to identify surface and groundwaters that are needed for water supplies. Pursue a source water protection program that assures continued safe use and availability of waters considered essential for future drinking water purposes.

- Acquire potential well field and reservoir sites and regulate land uses so as to preserve these potential drinking water sources.

- Manage the water quality of potential water supply sources in accordance with Connecticut Water Quality Standards and Criteria adopted by DEP.

- Allocate water resources through DEP's Diversion Permit Process by giving high priority to drinking water supply needs that cannot be met by aggressive conservation efforts after considering other uses and maximizing multiple uses to the extent feasible.

- Prevent plans and projects that irreversibly commit potential water supply resources to other uses. Conduct environmental reviews in accordance with the Connecticut Environmental Policy Act to evaluate direct, indirect, and cumulative impacts.

- Prevent wastewater discharges to streams tributary to potential public water supplies.

- Restore aquifers, where feasible, to enable the use of previously contaminated wells for future water supply. Preserve inactive reservoirs that may be needed in the next 50 years for potential water supply or during water supply emergencies. Promote appropriate interim recreation activities.

➢ **Policy:** Ensure that water conservation is a priority consideration in all water supply planning activities and regulatory decisions. This should include source conservation, demand conservation, increased source and customer metering, pricing policies, education, more rapid repair of leaking pipes, and replacement of water devices with more water efficient devices.

- Identify cost effective conservation measures in the individual water utility plans and the plans of the areawide Water Utility Coordinating Committee.

- Promote implementation of cost effective conservation measures through state agency decisions concerning diversions, water transfers, and financial assistance.

- Promote public education that supports water conservation and the wise use of Connecticut's surface and groundwater resources.

- Encourage public water systems to adopt policies for efficient water use metering, water auditing, reduction of unaccounted for water, and consumer water saving plumbing retrofits.

➢ **Policy:** Promote coordinated and efficient water utility supply and delivery systems and service areas that conform to state and regional plans of conservation and development.

- Promote an efficient and viable public water supply and delivery system for each region: foster the expansion of viable systems, the acquisition of small non-viable systems by larger systems and as required either the interconnection of large and small systems when consistent with state and regional plans of conservation and development or the professional, satellite management of distant, isolated systems.

- Use the Certificate of Public Convenience and Necessity process to ensure that the development of new public water systems will be viable and in accordance with state, regional, and local plans of conservation and development.

- Continue to use funding from the State Revolving Loan Fund to assist troubled but viable water utilities in providing an adequate supply of high quality drinking water.

B. Water Quality

Statewide, the available monitoring data indicates that water quality conditions in Connecticut have improved over the last ten years. Currently, over three quarters of the river and stream miles monitored and assessed by the Department of Environmental Protection support healthy populations of aquatic life. A slightly smaller percentage of monitored waters (69%) meet the strict criteria established for contact recreation where small amounts of water may be ingested as a result of swimming or other recreational activities. Because the DEP focuses monitoring

resources on waters where problems are most likely to occur as a result of proximity to potential pollution sources, the actual percentage of state waters that meet standards is likely significantly higher.

Controls on point discharges of pollutants have been largely responsible for past progress. All municipal wastewater treatment facilities currently achieve secondary treatment and over thirty percent provide advanced levels of treatment to remove nutrients. The number of municipalities with combined storm and sanitary sewer systems that discharge untreated waste to surface waters during storm events is expected to decline to only two by the year 2015. The number and volume of direct industrial discharges to surface waters has also been reduced through recycling, water conservation, and other manufacturing process changes, while the amount of pollutants being released to the environment by those discharges that remain has been greatly reduced through application of advanced treatment technologies.

The goal of the federal Clean Water Act is to restore and to maintain the chemical, physical, and biological integrity of the nation's waters. Adopted Water Quality Standards require all surface and groundwaters to achieve and to maintain swimable/fishable water quality. Aquatic toxicity standards assure that in the future discharges will not contain toxic chemicals that cause acute or chronic toxicity to aquatic and marine life, impair the biological integrity of aquatic or marine ecosystems, or result in an unacceptable risk to human health in long Island Sound. A nitrogen reduction target and a municipal sewage treatment plant nitrogen trading program will help attain healthy oxygen levels in Long Island Sound sufficient to sustain a balanced and productive estuarine community. Although Connecticut's municipal plants contribute to the hypoxia problem, acceptable levels of oxygen will not be achieved without reduction from New York, states up-river from Connecticut, reductions in non-point runoff loads and reductions in air deposition.

While water quality has improved, evidence of past progress should not be cited as a reason for diminished concern. Many waters of Connecticut remain impaired and significant threats to maintaining and achieving further improvements to current water quality exist. Threats and impacts to the state's water quality today come from a variety of sources, which include direct wastewater discharges and excess nitrogen in the state's waters, but more and more frequently are related to development and land use change. Land use change effects include nonpoint and stormwater runoff, loss of natural land treatment and habitat functions, and atmospheric deposition of pollutants. Eighty-seven of the 340 sub-regional basins in Connecticut are classified as "basins of concern" where competing demands result in an overuse of the water resource. In the future, the permit renewal process will align individual permits with the

overall watershed management recommendations, thereby addressing the total maximum daily loads from both point and nonpoint sources of pollution.

A program to address point sources of pollution continues to be necessary to extend and upgrade sewer service facilities to include advanced wastewater treatment where necessary; nitrogen removal to restore the Long Island Sound; develop new, small-scale innovative sewer for isolated troubled rural areas; and complete the separation of storm and sanitary sewers.

Another emphasis is to prevent groundwater pollution and to remediate contaminated groundwater. Groundwater contamination has occurred throughout the state from a wide variety of sources: spills and leaks of petroleum products, improper handling and disposal of chemical liquids, pesticide application, fertilizers, bacterial contamination, and past solid and hazardous waste disposal practices. These incidents of contamination are likely to continue with their attendant health risks and economic impacts. Often the responsible party is unknown or unable to provide a remedy. The state has developed programs that approach the problem either by focusing on land uses in critical areas, such as current drinking waters resources as in the Aquifer Protection Program or Source Water Protection Program or on potentially polluting land use such as underground petroleum storage tanks. There needs to be a focus on restoring groundwaters by implementing programs that promote voluntary remediation, maintaining and improving the efficiency of the enforcement-based remediation programs, and promoting coordination with federal remediation programs so that more sites are cleaned up. The best management practices, including recognition of development patterns that do not impair natural functions or exceed carrying capacities of the lands, called for in these endeavors should become widely practiced to ensure that land uses everywhere support sustainable water quality.

A third requirement is to avoid and correct the many small impacts caused by land uses. Nonpoint sources of pollution from land use have been recognized as a major problem for water resources ranging from public water supply aquifers to Long Island Sound. Additional emphasis is on the use of best management practices to address nonpoint source pollution and to improve surface and groundwater quality as a part of the nonpoint source strategy. However, the treatment capacity of standard “best management practices’ is limited and can be easily made ineffective by excessive upland development. Pathogens, toxic contaminants, nutrients, and sediments that are washed off the surface of the land by stormwater runoff, are becoming major obstacles to cleaner water. Due to the complexity and diffuse nature of these sources, they must be addressed locally where they can be integrated into the everyday land use-water

quality decisions of landowners and municipal planning, zoning, and conservation commissions.

Serious attempts to assess stormwater quality began in 1992 with a program that requires stormwater management plans, training, and stormwater monitoring at approximately 1000 commercial and industrial sites. Through this initiative, DEP instructed industry on improved stormwater management procedures. The worst polluting sites are being identified for further remedial action. Now underway is a second phase that focuses on training all towns on stormwater management issues. This will build on a valuable existing education -- the Nonpoint Education for Municipal Officials, or NEMO -- which sets forth strategies to integrate water quality considerations into design objectives of town regulations and site plans. Examples are: retention of the natural landscape (the most effective strategy); reduction of impervious surfaces through consideration of road width; parking requirements and the use of pervious materials; encouragement of riparian buffers, proper septic system placement, design, and maintenance; and best management practices (BMPs) where the natural hydrology has been impaired by the scale or nature of development. However, the treatment capacity of standard BMPs is limited and can be easily overwhelmed and made ineffective by excessive upland development, as a result there needs to be a careful balance between the adverse impacts of upland development and the reasonable mitigation that can be effected by BMPs.

A fourth issue concerning water quality relates to managing scarce water quantity among multiple uses. Over-allocation of available water can result in public expenditures to upgrade wastewater treatment facilities in order to enable streams to address multiple functions without degrading water quality below swimable/fishable quality. The Connecticut Water Diversion Policy Act, in effect since 1982, establishes a statutory framework for the allocation of water resources among all water users. Over-allocation of water resources degrades stream health. In the most dramatic cases, streams can be virtually eliminated by complete diversion of all water for out-of-stream uses. Watersheds with water allocation problems include the Quinnipiac River, the Pequabuck River, Pomperaug River, Pattagansett River, Bride’s Brook, and Latimar Brook and other water designated as flow impaired by the Connecticut Department of Environmental Protection.

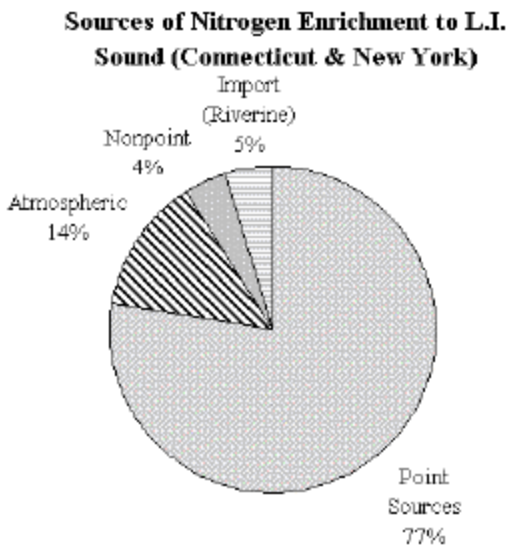
Connecticut is working toward a comprehensive rational public policy governing water allocation that will overcome the shortcomings in the present system. Management of the state's water resources has become complex. Conflicts in water use, such as water supply development, maintenance of stream flow for fisheries, and waste disposal, have become

the norm. Allocation and management decisions are evolving in a more comprehensive manner and from an overall watershed perspective.

The State Water Planning Council, established in 2001, recognizes the need for the development of a comprehensive and streamlined water allocation process for all water uses based on sound science and accurate date. Adoption of a Water Allocation Policy Planning Model should be considered as a blueprint for developing a comprehensive state water allocation/management program. A water allocation process must protect the public's health, safety and welfare, address conflicts among competing water users, prevent degradation of natural environments, encourage water conservation, mitigate the harmful effects of drought, and achieve a balance between consumptive and non-consumptive uses of water. Development of this process should be pursued.

One of the current shortcomings is limited information on the variability of natural flown and water quality over long periods of time. Second, there is no universally accepted method to determine in-stream flows needed to sustain healthy riverine ecosystems. Third, accurate information is needed with respect to registered diversions in order to accurately determine the amount of water, if any, that can be removed for future consumptive use without sacrificing in-stream flow needs. And lastly, more accurate information is needed on future demands on water resources for water supply, waste assimilation, recreation navigation and habitat enhancement in each watershed as well as the relative importance of each of these uses within the watershed. Better information on current and planned water and land uses within each watershed should improve the timeliness and predictability of these decisions.

The elimination of hypoxic conditions in the Long Island Sound estuarine is a major objective for the next decade. The greatest improvements will be realized by upgrading municipal sewage treatment plants and appropriate industrial discharge treatment systems to remove nitrogen, which will be a very substantial undertaking.



Concurrently, the major challenge of improving watershed management, including the management of nonpoint sources, and sources of nitrogen associated with atmospheric precipitation, must be met with increased or redirected resources. Further water quality improvements plus the nitrogen reductions achieved by improved point source controls can and should be realized.

It is the goal of this Plan to maintain existing high quality waters and to restore and manage the waters of the state to a quality and quantity consistent with their use for water supply, water-based recreation, and for the protection and propagation of fish, shellfish, and wildlife. Further, it is the goal of this Plan to protect the public health and welfare and to promote economic development and agriculture. A focus of this plan is to encourage increased awareness of the interconnection of land and water issues in order to foster integrated planning, resource allocation water and wastewater management, watershed management, and coordinated land use planning and economic development by state, regional, and local agencies.

- **Policy:** Improve the timely resolution of water resource conflicts by balancing the competing needs of water for human consumption, waste assimilation, habitat, recreation, power production, and transport. Encourage continued federal financial assistance to the state to meet clean water goals.

    - Develop a comprehensive framework for making water allocation decisions integrating existing programs and instream flow standards for all streams.

- Maintain accurate information on water use and water resource availability within each basin to aid water allocation decisions.

- Complete a statewide water resources management plan and utilize it as a means to identify existing water resource capabilities and conflicts, competing needs, and proposed uses of the waters of the state.

- Utilize the adopted standards and criteria as a guide for state government decisions on the use and allocation of water.

- Revise the allocation process to make it more predictable and based upon the Water Allocation Planning Model endorsed by the Water Planning Council.

o Reduce demands on water resources and maximize multiple use through water conservation, advanced wastewater treatment, pollution prevention, waste minimization and interbasin transfers.

➢ **Policy:** Continue to improve the quality of ground and surface water through a combination of pollution prevention and pollution abatement practices.

o Permit wastewater discharges that are consistent with surface and groundwater quality standards.

o Continue to maintain the quality of those waters of the state that are already at a high standard. Lower existing water quality only after an anti-degradation evaluation with public participation finds that existing and designated uses will be fully protected and the action is necessary because of overriding statewide economic and social development needs. Lower standards should not interfere with, or become injurious to, existing or potential uses or inequitable impact population groups.

o Promote best available control methods to prevent or correct nonpoint pollution sources: sludge and industrial waste disposal; highway, urban, silvicultural and agricultural runoff; and erosion from construction sites.

• Utilize preventive measures, such as vegetative buffers, within which little or no land disturbance or use is allowed, in the management of this type of pollution. Educate local decision-makers on how to deal adequately with nonpoint sources of pollution. Focus on the reduction of impervious surfaces and reduce blacktop and sidewalks, whenever feasible. Improve stormwater management by use of natural systems, such as grass swales, minimization of impervious surfaces, and groundwater recharge. Determine the contribution and impacts of nonpoint sources of toxic substances on the state's waters.

• Encourage low impact development projects where and when feasible by promoting the integration of site design, planning techniques, and stormwater management practices that conserve natural systems and hydrologic functions on a site.

• Build capacity for municipalities to take appropriate policies and practices recommended by the state to prevent and control nonpoint pollution, address stream hydrology, aquifer recharge, and stormwater quality. Build capacity through the provision of technical support and training to municipalities and the development of local nonpoint pollution control programs. Provide incentives when financially feasible.

• Incorporate stormwater management techniques in state sponsored and funded projects to provide effective alternatives to diverting collected runoff into water bodies via impervious paved surfaces. Such techniques should address groundwater recharge and wetlands impacts associated with potential hazardous materials spills, road salt, removal of vegetated buffers, and erosion and sedimentation.

o Implement polychlorinated biphenyl cleanup efforts of the Housatonic River in accordance with court consent decrees.

o Reduce incidence of contamination from underground storage tanks by monitoring leaks and strengthening preventative regulations as necessary.

- Prevent the overuse of pesticides and fertilizers by educating pesticide users about the safest and least harmful alternative practices.

- Support the extension of sewage collection systems into Rural Lands and Areas of Environmental Concern only where a thorough evaluation of all alternatives determines that: 1) it is the cost-effective alternative to correct an identified public health hazard; and, 2) it is sized to address only the existing pollution problem and the design and capacity will not induce further intensive structural development with attendant nonpoint source pollution threats to water quality.

- Implement the Aquifer Protection Program with the adoption of the first phase of land use regulations to protect existing well sites. Expand the regulatory program to apply to potential public well field sites and to aquifers deemed by DEP to be of high yield and of significance to the state's groundwater needs in the future.

➢ **Policy:** Restore the water quality of Long Island Sound.

- Ensure consistency with statutory, coastal area management policies (C.G.S. Sec. 22a-92& 22a-100).

- Implement recommendations of the Comprehensive Conservation and Management Plan of the Long Island Sound Study to correct problems related to hypoxia (low dissolved oxygen), toxic contamination, pathogens, floatable debris, and the health of the Sound's finfish and shellfish.

- Continue to implement the established nitrogen reduction plans according to the permit schedule established for sources throughout Connecticut.

- Restore tidal flows to coves, embayments, tidal rivers, and tidal wetlands when flow control structures, such as culverts, tidal gates, and bridges, need to be replaced in order to improve degraded habitat, water quality, or control of the spread of disease-threatening mosquitoes.

- Plan, design, and implement the state's coastal nonpoint source pollution control program in cooperation with

NOAA, NRCS, EPA, soil and water conservation districts, regional, and local interests.

- Develop contaminated sediment clean up standards and a strategy for management of dredged materials, including beneficial use, with assistance from EPA.

- Use educational materials and public outreach to foster public participation in the improvement of Long Island Sound.

- Continue to focus on coastal flood monitoring, early warning system, flood hazard mitigation, and non-structural solutions when addressing coastal flood hazards.

C. Air Quality

Connecticut has seen major improvements in air quality over the past 20 years. However, there are still times when air pollution harms people's health and damages crops, forests, and property. Additional effects of air pollution are being identified, and new concerns are emerging that will require greater control efforts. Balancing air quality gains with the costs of such controls and the ability to provide for economic development is a critical planning concern.

Air quality monitoring shows that Connecticut now meets health-related standards for five of the seven major pollutants regulated under the federal Clean Air Act. However, the U.S. Environmental Protection Agency recently adopted a new, more stringent 8-hour ozone standard and a new standard for very fine airborne particles. Connecticut is likely to have significant violations of both.

The prior 1-hour standard for ozone has been periodically violated statewide in the summer months with portions of the state classified as having either "severe" or "serious," pollutant levels. Control measures adopted in recent years, including vapor recovery at gasoline stations, cleaner gasoline, and new emission limits for motor vehicles and large sources such as power plants, have markedly reduced the number and severity of violations. However, the state still has unhealthy air on too many days.

Air quality problems are greatly complicated by windborne pollutants transported to Connecticut from upwind states and from Connecticut to downwind states. Reaching the new standards here depends greatly on the quality of air coming from states to our south and west. The new ozone standard is likely to require more upwind areas to install the kinds of

controls already in place in Connecticut. Pollutant emissions transported from states to the west and south make up a significant percentage of Connecticut's air pollution. It is impossible to devise state strategies for healthful air without an equitable regional strategy for upwind states. Vigorous participation in regional and national approaches is vital. This will not only improve our air quality but will help level the economic playing field. Vigorous participation in ensuring regional solutions to the ozone problem is thus crucial to the health of both Connecticut's air and its economy.

Very fine airborne particles can penetrate deeply into the lungs and appear to be linked to significant health problems. Reaching the air quality standard for them may ultimately be more difficult than for ozone. Both windborne and local emissions affect ambient levels, and cleaner fuels will probably play a key role in any attainment strategies. Fortunately, many measures that reduce ozone concentrations will also aid in reducing very fine particle levels. Some of these measures should also reduce deposition of windborne nitrates and sulfates that degrade water quality.

Maintaining the in-state gains is not assured. Past control efforts have focused on major sources and transportation-related pollutants. The need for more emission reductions now draws smaller sources into the regulatory loop. Many are small businesses ill equipped to deal with complex regulatory processes. Continuing efforts are needed to simplify control approaches for small businesses and to develop innovative technical assistance and financing mechanisms. Past efforts significantly reduced automobile emissions that contribute to ozone formation. However, projected growth in vehicle use will ultimately outstrip emission reductions that occur as new cars with improved controls move into the fleet. This growth is largely due to dispersed development and increases in suburb-to-suburb travel for work and shopping trips. More stringent emissions standards and cleaner fuels for new vehicles will help stave off emissions increases for some years, but strategies to hold down increases in vehicle use will necessarily be part of the effort to meet and maintain the ozone standard. Land development, transportation, and energy use decisions are major determinants of air pollution levels and must therefore be coordinated with and support attainment and maintenance of, air quality standards. Channeling development into or adjacent to urban areas where transit service exists or is feasible is of particular importance. Land use patterns that promote the use of public transportation as an alternative to single occupancy automobile trips will contribute to the solution.

Connecticut's air quality future intertwines with its energy future. As our substantial nuclear generating capacity reaches the end of its useful life, cost considerations suggest that replacement capacity will be fossil-fueled. Midwestern utilities generating with coal at high rates of emissions could

conceivably become the chosen retail electricity supplier for major users in Connecticut. Emissions from these plants already affect air quality in Connecticut. Energy planning must place a value on the societal costs of energy. Costs include air pollution and associated health costs, and prospects for global warming due to the burning of fossil fuels. Energy choices should not jeopardize the gains made in environmental quality.

It is the goal of this Plan to achieve and to maintain a quality of air that is protective of public health and welfare and that allows attainment of economic and urban development goals.

- **Policy:** Seek to attain National Ambient Air Quality Standards by the applicable deadlines with emphasis on cost-effective strategies and effective enforcement.

    - Promote the development of equitable strategies for control of interstate pollutant transport through joint efforts with other states and the Environmental Protection Agency.

    - Consider environmental and economic impacts in all state government efforts to restructure the electric utility industry, and seek to ensure that they are adequately addressed in national efforts.

    - Attain the ozone and very fine particle standards through efforts that balance air quality gains with transportation and economic impacts. Give priority to cost-effective measures that will contribute to reaching both standards.

    - Maintain air quality monitoring, permitting, compliance, information, and research programs. Support programs to educate the public on the importance of air pollution problems and consumer choices to reduce air pollution.

- **Policy:** Develop strategies to achieve and maintain healthy air quality that will enable and foster economic development within the urban areas of the state as designated within this Plan.

    - Incorporate within state air quality implementation plans the strategies and programs needed to achieve a growth allowance for urban areas.

    - Expand and improve programs for trading emission credits or allowances.

- Provide clear and timely guidance to any business that must make substantial investments to comply with emission standards.

- Implement regulatory approaches that are environmentally sound, foster least cost compliance, provide sources with necessary operational flexibility, and offer incentives for pollution prevention.

- Continue and expand compliance assurance efforts, especially those that assist small businesses with identifying and meeting applicable requirements. When appropriate, assist in developing innovative funding mechanisms to aid small businesses in meeting regulatory requirements.

➢ **Policy:** Foster transportation and development plans and projects that promote attainment and maintenance of healthy air.

- Encourage compact, contiguous development patterns that can help limit increases in vehicle use. In particular, support infill development and redevelopment in urban areas and higher development densities in those corridors where transit exists or is feasible, if such development is consistent with other resource conservation goals.

- Continue emphasis on transportation plans that demonstrate needed progress toward attainment of National Ambient Air Quality Standards. Support development plans and projects that are consistent with and promote regional transportation strategies that help implement air quality plans.

- Continue efforts to assist major employers in adopting and promoting ride sharing and transit programs for their employees to meet transportation, energy conservation, and air quality objectives. Foster other public/private partnerships that promote and provide incentives for ride sharing and transit use. Work with the Mashantucket Pequot and Mohegan tribal governments to reduce air quality impacts from the growth of traffic due to casino development in southeastern Connecticut.

- Support and apply new emission control measures and technologies for mobile sources of pollution; adopt strategies to reward efficient cars and discourage inefficient

ones; and discourage policies that restrict the purchase of the most efficient vehicles for the state fleet.

- Encourage higher levels of federal support for transportation improvements that promote air quality standards, including increased research, development, and commercialization of clean-burning alternative transportation fuels.

- Encourage the development of trails and greenways that provide corridors to non-motorized transportation.

➢ **Policy:** Establish and maintain standards that will protect citizens from the dangers of hazardous air pollutants and integrate monitoring and regulation of such pollutants into air quality enforcement activities.

- Coordinate Connecticut's hazardous air pollutant program with the applicable provisions of the 1990 Clean Air Act amendments.

- Educate the public about indoor air pollution and the actions that can reduce it. Promote continued testing to determine the extent of radon exposure and propose approaches to protect public health.

- Develop cost-effective control measures for mercury use, transport, recycling, and deposition.

➢ **Policy:** In order to reduce the risk of global climate change, seek to reduce statewide carbon dioxide emissions to 1990 levels by 2010 and to reduce further where technically and economically feasible. Also, seek to reduce statewide carbon dioxide emissions to 10% below 1990 levels by 2020, as set forth by the New England Governors and Eastern Canadian Premiers.

- Develop and use renewable energy resources, such as solar (including photovoltaic systems), hydro, wood, and wind energy, to the maximum practicable extent.

- Encourage the use of energy-efficient building materials and techniques for new construction and renovation projects.

- Encourage energy-efficient patterns of development: encourage energy efficient revitalized urban centers, higher

densities in public transportation centers and along corridors, urban growth in accordance with the locational guide, and planned mixed-use development.

- Reduce or capture methane emissions from landfills where feasible and prudent; support economically viable landfill gas-to-energy projects.

- Work toward implementing the approved recommendations from the Climate Change Action Plan.

D. Waste Management: Solid, Hazardous, & Low-Level Radioactive

Solid Waste:

Connecticut has replaced its past reliance on landfills with a new emphasis on reducing the amount of waste generated and on capturing reusable materials and energy before disposal. Waste avoidance, recycling, composting, resources recovery, and properly sited and regulated landfills constitute an integrated system for solid waste management in Connecticut. The state's objective is to recycle 40% of the waste stream and to offset any growth of the waste stream which occurs after 2000 by either waste avoidance or recycling. However, as efforts to date have not increased recycling rates above the 25-26% level for several years, Connecticut must make significant efforts beyond those taken already to address its waste management challenges. It is important to the cost of living and the cost of doing business in the state to significantly expand recycling, composting, and the beneficial reuse of solid waste materials, where feasible, and to continue successful resource recovery facilities

To achieve the state's recycling objective will require continued public awareness and participation, cost effective recycling of additional materials, stable markets for recycled materials, regulatory changes to promote beneficial reuse of solid wastes, and a ban on commingling wastes not readily recycled, burned, or disposed of by acceptable procedures.

Public and private recycling efforts need to explore the remediation and beneficial reuse of additional types of wastes, particularly high volume waste streams such as: ash from coal burning, resource recovery, or sewage sludge facilities, sludge from wastewater treatment plants, soils previously contaminated by petroleum products, foundry sands and bulky wastes from demolition debris. Lowering the costs of disposal and/or reuse of these materials will both lower the cost of doing business in the state and promote public objectives concerning site remediation and neighborhood revitalization.

Resource recovery has been an effective method to capture available energy from the waste stream, replace fossil fuels with a renewable fuel, and significantly reduce the volume of the waste to be landfilled. However, changes brought about by electricity deregulation, other laws, and other options will challenge the continuing feasibility of these facilities.

To the extent waste reduction, recycling, and resource recovery are not successful or economically justified, the remaining waste or residues from recycling and resource recovery operations must be disposed of in a landfill. The few acceptable sites that are available for solid waste, ash and bulky waste disposal must be preserved and developed as needed. A comparison of out-of-state disposal versus the possible development of new, in-state landfills must be evaluated to determine the least-cost and most environmentally acceptable option for the disposal of these remaining wastes.

It is the goal of this Plan to reduce adverse impacts on the environment and public health while achieving maximum recovery and recycling of the resources in solid waste.

- **Policy:** Enhance the statewide, integrated recycling, composting, resource recovery, and landfill system. Consider various measures, including additional mandates and incentives, the development of markets and the setting of examples through state agency actions to achieve the 40% recycling goal. This system should:

  • conform to the State Solid Waste Management Plans long-term strategies;

  • strive to attain the recycling and source reduction objective of 40% of the waste stream;

  • provide least cost system-wide service;

  • comply with air and water quality standards, and

  • promote private activity to the maximum practical extent.

  - Assist businesses that are recycling new materials or developing new products using recycled materials.

  - Implement effective reuse of high volume waste materials such as ash from coal burning, resource recovery, and sewage sludge facilities, sludge from wastewater

treatment plants, sediments from dredging and maintenance of stormwater controls, soils contaminated by petroleum products, foundry sands and bulky wastes from demolition.

- Anticipate landfill capacity necessary for in-state dispose of those wastes, which are not suitable to be reduced, recycled, composted, incinerated, or disposal out-of-state. Site, develop, and operate regionwide disposal options in compliance with health and environmental standards. Monitor closed landfills and when necessary institute remediation to bring water and air emissions within established standards.

- Develop special collection and handling procedures for materials that are harmful and that adversely impact accepted recycling, incineration or disposal practices.

Hazardous Waste:

Hazardous wastes are defined by their corrosive, reactive, ignitable, or toxic characteristics that can potentially harm human health or the environment when improperly managed. Hazardous waste generation, treatment, storage, and disposal are regulated in accordance with the federal Resource Conservation and Recovery Act.

Common waste streams among the states hazardous waste generators include heavy metal-bearing sludge, used solvents, and inorganic liquids such as spent acids and caustic solutions. Previously, industrial wastes were often directly discharged to surface impoundments adjacent to manufacturing plants or disposed in municipal landfills that accepted such wastes. Presently, Connecticut generators rely on out-of-state disposal capacity because increased federal regulatory requirements in the mid-1980s effectively ended in-state disposal practices.

Interdependence among states offers the best opportunity for cost effective management of hazardous waste. Reliance on out-of-state treatment and disposal facilities is typical, since self-sufficiency in each state would be economically unsound and result in an overabundance of waste management facilities. An evaluation of all viable disposal/treatment options must be undertaken as the state assesses its options for adequate hazardous waste disposal for the next twenty years.

Rising treatment and disposal costs motivated many generators to change their focus from remediation and end-of-pipe treatment practices to pollution prevention and waste minimization measures. Today, many large and mid-size waste generators have on-site treatment capacity to separate

out the hazardous constituents in their wastewater. In addition, several commercial waste management firms in Connecticut provide wastewater treatment services. Residues from such treatment processes are shipped out-of-state for landfill disposal or incineration.

Connecticut's industrial history has produced a legacy of contaminated properties. To date, 1,540 hazardous waste sites have been identified in Connecticut. Clean-up activities are implemented under the authority of the State Superfund, Property Transfer, Federal Superfund, and Closure/Corrective Action Programs of DEP. Whenever possible, responsible parties are identified, consent orders are negotiated, or enforcement actions are taken to require remediation of the sites. When responsible parties are unable to effect remediation of the site, state or federal funds may be used to clean up the site. As of December 1996, eleven sites had been approved for state-funded remedial action and 15 sites had been placed on the federal National Priorities List for federal-lead remediation.

Household hazardous wastes, such as cleaners, paints, auto fluids, and lawn and garden products are a significant concern. Although such wastes are exempt from hazardous waste regulations, they cannot be disposed at solid waste facilities in Connecticut because they are typically in liquid form and can exhibit hazardous characteristics. Household hazardous wastes that are not properly disposed at one of the states three permanent collection facilities can injure sanitation workers, damage septic and sewage systems, contaminate surface and ground water supplies, or increase hazardous air emissions if burned in a resource recovery facility. In some regions, one-day household hazardous waste collections have proven to be an effective and less costly alternative to constructing additional permanent facilities.

It is the goal of this Plan: 1) to assure appropriate and prudent management of hazardous substances and, where appropriate, to reduce or avoid the generation of hazardous waste at the source, 2) to provide access to critical recovery, treatment, storage and disposal facilities needed to manage the state's hazardous waste in a manner that protects public health, safety, and the environment, without harming the state's economy, and 3) to assure the discovery and clean up of contaminated sites where past activities pose a risk to public health and the environment.

- **Policy:** Pollution prevention, the efficient use of energy, and recycling of material resources will be the primary means to maintain a clean and healthful environment.

    - Provide technical, financial, or regulatory assistance consistent, to the extent practical, with the preferred

management guidelines and strategies of the State Hazardous Waste Management Plan. Strive to have 100% of large quantity generators participating in waste minimization activities by the year 2015.

- Continue to maintain an accurate census of current in-state hazardous waste generators, handlers, transport, storage and treatment locations, practices and/or facilities. Periodically assess the trends in waste generation and management.

- Reduce the amount of hazardous waste generated by providing technical and financial support for pollution prevention and waste minimization. Continue the cooperative public/private program to assist firms in an efficient exchange of information on improved reduction, recycling and treatment practices necessary to comply with state and federal regulations. Strive to reduce the amount of hazardous waste generated by the year 2015 to 29% of 1991 levels.

- Continue to maintain adequate regulatory safeguards in the transport, storage, recycling, treatment and disposal of hazardous wastes.

- Regulate and monitor pesticide application in Connecticut to prevent environmental contamination and implement strategies and programs to restore polluted areas. Strive to have 100% of certified pesticide applicators practicing Integrated Pest Management for structural pest control by the year 2015.

- Continue to coordinate area wide one-day household hazardous waste (HHW) collections. Promote consumer education and outreach to encourage the use of safer and less toxic product alternatives. Re-evaluate state household hazardous waste (HHW) grant program policy to possibly expand funding eligibility for the capital needs of alternative collection programs. If necessary, develop additional permanent regional collection facilities for household hazardous wastes. Discourage the siting of such facilities within existing or potential public water supply watershed or aquifer areas.

➢ **Policy:** Protect public health and safety, the environment, and economic interests in managing hazardous wastes and the remediation of contaminated sites.

- Assure the availability of treatment or disposal capacity for all hazardous waste generated in the state over the next 20 years. Encourage qualified private waste management firms to develop any needed facilities prior to consideration of alternative public ownership/operation mechanisms where private industry is unable to meet the hazardous waste management needs. Maintain open interstate movement of hazardous wastes in order to take advantage of least cost, region-wide, commercial disposal options.

- Encourage the advancement of safe and environmentally compatible technology for source reduction, recovery, treatment, recycling, and pollution prevention to create opportunities for economic development and to reduce costs for both businesses and customers.

- Where siting constraints can be met, efforts should be made to encourage commercial hazardous waste treatment facilities to locate in proximity to areas of significant waste generation.

- Incorporate resource recovery measures into the design and long-term facility operation for any proposed hazardous waste facility. Only residues that meet federal Land Disposal Restriction Treatment standards or have been rendered inert should be considered for landfill. Siting for any such proposed facility should be consistent with the locational guidelines of this Plan.

- Continue the comprehensive program for site discovery, investigation, assessment, monitoring, closure and clean-up activities to ensure timely identification of contaminated sites that pose a threat to public health and the environment. Reassess the existing site prioritization system to ensure that remediation resources are targeted to sites posing the highest risk to public health and the environment, such as those in public water supply watershed and aquifer areas.

- Whenever possible, involve responsible parties in the clean up of sites. Continue to use state and federal funds to clean up sites which pose an unacceptable threat to public

health and the environment, especially when a responsible party cannot be identified or is unable to provide a remedy.

- Continue education on potential hazards of commonly found toxics and their public health impacts.

Low-Level Radioactive Waste:

Low-level radioactive waste (LLRW) is a byproduct of many everyday processes conducted by commercial nuclear power stations, medical and industrial facilities, research laboratories, academic institutions, and the military. There are approximately 50 active or potential generators of LLRW located in 30 towns across Connecticut.

LLRW includes various types of supplies and equipment that have been contaminated by radioactive material, such as protective clothing, paper towels and filters, laboratory instruments, water treatment resins used to purify reactor coolant, and some large components and concrete from the decommissioning of nuclear power stations. LLRW is not spent fuel from nuclear power stations or high-level radioactive waste.

Federal law makes states responsible for the management of most types of LLRW, while the federal government is responsible for managing high-level waste. LLRW is subclassified primarily by its concentrations of radioactive material. These concentrations can vary widely, from levels only slightly above natural background radiation, to levels that would be hazardous without special handling.

Comprehensive regulations are in place to protect workers, the public, and the environment from unsafe or unnecessary exposure to radioactivity from the handling and management of LLRW. Improved waste treatment practices and market forces have combined to reduce the amount of LLRW produced over the past decade. While short-term storage of LLRW is a common management method, most LLRW eventually needs to be disposed of at a licensed facility.

In order to encourage states to pursue regional solutions to LLRW disposal, federal law grants interstate compacts the right to exclude LLRW generated outside their region. Connecticut and New Jersey formed the Northeast Interstate Low-Level Radioactive Waste Management Compact in 1986, with each state pursuing its own disposal facility siting process.

In July 2000, South Carolina joined Connecticut and New Jersey as a member of the Northeast Compact in order to limit the amount of LLRW being disposed of at its existing Barnwell facility. Upon approval of South Carolina's membership, the compact became known as the Atlantic Compact. The Atlantic Compact provides Connecticut generators with a number of benefits, including stable disposal rates,

flexibility to dispose of waste elsewhere if other disposal option are available, and, most importantly, access to the Barnwell disposal facility until all currently licensed nuclear power stations in the compact region are fully decommissioned and their licenses terminated.

As a result, Connecticut is no longer faced with the challenge of having to site and develop a disposal facility within its borders. Long-term access to the Barnwell disposal facility also removes the regulatory uncertainty for generators who might otherwise be faced with having to store LLRW on-site for indefinite periods. This can provide Connecticut's bioscience industry with an added incentive when it comes to attracting business to the state, as well as an assurance to all citizens that vital research and medical treatment can continue unimpeded.

It is the goal of this plan to ensure that LLRW generated in Connecticut is managed in a manner that protects public health and safety and the environment.

- **Policy:** Protect public health and safety and the environment while pursuing cost-effective solutions to managing LLRW that is generated in Connecticut.

  - Monitor national trends and developments and facilitate LLRW generator access to available commercial treatment and disposal facilities.

  - Encourage strategies that: 1) reduce the amount of LLRW generated; 2) ensure safe and cost effective in-state storage while waiting shipment; 3) maintain accurate records of the characteristics and volumes of waste generated, stored and shipped; and 4) inform the public of LLRW management issues.

Growth Management Principle #6

Promote Integrated Planning Across all Levels of Government to Address Issues on a Statewide,

Regional and Local Basis

Integrated planning is the principal strategy for assuring that state-level development is consistent with the Plan. Horizontal coordination involves communication between state agencies for program impacts that cross agency program or geographic lines. It is important to strengthen processes for carrying out coordinated horizontal planning in order to manage intersecting state agency interests in ways that are consistent with the Plan. Vertical coordination involves communication and integration of planning processes between and among different levels of government. Planning for Connecticut's future as a desirable place to live and work must be coordinated on a statewide basis, while acknowledging differences in regional character, and disparate needs across geographic boundaries. Using the Plan as a foundation, OPM will seek to promote both horizontal and vertical integrated planning to address statewide, regional and local interests by:

- providing assistance and guidance to state agencies to assure consistency between individual agency plans and the state Plan;

- working with regional planning organizations to creatively develop coordinated and effective regional plans and implement projects which reflect cross-cutting and region specific needs;

- encouraging municipalities to consider the Plan when revising local plans of conservation and development. If local plans are inconsistent, reasons for the inconsistencies should be noted and addressed and efforts should be made to achieve consistency with the Plan's stated Growth Management Principles; and

- working with selected neighborhood groups, when possible, and reviewing strategic plans that are called for by Neighborhood Revitalization Zone legislation.

Efficient and effective management and utilization of information is critical to making sound development decisions at every level of government. Planning resources, such as the geographic information system, make it easier to identify the capacities of natural and built environments and use them as a basis for integrated planning. This system of mapping and data collection provides uniform planning information relating to demand and capacity at municipal, regional, and state levels. It also better enables the identification of alternative courses of action and the consequences of each alternative, thus providing a sound data driven basis for coordination and consistent decision-making.

Geographic information in a computerized database can be continually updated, refined, and corrected through the cooperative efforts of the various participants. In addition, public and private sector organizations can better access specific

development or siting issues. Coordination with federal, regional and local agencies involved in data collection and geographic mapping in Connecticut would also enhance the base data.

The development of a coordinated approach to providing standardized geographic information technology and mapping products has lagged behind in the State of Connecticut. A geographic information system is and continues to be a valuable tool for all planners in all areas of government, and more recently, it has become a necessity for public health and safety. Geographic information system coordination and enhancement should be a high priority for all state, regional and local government organizations.

State-of-the-art information technology should be accessible and useful in promoting appropriate integrated planning. The implementation of improved information management must include initiatives to:

- develop policies for a statewide information management and access system;

- improve the economic information system by integrating the information resources of state agencies;

- maintain statewide demographic and economic projections to provide uniformity and standardization of planning assumptions in decisions concerning state programs and facilities. Alternative projections should be used only when such deviations are substantiated by accepted methodologies, unique local situations, or more recent information;

- develop and implement a framework for geographic information that will service the common needs of all users and permit the orderly storage, organization, and handling of large amounts of geographic data; and

- initiate a progressive program for the sharing of planning data among state agencies, regional organizations, and municipalities.

While beyond the scope of this plan, it must be recognized that the state's tax structure plays a critical role in existing and future land use development patterns. An integrated approach to land use planning must factor in the realities of tax policy and its affect on development patterns. The real property tax is the major revenue producer for municipal government. It is the revenue source for offsetting the major local expenditures on public secondary education and public services. As a result, many planning and zoning decisions are influenced by the anticipated fiscal impacts from land uses. A community that hosts new economic development will receive the associated tax revenue while other communities in

the region receive none. This creates inter-municipal competition for economic development revenue that, in part, has acted as an incentive to draw economic development out of urban areas and into surrounding towns. Businesses are attracted to the lower property taxes in these areas and not to the cities where infrastructure to support business expansion already exists, but where the property tax is higher. In addition, this competition has resulted in homogenous development trends that blur unique municipal characteristics, and effectively erode the natural and cultural heritage of the state.

Another factor affecting land use decisions is the differential incidence of the property tax most evident in urban areas. Although falling on both land and buildings, the major burden is applied to the buildings or improvements. In effect, this creates a penalty or disincentive for building maintenance and rehabilitation, thus contributing to the continued deterioration of urban centers. The relatively low tax burden on undeveloped land contributes to land speculation and vacant or underutilized parcels. In combination with the concern for the fiscal impact of zoning, this unequal burden promotes "leapfrog" development patterns with the concurrent problems of development pressures on prime agricultural lands and other areas of environmental concern.

Consideration needs to be given to ways in which property taxation can serve as a positive incentive for conservation and development policy. While it is clear that property taxation policy has an effect on land use development patterns, the extent of its influence, in conjunction with other factors, needs further study. Some municipalities in other states are experimenting with the phasing in of land value taxation as a means to promote better land use decisions. Some regions may wish to explore regional sharing of tax revenues from selected land uses that have widespread impacts. Understanding the real impact of and defining the future role for the taxation of real property may provide a major opportunity to affirmatively promote the growth management principles as put forth in this Plan.

In the development of this plan and guide map there was an attempt to achieve as much consistency as possible among: 1) a set of goals that have achieved a high degree of consensus over the years, 2) the land use policies of regional planning organizations and of municipal government as expresses in municipal planning and zoning documents, 3) infrastructure planning at the state and local level, and 4) the natural environment of the state. Every attempt was made to gather approved water supply plans of public and private water utilities and to gather the most recent information on sewer service and to update the state’s geographic information system. However, infrastructure planning has not always been based upon the prevailing land use policies. For example, many town-wide sewer facility plans were developed years ago by engineering consultants and the plans only reflect a potential engineering approach to providing sewer facilities throughout the town. Costs, conformity to environmental carrying capacity, and conformity to local policies for growth were not considered when defining the service areas.

To better achieve a community's vision of its future, infrastructure plans should conform spatially to the town's plan. To bring greater harmony and predictability between land use planning and infrastructure planning, consideration should be given to enabling the establishment of 'urban service boundaries'. An urban service boundary is an officially adopted and mapped line that divides the community into lands to be developed and lands to be protected, or where lower densities are maintained. Such a boundary can lead to programs that encourage appropriate development inside the boundary and enhance long-term ecological, agricultural and other uses of natural lands outside the boundary. All aspects of a community for a twenty- year period, such as future housing and businesses should be assessed. Boundaries should be matched with a strategy to ensure efficient and timely response to development proposals and to provide needed urban services that support development. Policies may have to be changed to make it easier to infill and to respond to market forces within the urban service area.

Objectives and Outcomes

Managing change requires a prudent use of resources: natural, monetary, and human. This Plan recommends broad growth management principles and associated policies that provide a general guide so that such resources can be coordinated to achieve a common vision for the continued growth of Connecticut. These growth management principles and goals have been developed in order to focus future development in a manner that will more fully utilize existing infrastructure, while maintaining the integrity of the state's natural resources and heritage. To keep on this path there needs to be a coordinated effort on the part of the state to implement public investment, and create incentive based initiatives that will maximize private investment, in a manner consistent with the growth management principles as put forth in this Plan.

The success of this Plan will be measured in terms of future land use patterns, the state's ability to continue to grow economically, and the preservation of our natural resources and cultural heritage. To keep on the path to sustainable development, consideration must be given to creating benchmarks that relate to each of the growth management principles. These targets can be used to measure progress and to ensure accountability. They can provide measurable outcomes that would assist in planning at the state, regional and local level, to allocate resources more effectively, and achieve the desired end results as put forth in this State Plan of Conservation and Development.

The Office of Policy and Management, in cooperation with regional planning organizations, local governments, and others, will continue to help bring the C&D Plan to the attention of citizens throughout the state. As part of that effort, a copy of this Plan will be made available on the Office of Policy and Management website at www.opm.state.ct.us/.

Connecticut Greenways Council

Officially Designated Greenways

2001-2003

1) Mianus River Greenway

2) Norwalk Heritage Greenway

3) Pequonnock/Housatonic Railbed Greenway

4) Housatonic Riverbelt Greenway

5) Shepaug Greenway

6) Larkin State Park Trail

7) Naugatuck River Greenway

8) Farmington River Trail

9) Farmington Canal Heritage Greenway

10) Metacomet Ridge System

11) Blue Blazed Trail System

12) Eight Mile River Greenway

13) Hockanum River Linear Park

14) Charter Oak Greenway

15) Hop River State Park Trail

16) Air Line State Park Trail (South Section)

17) Air Line State Park Trail (North Section)

18) Moosup Valley State Park Trail

19) North and South Branches of the Park River

20) Woodbridge Greenway Trails

21) Middlebury Greenway

22) Trolley Trail

23) Quinebaug River Multi-Purpose Trail

24) Shelton Greenway System

25) Colchester Greenway System

26) Scantic River Park

27) Still River Greenway

28) Norwalk River Valley Linear Trail

29) Newtown Greenway System

30) Milford Greenway System

31) Quinnipiac River Greenway

32) Shade Swamp Sanctuary

33) Newington Greenway System

34) Willimantic River Greenway

35) New London Waterfront Walkway/Bikeway

(Greenways map available online at OPM website

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