REGIONAL DEVELOPMENT GUIDE

MIDSTATE REGIONAL PLANNING AGENCY

1978

REGIONAL DEVELOPMENT GUIDE

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M E M B E R S

CROMWELL:	James Ford	Five Briar Court
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DURHAM:	George M. Eames, III	Durham Center
	Stuart W. Keating, Jr.	Old Farms Road
EAST HADDAM:	Mark H. Clayton	Clark Hill Road
EAST HAMPTON:	Frank Walsh	Old Middletown Road
	Edward F. Porteus, Jr.	Wopowog Road - Route 4
HADDAM:	Henry Mannetho	Jacoby Road (Higganum)
	John E. Moore, Sr.	Timms Hill Road
MIDDLEFIELD:	Donald G. Lee	Ross Road (Rockfall)
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	Stanley Krupa	13 Durant Street
	David B. Mylchreest	Laurel Grove Road
PORTLAND:	Herbert Ellsworth	15 Highland Avenue
	William J. Van Beynum	Middle Haddam Road
EX-OFFICIO:	C. James Gibbons	Extension Center (Haddam)

O F F I C E R S

APRIL 5, 1977 - APRIL 4, 1978

Mark H. Clayton	-	Chairman
Robert Chamberlain	-	Vice-Chairman
William J. Van Beynum	-	Secretary-Treasurer

MIDSTATE REGIONAL PLANNING AGENCY

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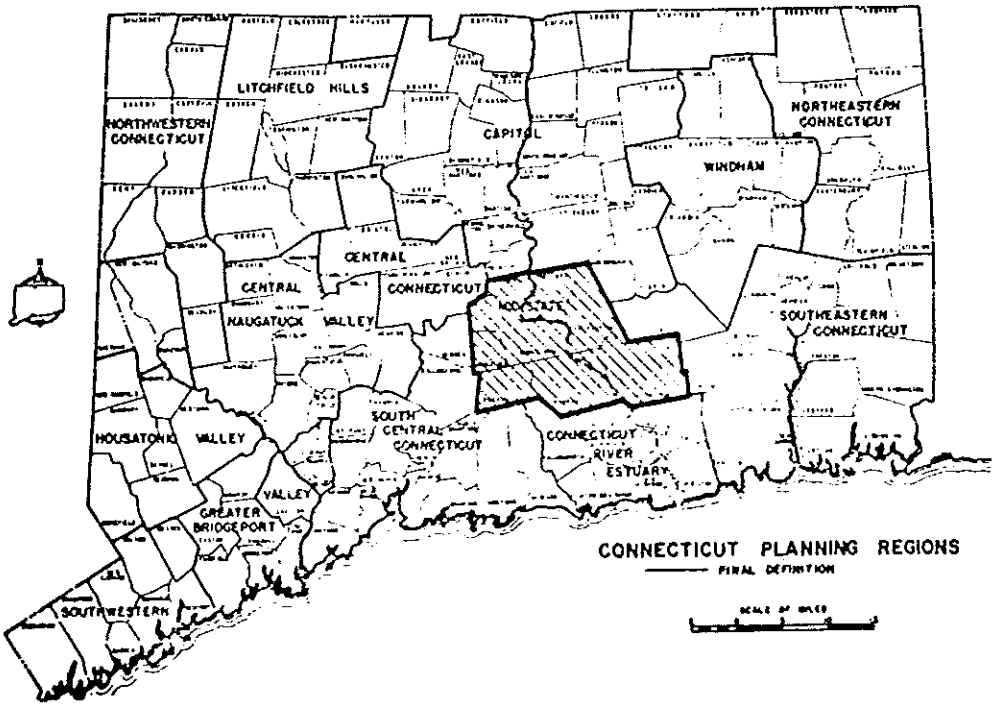
DESCRIPTION OF REGION

The Midstate Regional Planning Agency serves the eight towns of Northern Middlesex County. They are: Cromwell, Durham, East Haddam, East Hampton, Haddam, Middlefield, Middletown and Portland.

The boundaries of the Midstate Planning Region, originally designated as the Northern Middlesex County Region, are determined by the Planning and Budgeting Division of the Department of Finance and Control, State of Connecticut, as specified by Connecticut's regional planning enabling legislation. Factors which are considered in this determination include economic and social interrelationships, common physiographic features, similar community goals, a degree of balance and self-sufficiency, common areas of concern, etc.

The original definition of the Midstate Planning Region included the seven towns of Cromwell, Durham, East Hampton, Haddam, Middlefield, Middletown and Portland. After intensive study and reevaluation of the factors which influenced the region's boundaries, the Connecticut Development Commission, at its meeting of June 21, 1967, redefined the region to include the Town of East Haddam.



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PREFACE

The Regional Development Guide is a summary document that synthesizes much of the previous planning work prepared by the Midstate Regional Planning Agency. Included in this previous work are endorsed functional plans for sewer and water, solid waste management and transportation.

The Development Guide has a marked "physical planning" orientation, which is a major concern of the Agency. Section 8-35A of the Connecticut General Statutes provides that: "Each regional planning agency shall make a plan of development for its area of operation, showing its recommendations for the general use of the area including land use, principal highways and freeways, bridges, airports, parks, playgrounds, recreational areas, schools, public institutions, public utilities and such other matters...". The Development Guide, as is the case with local plans, is subject to continual updating, refinement and revision as new data becomes available. In the near future, the results of Agency functional planning in the areas of air quality, water quality and public transportation will necessitate a major review of the guide.

The agency recognizes that the Regional Development Guide is not a "comprehensive regional plan", but rather, the land use element of a comprehensive planning process being carried out by MRPA and other regional planning bodies, sub-state districts and state agencies. These other organizations plan in such areas as health, criminal justice, aging, energy, human resource development, civil preparedness, etc. Principal activities of the Agency such as coordination, review of plans and projects, citizen participation and technical assistance interrelate with the work of other planning organizations, thus assuring a high level of coordination and plan consistency while creating a climate conducive to plan implementation.

This latter component, i.e. plan implementation, has been given considerable emphasis in the Development Guide. The first chapter, "Goals, Policies, Strategies and Measurable Objectives", contains elements of the ideal, in its long-range goals and policies. Yet it attempts to bridge the gap between these ideal conditions and the real world with rational, and, most important, achievable strategies and measurable objectives. The two combined are the vehicle by which the physical land use plan can become the basis for shaping the future development of the region.

CHAPTER I

REGIONAL DEVELOPMENT GUIDE

GOALS, POLICIES, STRATEGIES AND

MEASURABLE OBJECTIVES FOR FY '79 & '80

CHAPTER I

REGIONAL DEVELOPMENT GUIDE GOALS, POLICIES, STRATEGIES AND MEASURABLE OBJECTIVES FOR FY '79 & '80

Taken in the broadest sense, planning activities as proposed by the Midstate Regional Planning Agency (hereafter referred to as the MRPA) deal not only with the socioeconomic well being of its residents (both present and future); but with the quality of the environment in which the region's population will be living and working.

The basic regional land use plan of the MRPA is represented in-part by the goals and policies outlined in the following chapter. Five broad goals - each having its own supporting policies, strategies and measurable objectives - have been formulated to address the following six basic issues:

E-1) Maintain a balance between man's use of the land and the need to preserve, conserve and protect the Region's natural resources.

PF-1) Provide adequate and efficient systems of public services and facilities for the Region's people, industry and commerce.

T-1) Provide for safe and efficient movement of persons and of goods and services within and throughout the Region.

T-2) Minimize the social, economic and environmental costs of transportation.

ED-1) Achieve sound economic growth by providing sufficient jobs to meet the needs of an expanding population, broad employment opportunities and a diversified economic base.

RD-1) Guide Regional development in an orderly pattern which recognizes the interrelationship between the cultural landscape and the natural environment.

Reference is herein made to the four goals relating to housing found in Housing Element #8 as being an integral part of the five goals enumerated on the preceeding page.

Through effective utilization of the strategies outlined, those items listed as measurable objectives will eventually become implemented; thus providing the identifiable milestones by which the degree of success in each category can be plotted. However, such implementation can only come to fruition through the combined efforts of the various local, state and federal agencies involved.

To this end, the MRPA plans to continue a concentrated effort in working with member municipalities in an advisory capacity, both seeking support from and offering continued assistance to these regional communities to achieve the overall objectives as set forth in this chapter.

GOAL:	ENVIRONMENT (E) - Maintain a balance between man's use of land and the need to preserve, conserve and protect the Region's natural resources.	
POLICY	**STRATEGY**	**FY 79 & FY 80* MEASURABLE OBJECTIVES**
E-1.A. Protect significant wetlands, flood prone areas, water courses and water bodies.	E-1.A.(1) Continue to provide technical assistance to the Region's inland wetlands and water courses agencies in the revision of wetland maps, revision of regulations and review of applications.	E-1.A.(1) New and revised wetland maps and regulations (79 & 80).
	E-1.A.(2) Identify problem areas related to the inland wetland legislation and recommend appropriate legislative changes.	E-1.A.(2) Suggested areas for review by appropriate legislative committee.*
	E-1.A.(3) Continue to provide technical assistance and coordination to member municipalities in the continuing development of HUD flood insurance studies.	E-1.A.(3) Numerous meetings with municipal officials and the general public during key progress points (79 & 80).
	E-1.A.(4) Delineate and map flood prone areas.	E-1.A.(4) Updated regional map at 1" = 2,000' indicating "100 year" flood areas.*
	E-1.A.(5) Develop appropriate land use regulations and guidelines for the use of flood prone areas and floodways in conformance with minimum HUD criteria.	E-1.A.(5) Revised flood prone zoning regulations for communities entering the permanent HUD Flood Insurance Program (79 & 80).
	E-1.A.(6) Under the A-95 procedure review projects for possible negative impacts on the resources.	E-1.A.(6) A-95 comments as appropriate.
E-1.B. Preserve floodways identified through the HUD flood insurance studies.	E-1.B.(1) Same as E-1.A.(1).	E-1.B.(1) Same as E-1.A.(1).
	E-1.B.(2) Same as E-1.A.(3).	E-1.B.(2) Same as E-1.A.(3).

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	E-1.B.(3) Delineate and map floodways.	E-1.B.(3) Updated regional 1" = 2,000' map indicating identified floodways.*
	E-1.B.(4) Develop appropriate regulations related to the encroachment of floodways.	E-1.B.(4) Revised zoning regulations for communities entering the permanent HUD Flood Insurance Program.
	E-1.B.(5) Same as E-1.A.(6).	E-1.B.(5) Same as E-1.A.(6).
E-1.C. Make all waters swimmable and fishable by 1983, and drinkable by 1985.	E-1.C.(1) Determine the degree of pollution attributable to non-point sources of pollution.	E-1.C.(1) Estimation of pollution contributed by erosion and sedimentation sources in a selected drainage basin.*
	E-1.C.(2) Develop a program to control non-point sources of pollution.	E-1.C.(2) Recommend regulations to control erosion and sedimentation for the Midstate Region.*
	E-1.C.(3) Identify appropriate implementation agencies to carry out the elements of the completed 208 plan for non-point sources of pollution.	E-1.C.(3) List of agencies and appropriate measures to be implemented.*
	E-1.C.(4) Coordinate non-point water quality issues with appropriate local, regional and state agencies.	E-1.C.(4) Numerous meetings with local and state agencies (79 & 80).
	E-1.C.(5) Develop an effective citizen participation mechanism related to water quality planning.	E-1.C.(5) Public meetings workshops, newsletters, and hearings (79 & 80).

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	E-1.C.(6) Utilize funds available under the "201" program to conduct studies relating to structural and non-structural solutions to identified pollution problems.	
	E-1.C.(7) Review permits issued under the National Pollutant Discharge Elimination System (NPDES) Program within the Region.	E-1.C.(7) Compilation of yearly permits and locational map.
	E-1.C.(8) Same as E-1.A.(6).	E-1.C.(8) Same as E-1.A.(6).
E-1.D. Protect areas identified as potential surface water impoundment sites and potential ground-water aquifers for water supply purposes.	E-1.D.(1) Complete acquisition of three surface water impoundment sites identified in Durham and partially acquired by the Town.	
	E-1.D.(2) Review identified water impoundment sites with appropriate local and state agencies to determine relevance to water supply or recreational needs and whether acquisition or another course of action is warranted at this time.	E-1.D.(2) Meetings with municipal and state officials (79 & 80).
	E-1.D.(3) Secure federal funding, if possible, for conducting the necessary tests to determine the safe yield and water quality of identified potentially municipally significant ground water aquifers.	E-1.D.(3) Staff memo on the availability of funding for conducting safe yield and water quality tests, and a list of priority sites.
	E-1.D.(4) Acquire well sites in proven ground water aquifers.	

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	E-1.D.(5) Review current water consumption characteristics and projected needs and relate to known surface and ground water resources.	E-1.D.(5) Staff memo.
	E-1.D.(6) Same as E-1.A.(6).	E-1.D.(6) Same as E-1.A.(6).
E-1.E. Protect the quality of surface water supplies and ground water aquifers through proper land management of related watersheds and recharge areas.	E-1.E.(1) Define watersheds to existing and potential surface water sites.	E-1.E.(1) Regional map at 1" = 2,000' with defined watersheds.
	E-1.E.(2) Define recharge areas to existing and potentially municipally significant ground water aquifers.	E-1.E.(2) Review of appropriate literature and discussions with U.S.G.S. Ground Water Division.
	E-1.E.(3) Review existing land uses in water supply watersheds and water supply recharge areas to determine potential point and non-point sources of degradation to water quality.	E-1.E.(3) 1978 Land Use Inventory of subject areas.
	E-1.E.(4) Prepare guidelines for development of watersheds and recharge areas which support water quality standards.	E-1.E.(4) Review of literature for the preparation of guidelines for development of watershed and recharge areas.*
	E-1.E.(5) Review local land use regulations and policies as they relate to E-1.E.(4).	E-1.E.(5) Staff memo defining areas of possible conflict and recommend changes.*
	E-1.E.(6) Same as E-1.A.(6).	E-1.E.(6) Same as E-1.A.(6).

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
E-1.F. Protect regionally unique scenic and natural features.	E-1.F.(1) Continued participation of East Haddam and Haddam in the Connecticut River Gateway Commission (CRGC).	
	E-1.F.(2) Promote CRGC Standards and preservation objectives in the other towns abutting the Connecticut River outside the Gateway Zone.	E-1.F.(2) Meeting with Middletown, East Hampton, Portland and Cromwell (79 & 80).
	E-1.F.(3) Continue to provide staff assistance in support of CRGC priority area acquisition program.	E-1.F.(3) Updated property ownership maps and informational literature.
	E-1.F.(4) Continue assisting Gateway towns of the Midstate Region to conform with Gateway Zoning Standards and procedures.	E-1.F.(4) Review of zoning applications which require review under the CRGC Standards.
	E-1.F.(5) Delineate and map regionally and municipally significant ridge tops and vistas.	E-1.F.(5) Map of ridge tops and vistas.*
	E-1.F.(6) Review municipal development policy to determine compatibility with Gateway acquisition areas and areas defined under E-1.F.(5).	E-1.F.(6) Staff memo defining areas for possible change for review by local planning and zoning commissions.
	E-1.F.(7) Same as E-1.A.(6).	E-1.F.(7) Same as E-1.A.(6).
E-1.G. Protect prime agricultural lands.	E-1.G.(1) Map prime agricultural soils and agricultural land use by type.	E-1.G.(1) 1" = 2,000' map with information plotted.
	E-1.G.(2) Review alternative mechanisms for preservation of agricultural lands with special emphasis on alternatives usable by Midstate Region's municipalities.	E-1.G.(2) Staff memo on alternatives.

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	E-1.G.(3) Review and update existing zoning regulations to recognize the major types of agricultural pursuits and their relationships to residential developments.	E-1.G.(3) Several revised local zoning regulations (79 & 80).
	E-1.G.(4) Coordinate with the State Task Force for the preservation of agricultural lands and appropriate legislative committee(s).	E-1.G.(4) Several meetings and correspondence.
	E-1.G.(5) Draft environmental performance standards for local zoning regulations regarding erosion and sedimentation.	E-1.G.(5) Model regulations.*
	E-1.G.(6) Same as E-1.A.(6).	E-1.G.(6) Same as E-1.A.(6).
E-1.H. Maintain and encourage continued expansion of state-owned park and forest lands.	E-1.H.(1) Encourage development of state parks and forests within their environmental limits and provide for effective management of them.	
	E-1.H.(2) Coordinate with DEP officials to identify key areas for further acquisition.	E-1.H.(2) Coordination meeting(s) and revision to Regional Development Guide--proposed land use.*
E-1.I. Direct development away from environmentally sensitive areas.	E-1.I.(1) Implement the adopted Solid Waste Management Plan.	E-1.I.(1) Have three of Midstate Region's towns in substantial conformance.
	E-1.I.(2) Locate septic sludge disposal facilities to areas which will not adversely impact environmentally sensitive areas.	E-1.I.(2) Provide technical assistance to the Region's elected officials.
	E-1.I.(3) Assist member municipalities to adopt innovative land management regulations such as PRD, PUD, density zoning, cluster development, transfer development rights, agricultural zoning, etc.	E-1.I.(3) Newly adopted or substantially revised regulations (1).*

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	E-1.I.(4) Review local land use regulations and identify areas of potential conflict.	E-1.I.(4) Staff memo.*
	E-1.I.(5) Make appropriate local officials aware of possible conflicts between public policy and possible conflicts with protection of environmentally sensitive areas.	E-1.I.(5) Meetings with appropriate local officials on subject.
	E-1.I.(6) Same as E-1.A.(6).	E-1.I.(6) Same as E-1.A.(6).
E-1.J. Encourage recreational development of publicly owned land compatible with the natural resource capacity of the site.	E-1.J.(1) Determine the environmental capacity of key publicly owned land with potential for recreational development.	
	E-1.J.(2) Review the Statewide Comprehensive Outdoor Recreation Plan (SCORP) for indications of recreation needs.	E-1.J.(2) Staff review.
	E-1.J.(3) Assist in the comprehensive revision of SCORP to identify development needs.	E-1.J.(3) Revise Midstate section in SCORP.

GOAL:	PUBLIC FACILITIES (PF) - Provide adequate and efficient system of public services and facilities for the Region's people, industry and commerce.	
POLICY	**STRATEGY**	**FY 79 & FY80* MEASURABLE OBJECTIVES**
PF-1.A. Provide public sewer and water services to areas where growth is projected to occur and where the land is suitable for such development.	PF-1.A.(1) Expand sewer and water service areas to be consistent with overall facilities plans and capacities of the water pollution control plant and adequate supplies of potable water.	PF-1.A.(1) Current facilities plans for Cromwell, East Hampton, Middletown, and Portland.
	PF-1.A.(2) Zone areas indicated on the facilities plans as not being within future sewer and water service areas at such densities that development will not exceed the environmental carrying capacity of the land to provide long-term potable water and disposal of sewage effluent.	PF-1.A.(2) Review of local zoning practices as they regard non-sewer and water service areas.
	PF-1.A.(3) Analyze physical characteristics of land which will ultimately be serviced by sewer and water to identify environmentally sensitive areas and areas which can support increased densities.	PF-1.A.(3) Map indicating the results of strategy.
PF-1.B. Provide public sewer and water services to areas where pollution presently exists and cannot be resolved by non-structural solutions or are within the planned service areas.	PF-1.B.(1) Review local health department, State Health Department and DEP records for identified areas of pollution.	PF-1.B.(1) Map indicating the results of the survey.*
	PF-1.B.(2) Compare results of pollution survey--B.(1)--with facilities plans and determine which areas cannot be easily serviced by utility expansions and would lend themselves to a study of non-structural solutions.	PF-1.B.(2) Classification of pollution problem areas as to solution alternatives.*

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	PF-1.B.(3) Assist towns in obtaining federal funding for facilities planning or planning of non-structural alternatives.	PF-1.B.(3) One application for EPA "201" funding.*
PF-1.C. Preserve identified municipally significant ground water resources and potential surface water impoundment sites which will assist in meeting future potable water needs of the Region.	PF-1.B.(1) Same as E-1.D.(2).	PF-1.B.(1) Same as E-1.D.(2).
	PF-1.B.(2) Same as E-1.D.(3).	PF-1.B.(2) Same as E-1.D.(3)
	PF-1.B.(3) Same as E-1.D.(4).	PF-1.B.(3) Same as E-1.D.(4).
	PF-1.B.(4) Same as E-1.D.(5).	PF-1.B.(4) Same as E-1.D.(5).
	PF-1.B.(5) Same as E-1.D.(6).	PF-1.B.(5) Same as E-1.D.(6).
PF-1.D. Provide for solid waste disposal at reasonable costs, reliable service, minimal environmental degradation and land consumption with a maximum of resource recovery, maximum participation by private enterprise and maximum public acceptance.	PF-1.D.(1) Continue coordination with the Connecticut Resource Recovery Authority (CRRA), the Connecticut Department of Environmental Protection (DEP) and MRPA municipalities toward implementation of the plan for a statewide resource recovery system.	PF-1.D.(1) One additional municipality adopt resolution to negotiate with CRRA for future participation in the statewide resource recovery system (four of eight municipalities).*

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	PF-1.D.(2) Work with the City of Middletown and adjacent municipalities such as Cromwell possibly Haddam to establish a regional solid waste disposal facility or transfer station.	PF-1.D.(2) Selection and preliminary engineering studies and design for a solid waste disposal system for three municipalities. (79)
	PF-1.D.(3) Work with the Town of East Haddam toward completion of a permanent solid waste transfer station.	PF-1.D.(3) Construction of transfer station. (79)
	PF-1.D.(4) Coordinate with East Hampton and Haddam (as an alternative to (2) above) in negotiations with East Haddam for possible joint use of the East Haddam transfer station.	PF-1.D.(4) Selection of solid waste disposal alternatives for East Hampton and Haddam. (79)
	PF-1.D.(5) Encourage sound sanitary landfill management practices in Portland, Durham and Middlefield.	PF-1.D.(5) Conformance to operations plans as set forth in "Twenty Year Solid Waste Management Plan for Midstate Connecticut". (three towns) (79)
	PF-1.D.(6) Assist Cromwell and Middletown in phasing out landfill operations in conformance with closing plans prepared as part of "Twenty Year Solid Waste Management Plan for Midstate Connecticut.	PF-1.D.(6) Final closing of Cromwell and Middletown landfills.*
	PF-1.D.(7) Assist East Hampton and Haddam in planning for phasing out landfill operations in conformance with DEP Guidelines.	PF-1.D.(7) Final closing, plans prepared. (79)
	PF-1.D.(8) Promote the continuation of existing recycling programs and institution of new methods such as curbside collection of recyclables, and other source separation techniques.	PF-1.D.(8) Staff update of new recycling markets and attendance at local solid waste committee meetings. (79)

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	PF-1.D.(9) Assist the state in carrying out the planning requirements of the Resource Conservation and Recovery Act of 1976 (RCRA) (i.e. including formulating state plan for hazardous waste management).	PF-1.D.(9) Staff attendance at meeting of ad hoc committee on RCRA planning requirements. (79)
PF-1.E. Facilitate intermunicipal cooperation in the provision of public services and facilities to achieve economies of scale and efficient management.	PF-1.E.(1) Review with chief elected officials current identified areas of intermunicipal concern and cooperation.	PF-1.E.(1) Midstate Council of Governments (MCOG) meetings.
	PF-1.E.(2) Complete the five-year Transit Development Plan (TDP).	PF-1.E.(2) Adopted plan and application for capital and operating funds.
	PF-1.E.(3) Promote the creation of a three town Transit District.	PF-1.E.(3) Cromwell, Middletown, Portland Transit District.*
	PF-1.E.(4) Continue implementation of the adopted Solid Waste Management Plan.	PF-1.E.(4) Towns in conformance with long-range plan.*
	PF-1.E.(5) Study the future water needs of Middletown and identify options for providing additional water supply sources from Cromwell.	PF-1.E.(5) Staff report.*
	PF-1.E.(6) Review relationship of Middletown sewer and water service areas to areas in Middlefield requiring such services.	PF-1.E.(6) Correspondence

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	PF-1.E.(7) Review with East Hampton and Portland officials the alternatives for providing long-range sewer service in the Great Hill area of Portland.	PF-1.E.(7) Review of MRPA ultimate utility service areas.
	PF-1.E.(8) Update priorities for Transportation Improvement Program (TIP) for the urbanized areas on a regional basis.	PF-1.E.(8) Annual TIP revision.
	PF-1.E.(9) Continue technical assistance to MCOG to discuss and resolve areas of common concern.	PF-1.E.(9) Six meetings.
	PF-1.E.(10) Continue RPA involvement with the whole host of regional organizations--MCDC, ECDC, GMCC, CAGM, MAB, GMPT, etc.	PF-1.E.(10) Make effective coordination.
PF-1.F. Provide sites for community facilities reflecting existing and future needs	PF-1.F.(1) Review state and local holdings in the region and determine if the various departments have plans for expansion and the capacity of such holdings to accommodate such plans. (State Parks, Forests, Long Lane, Haddam Jail, power plants, CVH, etc.)	PF-1.F.(1) Inventory sheet of short and long-range plans.*
	PF-1.F.(2) Review local plans for expansion needs--administration, buildings, schools, recreation areas, etc.	PF-1.F.(2) Inventory sheet of short and long-range plans.*
	PF-1.F.(3) Encourage municipalities to undertake necessary municipal facilities studies to determine future land requirements.	PF-1F.(3) List of municipalities which need update facilities plans.*

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
PF-1.G. Provide for disposal of special organic wastes following the policies in PF-1.D. above.	PF-1.G.(1) Sewage Sludge - (a) In municipalities with sewage treatment plants, encourage sewage sludge composting or utilization as a soil conditioner where environmentally acceptable. (b) Identify sites suitable for disposal of sewage sludge.	PF-1.G.(1) Staff technical assistance to municipalities in selection of appropriate methods and identification of sites. (79)
	PF-1.G.(2) Septic Tank Pumpings - (a) In municipalities with sewage treatment plants, continue processing septic tank pumpings. (b) Other municipalities establish jointly-used anaerobic digestion pits or septic lagoons where environmentally sound and socially and politically acceptable.	PF-1.G.(2) Staff technical assistance to municipalities and MCOG. (79) Construction of one anaerobic digestion pit or septic lagoon in the Region.*
	PF-1.G.(3) Leaves - Municipalities begin or continue collection and composting of leaves as a separate operation.	PF-1.G.(3) Staff assistance to municipalities. (79)
	PF-1.G.(4) Brush - Municipalities initiate or continue disposal of brush, small trees, stumps, etc., in separate areas, apart from sanitary landfills. Encourage chipping of brush for mulch and cutting larger logs into firewood.	PF-1.G.(4) Staff assistance to municipalities. (79)
PF-1.H. Promote the acquisition of sufficient land to meet existing and future recreational needs.	PF-1.H.(1) Review the status of the Region's various open space and recreation plans to determine the extent of fulfillment of prepared projects.	PF-1.H.(1) Staff memo.
	PF-1.H.(2) Initiate or update plans for towns which lack open space and recreation plans or have outdated plans.	PF-1.H.(2) Staff memo to municipalities indicating fundings for PF-1.H.(1).*

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	PF-1.H.(3) Provide technical assistance to municipalities in the development of input to the SCORP.	PF-1.H.(3) Meetings with public officials.
	PF-1.H.(4) Sponsor public hearings on the development of the SCORP with invitations to public and private conservation, recreation, wildlife, and sportsmen's groups.	PF-1.H.(4) Region-wide public hearings.
	PF-1.H.(5) Survey the various population segments to identify recreation needs.	
	PF-1.H.(6) Survey the facilities and utilization of public recreation areas including school properties.	
	PF-1.H.(7) Translate recreation needs into acreage requirements, including service area considerations.	
	PF-1.H.(8) Review the availability and suitability of municipally-owned land to meet identified recreation acreage needs (reference PF-1.H.(7).	
PF-1.I. Promote regional cooperation in the delivery of services related to human resource development.	PF-1.I.(1) Participate in board activities of GMCC, MCT, CAGM, MRCA, MAB, etc.	PF-1.I.(1) Board meetings with noted organizations.
	PF-1.I.(2) Participate in public hearings and workshops, etc. of the Interagency Council, Area Agency on Aging (AAA), Health Systems Agency (HSA), etc.	PF-1.I.(2) Various meetings.

GOAL: TRANSPORTATION (T) - Provide for safe and efficient movement of persons and of goods and services within and through the Region.

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
T-1.A. Achieve modal balance in person transport.	T-1.A.(1) Develop recommendations for establishing public transportation services within the urbanized area.	T-1.A.(1) An operating transit system within the urbanized area.
	T-1.A.(2) Form a regional transit district and authority.	T-1.A.(2) An operating regional transit district.
	T-1.A.(3) Provide technical assistance to Middlesex County Transportation, Inc. (MCT) in its operation of specialized transportation services for the elderly and handicapped.	T-1.A.(3) Continuing operation of services by MCT.
	T-1.A.(4) Encourage use of commuter bus services and monitor performances.	T-1.A.(4) Increased ridership of commuter buses and expanded commuter services.
	T-1.A.(5) Identify the need for bicycle and pedestrian facilities in the urban area and encourage and assist community development of them.	T-1.A.(5) A bicycle system plan and capital development program.
T-1.B. Reduce congestion in urban area travel.	T-1.B.(1) Encourage removal of unnecessary traffic control devices and install, modify and coordinate controls as necessary.	T-1.B.(1) Elimination of four-way stops at most intersections and of traffic signals at select locations; elimination of exclusive walk signals, and coordination of traffic signals.*
	T-1.B.(2) Encourage the elimination of angle parking in high congestion zones.	T-1.B.(2) Substitution of parallel parking for angle parking in the Middletown CBD.*

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	T-1.B.(3) Encourage the development of local routes for bypassing high congestion areas.	T-1.B.(3) Construction of essential links of a CBD loop system in Middletown.
	T-1.B.(4) Install minor improvements to facilitate traffic flow where feasible.	T-1.B.(4) Delineation of turning lanes, street channelization, and implementation of similar improvements at select locations.
T-1.C. Improve the compatibility of land uses and the roadway network serving them.	T-1.C.(1) Encourage the adoption of local planning and zoning codes in favor of concentrating urban development to minimize sprawl, limit the growth in urban area travel demand, and achieve transit supporting population densities.	T-1.C.(1) Draft codes for local consideration.
	T-1.C.(2) Encourage the adoption of local requirements for sound site design to minimize adverse traffic impacts.	T-1.C.(2) Model site plan review regulations for towns now lacking them.
	T-1.C.(3) Encourage the consolidation and definition of curb cuts serving commercial uses along arterial highways.	T-1.C.(3) Staff report of recommended improvements.
	T-1.C.(4) Apply strategy T-1.B.(2).	T-1.C.(4) Same as T-1.B.(2).
T-1.D. Provide sufficient system capacity to satisfy projected ten-year regional travel demand.	T-1.D.(1) Develop realistic assumptions about future development opportunities and constraints.	T-1.D.(1) Staff memo detailing assumptions.
	T-1.D.(2) Develop reasonable projections of demographic, socio-economic, land use, and trip characteristics.	T-1.D.(2) Staff report documenting demographic, socio-economic, land use and trip characteristics to the year 2000.

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	T-1.D.(3) Develop a priority list of system improvements to overcome system deficiencies.	T-1.D.(3) A staff report presenting project priorities and documenting the methodology used to develop them.
T-1.E. Provide for the efficient movement of goods within and through the Region.	T-1.E.(1) Coordinate with business and industry and with public regulatory and planning bodies to identify needs, deficiencies, and practical solutions to problems in freight and product movement.	T-1.E.(1) Staff report on needs identified and possible solutions.*
	T-1.E.(2) Reduce competing demands on the transportation system by encouraging scheduling and operational improvements in shipping and local distribution.	T-1.E.(2) Staff report on practical actions available to the industry.*
	T-1.E.(3) Encourage the siting of rail freight users and the upgrading of rail services to existing and attracted users.	T-1.E.(3) Increased freight tonnage moved by rail, and delivery of service consistent with needs.*
T-2.A. Provide for the special needs of the transportation disadvantaged.	T-2.A.(1) Encourage the coordination of existing special transportation services to reduce duplication and under-utilization of capital equipment and operations overhead.	T-2.A.(1) An operating system under single dispatch control and unified management.*
	T-2.A.(2) Monitor the development of housing and social services available to the transportation disadvantaged and the suitability of access to them.	T-2.A.(2) Recommendations for route and service adjustments as necessary.

GOAL:		
POLICY	**STRATEGY**	**FY 79 & FY 80* MEASURABLE OBJECTIVES**
	T-2.A.(3) Assist public and private operators of transportation services in preparing appropriate applications for capital and/or operating assistance.	T-2.A.(3) Grant applications for capital and operating assistance as appropriate.
T-2.B. Increase the occupant-to-vehicle ratio in urban area travel.	T-2.B.(1) Encourage the institution of carpooling, vanpooling, subscription bus services, and the further development of commuter bus and general public transportation.	T-2.B.(1) Acquisition of vans for pooling; and active van and carpooling programs to major employers.*
	T-2.B.(2) Determine the need for additional commuter parking lots and appropriate locations where need is indicated.	T-2.B.(2) Staff report detailing the need for additional commuter parking lots and appropriate sites.
	T-2.B.(3) Encourage the restriction of parking supply and the institution of preferential parking for high occupancy vehicles.	T-2.B.(3) Staff recommendations for parking management.
T-2.C. Increase the energy efficiency of urban area travel.	T-2.C.(1) Apply strategies T-1.A.(1), (4), and (5); T-1.B.(1), (3), and (4); T-1.C.(1); T-1.E.(2); and T-2.B.(1), (2) and (3).	T-2.C.(1) See objectives corresponding to strategies referenced under T-2.C.(1).
	T-2.C.(2) Support legislation mandating energy conserving practices for motor vehicles.	T-2.C.(2) Correspondence and resolutions of support.
T-2.D. Reduce transportation generated air pollution.	T-2.D.(1) Apply strategies T-1.A.(1), (4), and (5); T-1.B.(1), (2), (3), and (4); T-1.D.(3); T-2.B.(1), (2), and (3); and T-2.C.(2).	T-2.D.(1) See objectives corresponding to strategies referenced under T-2.D.(1).

GOAL:		
POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	T-2.D.(2) Support legislation mandating increased automotive emission controls and development of practical regulations , controlling auto related stationary and indirect sources of pollution.	T-2.D.(2) Correspondence and resolutions of support.

GOAL:	ECONOMIC DEVELOPMENT (ED) - Achieve sound economic growth by providing sufficient jobs to meet the needs of an expanding population, broad employment opportunities and a diversified economic base.	
POLICY	**STRATEGY**	**FY 79 & FY 80* MEASURABLE OBJECTIVES**
ED-1.A. Provide suitable land to accommodate 17,000 additional jobs by the year 2000.	ED-1.A.(1) Review and analyze existing commercial and industrial zoning patterns and regulations affecting buildable vacant land.	ED-1.A.(1) Staff technical memo.
	ED-1.A.(2) Relate results of activities under ED-1.A.(1) to Connecticut Department of Transportation (CONN DOT) employment projections.	ED-1.A.(2) Staff technical memo.
	ED-1.A.(3) Relate major employment zones to the proposed transit service areas indicated in the Transit Development Program (TDP) and the ease of expanding service.	ED-1.A.(3) Review of TDP and changes in MRPA transportation plan or adjustments to CONN DOT projections.
	ED-1.A.(4) Revise industrial and commercial zoning designations and regulations to reflect projections.	ED-1.A.(4) Three municipal zoning regulations revised to reflect the results of activities A.(1), A.(2), and A.(3).
ED-1.B. Encourage public acquisition of land for industrial park development purposes.	ED-1.B.(1) Same as RD-1.C.(4).	ED-1.B.(1) Same as RD-1.C.(4).
	ED-1.B.(2) Same as RD-1.C.(5).	ED-1.B.(2) Same as RD-1.C.(5).
	ED-1.B.(3) Identify MRPA communities where municipal industrial park development is feasible.	ED-1.B.(3) Staff memo on status of economic development planning in each town.*
	ED-1.B.(4) Prepare feasibility studies of potential industrial park areas.	

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	ED-1.B.(5) Continue to cooperatively provide technical assistance to municipal economic development agencies with Middlesex County Development Council (MCDC) to implement local plans which are consistent with regional policy.	ED-1.B.(5) Staff meeting with local and state officials.
ED-1.C. Provide for resource extraction activities to be carried on in a manner compatible with the future development of abutting properties, the zoning classification of the area, and with an acceptable level of environmental impact during operation.	ED-1.C.(1) Identify major resource extraction activities and the regulations they are subject to.	ED-1.C.(1) Staff memo.*
	ED-1.C.(2) Identify areas in the existing zoning regulations which can be strengthened to assure the appropriate reclamation of the land and control operating impacts.	
	ED-1.C.(3) Review zoning classification of areas where major resource extraction is carried on.	
ED-1.D. Assist expanding small industry, home occupations and cottage industries to locate in suitable space with an appropriate zoning classification.	ED-1.D.(1) Foster closer relationship between local economic development agencies, small businesses in their communities, and MCDC.	ED-1.D.(1) Coordination meetings.*

GOAL:		
POLICY	**STRATEGY**	**FY 79 & FY 80* MEASURABLE OBJECTIVES**
	ED-1.D.(2) Identify, through zoning enforcement officers, those activities which no longer comply with local zoning regulations' definitions of a "home occupation" for possible technical assistance.	
	ED-1.D.(3) Encourage municipalities with industrial park development to establish feasible building space for lease to small enterprises.	
ED-1.E. Maintain the high percentage of the Region's labor force (70.0%) that work within the Region.	ED-1.E.(1) Same as ED-1.D.(1).	ED-1.E.(1) Same as ED-1.D.(1).
	ED-1.E.(2) Same as RD-1.C.(4).	ED-1.E.(2) Same as RD-1.C.(4).
	ED-1.E.(3) Same as RD-1.C.(5).	ED-1.E.(3) Same as RD-1.C.(5).
	ED-1.E.(4) Modify existing zoning regulations to remove obstacles, if appropriate, which discourage the location or relocation of industry and business in the Region.	ED-1.E.(4) Staff paper on constraints.*
ED-1.F. Maintain the Middletown Central Business District as the regional retail and service center.	ED-1.F.(1) Support a plan for upgrading Route 9 which is supportive of continuing Middletown CBD as a regional center.	ED-1.F.(1) Adopted Transportation Plan.

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	ED-1.F.(2) Expedite road improvements of a non-expressway nature listed on the Region's TIP which will facilitate through and local service around and through the CBD.	ED-1.F.(2) Revised TIP letters of support for early implementation.
	ED-1.F.(3) Implement the Region's adopted TDP for public transportation.	ED-1.F.(3) File application with Urban Mass Transportation Administration (UMTA) for capital and operating costs.
	ED-1.F.(4) Encourage the use of Community Development Block Grant (CDBG) and Local Public Works (LPW) funds to provide amenities to the CBD to enhance its attractiveness as a place to shop, work and live.	ED-1.F.(4) A-95 reviews of applications.
ED-1.G. Encourage the revitalization and enhancement of the existing community centers throughout the Region.	ED-1.G.(1) Prepare sub-area plans for targeted areas.	ED-1.G.(1) Plans for Cromwell, East Hampton, and Portland.
	ED-1.G.(2) Review the applicability of CDBG and LPW programs as a means of implementing portions of the plans.	ED-1.G.(2) Prepare (2) discretionary fund applications.*
	ED-1.G.(3) Review existing zoning and community facilities policies for targeted areas.	
ED-1.H. Discourage the commercial zoning of land which is in excess of reasonable expectations for providing adequate service to the resident population or which is not consistent with a comprehensive policy for commercial development.	ED-1.H.(1) Review existing commercial zoning districts and regulations affecting buildable vacant land.	ED-1.H.(1) Staff memo.

GOAL:

POLICY	STRATEGY	FY 79 & FY80* MEASURABLE OBJECTIVES
	ED-1.H.(2) Compare zoned commercial acreage with that necessary to meet resident population needs.	ED-1.H.(2) Staff memo.
	ED-1.H.(3) Identify areas zoned which will serve a regional or intra-regional population.	ED-1.H.(3) Staff memo.
	ED-1.H.(4) Rezone areas, as appropriate, in accordance with a commercial land development policy.	ED-1.H.(4) Review of commercial land development policy in two towns.*
ED-1.I. Coordinate the various vocational, educational and training programs to meet the needs of the Region's economy and to keep such programs current.	ED-1.I.(1) Participate in the MAB.	ED-1.I.(1) MAB meeting as COG alternate.
	ED-1.I.(2) Provide manpower planning groups and program development people with background data.	ED-1.I.(2) Updated data base.

GOAL: REGIONAL DEVELOPMENT PATTERN (RD) - Guide regional development in an orderly pattern which recognizes the interrelationship between the cultural landscape and the natural environment.

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
RD-1.A. Confine urban development patterns and densities to portions of Cromwell, East Hampton, Middletown and Portland.	RD-1.A.(1) Establish a viable public transportation system for the urban portion of the Region.	RD-1.A.(1) File applications for capital grants to establish system.
	RD-1.A.(2) Continue to prepare and update sewer and water facilities plans to provide short-range construction programming.	RD-1.A.(2) Continue regional review of "201" type studies as completed by consultants.
	RD-1.A.(3) Expand sewer and water facilities in accordance with plans prepared under RD-1.A.(2).	RD-1.A.(3) Under A-95 comment on applications for sewer and water expansions as to conformance with "201" plans.
	RD-1.A.(4) Secure and protect potable water supplies sufficient to meet anticipated future needs.	
	RD-1.A.(5) Provide for residential densities not less than 2.0 dwelling units per acre in areas with sewer and water.	RD-1.A.(5) Staff memo on local zoning practices where there exists a conflict with strategy.
RD-1.B. Limit development patterns and densities to less-than-urban in Durham, East Haddam, Haddam and Middlefield.	RD-1.B.(1) Provide for residential densities which are capable of being supported by the environmental carrying capacity of the land to provide on-site potable water supply and on-site disposal of sewage effluent without causing pollution or hazard to health.	RD-1.B.(1) Staff memo reviewing current literature regarding environmental carrying capacity for on-site services and a review of current municipal land use policy as it relates to conclusions of literature review.*
	RD-1.B.(2) Where areas of pollution are identified, study non-structural solutions.	

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	RD-1.B.(3) Provide specialized transportation in coordination with general public transit proposed for the urban areas of the Region.	RD-1.B.(3) Inclusion of Middlesex County Transportation, Inc. into a coordinated regional transit system.*
	RD-1.B.(4) Promote inter-municipal solutions and cooperation to solve common problems and achieve economies of scale.	
RD-1.C. Locate commercial and industrial development relevant to their need for public utilities and transportation facilities and services.	RD-1.C.(1) Identify discharge characteristics of industry by Standard Industrial Classification (SIC) category.	RD-1.C.(1) Staff memo indicating SIC categories by discharge characteristics.
	RD-1.C.(2) Review the availability of utility services to existing industrially and commercially zoned areas and the land characteristics of these areas.	RD-1.C.(2) Staff memo with appropriate maps and descriptive materials.
	RD-1.C.(3) Preliminarily assign SIC categories to the major grouping of industrially and commercially zoned land.	RD-1.C.(3) Staff memo.
	RD-1.C.(4) Support the economic planning activities of the Middlesex County Development Council (MCDC), and the annual update of the Overall Economic Development Plan (OEDP).	RD-1.C.(4) Continue meeting with OEDP Committee and MCDC Board of Directors.
	RD-1.C.(5) Continue and expand the functions of INFORM (Industry For Middletown) and MIDC (Middletown Industrial Development Corporation) to other interested communities.	

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	RD-1.C.(6) Review industrially zoned areas and particularly those with immediate potential for development as to their adequacy of supporting transportation facilities and services.	RD-1.C.(6) Annual update of regional transportation plan.
RD-1.D. Within urban areas discourage development patterns which are costly to service with public utilities, consume excessive amounts of land, and encroach upon our natural resources.	RD-1.D.(1) Define neighborhoods and communities by preserving key natural features.	RD-1.D.(1) Refine such areas on the proposed land use for the Regional Development Guide.*
	RD-1.D.(2) Concentrate development on land which is most suited for such purposes through the use of innovative land development regulations.	RD-1.D.(2) Staff memo on the feasibility of using transfer development rights in the Midstate Region.*
	RD-1.D.(3) Clearly establish the desirable limits of utility extensions and require that all development within the proposed service areas extend utilities to the proposed development or provide a mechanism to increase densities at a later date when such utilities are made available.	RD-1.D.(3) Review in detail with local officials existing policy for sewer and water expansion--staff memo and revised sewer and water service area map.
RD-1.E. Through the use of technological advances for the provision of potable water and disposal of sewage effluents increase densities in selected non-urban areas.	RD-1.E.(1) Through the use of detailed soils hydrologic and geologic information identify areas with minimal environmental constraints which might support higher densities of development.	RD-1.E.(1) Map indicating areas of minimal environmental constraints.*

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	RD-1.E.(2) Identify water supply potentials which could be developed to provide service to selected areas.	RD-1.E.(2) Staff memo.*
	RD-1.E.(3) Review with state officials approved alternative systems or systems under review for disposal of sewage effluent.	RD-1.E.(3) Meetings with DEP and staff memo outlining conclusions.
	RD-1.E.(4) Identify acceptable management options to DEP for the operation of approved sewage disposal systems.	RD-1.E.(4) Same as RD-1.E.(3).
	RD-1.E.(5) Review the applicability of E.(3) and E.(4) to existing high density development in non-urban areas.	RD-1.E.(5) Revision to utility section of Regional Development Guide.
	RD-1.E.(6) Adopt and implement innovative land development regulations.	RD-1.E.(6) Adoption by one additional municipality of PRD or similar regulations.
RD-1.F. Provide employment opportunities for non-urban areas within the capacity of the environment to support such uses.	RD-1.F.(1) Coordinate with MIDC and local economic development groups to review data produced under RD-1.C.(1) through RD-1.C.(6).	RD-1.F.(1) Meeting(s) with MCDC and local commissions.
	RD-1.F.(2) Coordinate with DEP regarding applications of prospective employers regarding NPDES procedure.	RD-1.F.(2) Review of permit applications.
	RD-1.F.(3) Assist communities to carry on a planned program of economic development.	RD-1.F.(3) Industrial Park in Middlefield 50.0% filled.* Approved Industrial Subdivision in Durham.

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
RD-1.G. Encourage member municipalities to conform to the residential densities and other land use allocations indicated on the proposed land use map of the Regional Development Guide.	RD-1.G.(1) Review existing municipal land use policy to identify areas of inconsistencies or possible inconsistencies between them and the proposed regional land use.	RD-1.G.(1) Map indicating conflict areas.
	RD-1.G.(2) Meet with local land use decision making bodies to review regional land use plan and exchange concepts.	RD-1.G.(2) Series of meetings with local land use decision making bodies.
	RD-1.G.(3) Hold public hearing(s) on proposed regional land use to receive public input.	RD-1.G.(3) Public hearing(s) on proposed land use.
	RD-1.G.(4) Evaluate public impact and respond accordingly with appropriate revisions.	RD-1.G.(4) Prepare revised regional land use plan.
	RD-1.G.(5) Assist towns to revise land use policy documents to conform with Regional Land Use Guide.	RD-1.G.(5) Revise local land use plans.*
RD-1.H. Encourage municipal land development policy to provide for adequate retailing and services to meet local and vicinity needs.	RD-1.H.(1) Analyze the availability of utilities to existing commercial zones.	RD-1.H.(1) Staff memo and mapping.
	RD-1.H.(2) Determine the amount of commercially zoned vacant land and its physical limitations for development.	RD-1.H.(2) Staff memo and mapping.
	RD-1.H.(3) Compare existing and future commercial land requirements to service the market area to existing zoning and determine the adequacy of the current commercial land use policy.	RD-1.H.(3) Staff memo.

GOAL:

POLICY	STRATEGY	FY 79 & FY 80* MEASURABLE OBJECTIVES
	RD-1.H.(4) Review the locational aspects of the existing commercial land use policy in regard to transportation adequacy.	
	RD-1.H.(5) Recommend to municipalities changes in the amount of commercial land or alternative locational considerations.	RD-1.H.(5) Review regional land use plan.
	RD-1.H.(6) Complete adoption process so land use is a legal document in conformance with Connecticut General Statutes.	RD-1.H.(6) Adopted regional land use plan.
	RD-1.H.(7) Use adopted land use plan as a policy for review of A-95 comments.	RD-1.H.(7) A-95 comments.
RD-1.I. Preserve, protect and conserve regionally significant, environmentally sensitive areas and unique features as the framework for the regional development pattern.	RD-1.I.(1) Recognize that man's modification of the natural environment is permanent, for all purposes, and such alterations should be made only after a thorough assessment of the impact on the resource.	RD-1.I.(1) Review of environmental assessments on all federally funded projects.
	RD-1.I.(2) Remove conflicting land use policy deisgnations from identified environmentally sensitive and unique areas as well as reductions in the intensity of uses.	RD-1.I.(2) Staff memo and mapping identified conflicts.
	RD-1.I.(3) Utilize such regulatory tools as flood plain zoning, inland wetland regulations, agricultural zoning, low-density residential zoning, ridge top zoning, etc.	RD-1.I.(3) Staff memo on appropriate land use controls for protecting environmentally sensitive areas and unique features.

C H A P T E R I I

BASIC PLANNING DATA

C H A P T E R I I

SECTION 1

POPULATION

POPULATION

The household population of the Midstate Region was estimated to total 88,400 persons as of January, 1976. The population of Middletown, an estimated 40,050 persons, comprised 45.31% of the Region's total household population. Cromwell, the next most populous town, had an estimated population of 10,400 persons, or 11.76% of the total Midstate household population. Middlefield had the smallest household population in the Region, having only 4,250 residents or 4.81% of the regional total.

Growth, 1970 to 1976

The municipalities in the Midstate Region have experienced varying rates of population increase from 1970 to 1976. Natural increase due to the difference between births and deaths, and net in-migration are generally considered to be the main factors which generate population growth. However, local zoning regulations and the availability of public water and sewer service in a town influence the rate of housing development, and therefore also affect the rate of population increase which occurs in a town.

The 46.31 percent population increase in Cromwell since 1970 was the largest percentage increase of any town in the region. Natural increase accounted for only 182* of the estimated total population increase of 3,292 persons from 1970 to 1976. It may be assumed that the remainder of the population increase in Cromwell, a total of 3,110 persons, was the result of net in-migration. The Cromwell Zoning Regulations, which allow for the building of multi-family units in certain areas of the town, and the increasing availability of sewer service within the town have made possible the rapid housing development and therefore the rapid population growth over the six year period.

Middlefield, with a 2.86 percent growth in population, and Portland, with a 3.31 percent increase since 1970, experienced the slowest population growth in the region. These low increases are reflective of the .49 percent average annual rate of increase in housing stock in Middlefield,

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* The net natural increase in Cromwell for the years 1970-1974 was obtained from the State of Connecticut Department of Health. The average annual increase for these five years was used as the estimated net natural increase for 1975.

and the .97 percent rate of increase in Portland* during this period, the lowest average annual rates of housing stock increase in the region. The Zoning Regulations of Middlefield have had a strong influence on the rate of population growth in this town. Approximately 85.0 percent of the total land in Middlefield is zoned for residential lots of one acre or more (suburban low density). In addition, there is only limited (mostly seasonal) public water service, and no sewer service in the town at this time. These factors restrict the rate of housing development, and thus the rate of population growth. Portland does have zoning regulations which allow for a greater density of housing development than that which is permitted in Middlefield, and also has both public water and sewer service in sections of the town. However, the low rate of housing stock increase in Portland contributed to its low rate of population growth from 1970 to 1976.

The Region as a whole experienced a 19.3 percent population increase from April 1, 1970, to January 1, 1976, or an average annual rate of increase of 3.36 percent. This is a faster rate of population growth than the 1.82 percent** average annual rate of increase in the decade from 1960 to 1970, a decade which experienced a slower rate of increase in housing stock as well.

Projected Population

Population projections through the year 2000 were prepared by Midstate Regional Planning Agency in conjunction with the State Department of Planning and Energy Policy, in January, 1976. Population trends and estimates which were calculated by several state departments, such as the Department of Transportation, the Health Department, and the Department of Planning and Energy Policy were compared with the Agency's own estimates. The most reasonable estimates of future trends in population growth were determined for each town in the Region based on a study of these various sources of data. The results of this study are found in Table I. This table shows a gradual slowing of the average annual rate of population increase in the Region as a total regional population of 110,200 is approached in the year 1990. For the most part town shares of total regional population remain within one percentage point over the twenty-year period. Cromwell shows an increase of about four percentage points at the expense of Middletown and Portland, each of which registers a decline of about two percentage points between 1970 and 1990. Figures I and II represent a graphic presentation of the population data found in Table I.

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* Housing and Land Use Element, No. 7, MRPA, 1977, pp. 22 and 24

** Housing Element, No. 2, MRPA, p. 82

POPULATION PROJECTIONS TO YEAR 2000

MIDSTATE REGION - BY TOWN

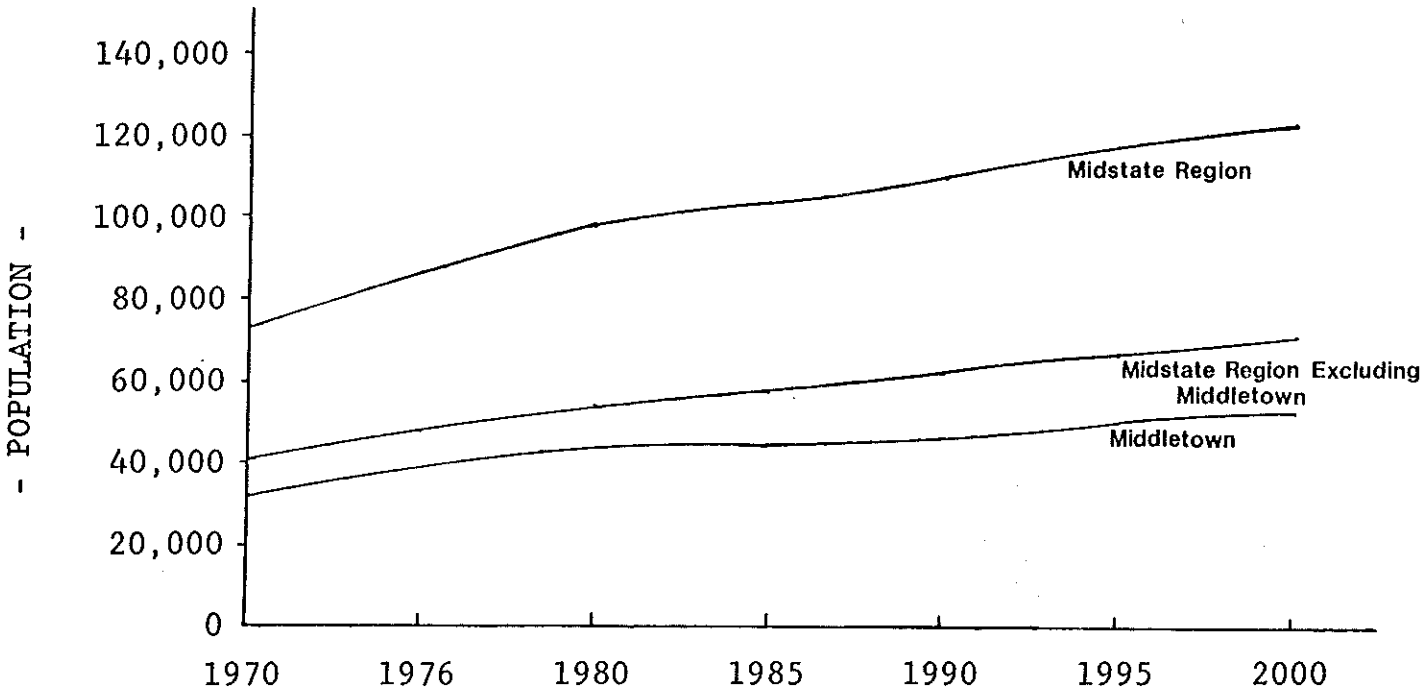
TABLE I

	1970 CENSUS COUNT	1976	1980	1985	1990	1995	2000
Cromwell	7,108	10,400	13,400	14,200	15,200	16,100	17,000
Durham	4,442	5,100	5,900	6,700	7,600	8,300	9,000
E. Haddam	4,550	5,200	5,800	6,300	6,800	7,200	7,600
E. Hampton	7,009	8,300	9,000	9,500	10,000	10,500	11,000
Haddam	4,866	6,100	7,000	7,500	8,000	8,500	9,000
Middlefield	4,132	4,250	4,600	5,000	5,400	6,200	7,000
Middletown	33,277	40,050	42,500	45,000	47,000	49,500	52,000
Portland	8,712	9,000	9,400	9,800	10,200	10,600	11,000
Midstate Region	74,096	88,400	97,600	104,000	110,200	116,900	123,600
Average Annual Rate of Increase	4/1/70-1/1/76	1/1/76-1/1/80	1/1/80-1/1/85	1/1/85-1/1/90	1/1/90-1/1/95	1/1/95-1/1/2000	
	3.36%	2.60%	1.31%	1.19%	1.22%	1.15%	
Total Percentage Increase	10.30%	10.41%	6.56%	5.96%	6.08%	5.73%	

SOURCE: Midstate Regional Planning Agency
Department of Planning and Energy Policy

FIGURE I

POPULATION: 1970 - 2000
MIDSTATE REGION,
MIDSTATE REGION EXCLUDING MIDDLETOWN,
AND
MIDDLETOWN

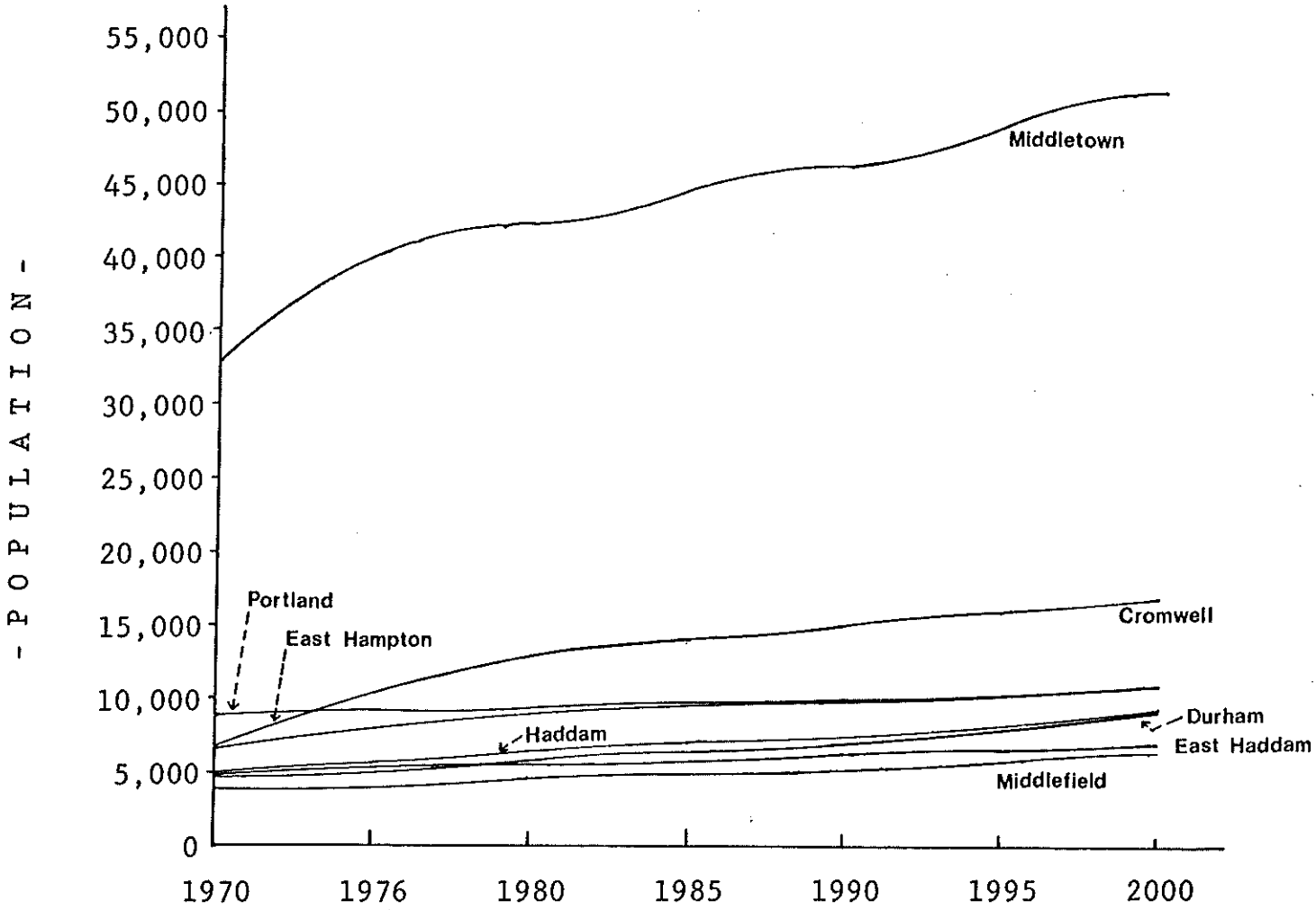


SOURCE: Connecticut Department of
Planning and Energy Policy

Midstate Regional Planning Agency

FIGURE II

POPULATION: 1970 - 2000
MIDSTATE REGION, BY TOWN



SOURCE: Connecticut Department of
Planning and Energy Policy

Midstate Regional Planning Agency

Density and Distribution

In 1976, the Midstate Planning Region had an average population density of just over half a person per acre (.54 PPA). In comparison the State of Connecticut, at .98 PPA was almost twice the Region's average density. It is not surprising to find the three major municipalities within the urbanized area, Middletown, Cromwell and Portland having the highest population densities. Their respective densities were 1.47, 1.25 and .57, as indicated by Table II. Middlefield, because of its small area and proximity to the urbanized area, is a close fourth with .51 PPA. The remaining four towns fall far below .5 persons per acre.

The most significant change in the density rankings among the municipalities is expected to occur in 1980 when Cromwell will move ahead of Middletown in this category. Primarily because of its location within the Hartford commutershed and the I-91 corridor, its proximity to the I-91 - Route 9 intersection, and the planned extension of its sewer service area, Cromwell will have a projected population density in 1980 of 1.62 PPA, compared to Middletown's projected density of 1.56 PPA. Table II represents population densities by town from 1970 through 1990.

Middletown's Central Business District currently exhibits the highest density in the Region at 7.97 PPA. However this figure is expected to decline over the twenty-year period to around 6.5 PPA in 1990. The South Farms area immediately south of the CBD presently has the second highest density of 4.99 PPA. This figure is also expected to decline, although not as drastically. Portland's downtown area, the third highest in population density, is also projected to decline as its downtown population stabilizes.

It is expected that major population density increases over the twenty-year period (1970-1990) will occur in all parts of Cromwell, and in the north and west suburban areas of Middletown, Middlefield and the northern part of Durham as residential development fills in the less densely populated portions of the urbanized area.

POPULATION AND POPULATION DENSITY: 1970-1990

MIDSTATE REGION BY TOWN

TABLE II

TOWN	ACREAGE	1970 POPULATION	1970 PERSONS PER ACRE	1976 POPULATION	1976 PERSONS PER ACRE	1980 POPULATION	1980 PERSONS PER ACRE	1990 POPULATION	1990 PERSONS PER ACRE
Cromwell	8,291	7,108	.86	10,400	1.25	13,400	1.62	15,200	1.83
Durham	15,167	4,442	.29	5,100	.34	5,900	.39	7,600	.50
East Haddam	36,231	4,550	.13	5,200	.14	5,800	.16	6,800	.19
East Hampton	23,675	7,009	.30	8,300	.35	9,000	.38	10,000	.42
Haddam	29,617	4,866	.16	6,100	.21	7,000	.24	8,000	.27
Middlefield	8,394	4,132	.49	4,250	.51	4,600	.55	5,400	.64
Middletown	27,305	33,277	1.22	40,050	1.47	42,500	1.56	47,000	1.72
Portland	15,654	8,712	.56	9,000	.57	9,400	.60	10,200	.65
Total	164,334	73,096	.45	88,400	.54	97,600	.59	110,200	.67

C H A P T E R I I

SECTION 2

HOUSING

HOUSING

Total Housing Stock

The total housing stock in the Midstate Region as of December 31, 1975 was estimated to be 30,342 housing units. This estimate, based upon the number of certificates of occupancy and demolition permits issued from 1970 to December 31, 1975, represents a 3.37% average annual rate of increase over the 1970 figure of 25,422 housing units. Table I indicates the estimated total housing stock as of December 31, 1975 for each town in the Midstate Region. This table also provides a comparative analysis of the average annual rates of increase in total housing stock experienced by member municipalities over this period.

TOTAL HOUSING STOCK

MIDSTATE REGION BY TOWN

TABLE I

TOWN	1970 HOUSING STOCK	DECEMBER, 1975 ESTIMATED TOTAL HOUSING STOCK	AVERAGE ANNUAL RATE OF INCREASE 1970-DECEMBER 1975
Cromwell	2,238	3,574	10.38%
Durham	1,231	1,437	2.91%
East Haddam	2,198	2,341	1.13%
East Hampton	2,680	3,117	2.84%
Haddam	1,700	1,920	2.25%
Middlefield	1,301	1,338	.49%
Middletown	11,305	13,692	3.67%
Portland	2,769	2,923	.97%
Midstate Region	25,422	30,342	3.37%

SOURCE: Midstate Regional Planning Agency

Occupied Housing Stock

It is estimated that 4,807 occupied housing units were added to the occupied housing stock of the Midstate Region from 1970 to December 31, 1975. Of these units, 2,395 or 49.82% were renter units, and 2,412 or 50.18% were owner units. The 604 additional rental units in Cromwell and the 1,625 additional rental units in Middletown accounted for 25.22% and 67.85% respectively of the total regional increase in occupied rental units. The remaining 166 units or 6.93% of the regional total were distributed among the four towns of East Haddam, East Hampton, Haddam and Portland. Middlefield was the only town which experienced a loss of rental units, losing two, and Durham's occupied rental stock remained constant during this period.

Cromwell's increase of 694 ownership units accounted for 28.77% of the regional increase in this category, and Middletown's 717 additional ownership units for 29.73% of the regional total increase. The remainder of the increase, 1,001 ownership units or 41.5% of the regional total, was distributed throughout the other six Midstate towns. Middlefield with 39 units and Portland with 63 units, 1.62% and 2.61% respectively of the regional total, had the lowest increases in occupied ownership units in the region.

The estimated tenure ratios of total occupied stock in the Midstate Region as of December 31, 1975 were 35.87% renter units and 64.13% owner units. Middletown was the only town in the region which had almost equal percentages of renter and owner units, 49.17% and 50.83% respectively. The high rental percentage of Middletown's total occupied stock is largely a result of the fact that 64.87% of the occupied renter units in the Midstate Region are located in this city. Durham had the largest concentration of ownership units within any town in the region with 85.89% of its total stock being in the ownership category.

Table II represents a town-by-town analysis of increases in renter and owner occupied housing stock from 1970 to 1975. The graphic representation of this data, (Figures I and II), dramatically illustrates the concentration of the region's rental housing in Cromwell and Middletown, and demonstrates as well the high rates of housing stock increase which have occurred in these two towns over this period. Table III lists the major housing developments in the Midstate Region by income category. This table, as well, illustrates the existing concentration of multi-family rental units in Cromwell and Middletown.

OCCUPIED HOUSING STOCK INCREASE: 1970-1975

MIDSTATE REGION BY TOWN AND TENURE

TABLE II

MIDSTATE REGION	1970	1975	% Increase
Total Occupied Housing Units	23,184	27,991	20.73
Owner Occupied Housing Units	15,540	17,952	15.52
Renter Occupied Housing Units	7,644	10,039	31.33
CROMWELL			
Total Occupied Housing Units	2,195	3,493	59.13
Owner Occupied Housing Units	1,702	2,396	40.78
Renter Occupied Housing Units	493	1,097	122.52
DURHAM			
Total Occupied Housing Units	1,194	1,396	16.92
Owner Occupied Housing Units	997	1,199	20.26
Renter Occupied Housing Units	197	197	0
EAST HADDAM			
Total Occupied Housing Units	1,424	1,560	9.55
Owner Occupied Housing Units	1,096	1,231	12.32
Renter Occupied Housing Units	328	329	.30
EAST HAMPTON			
Total Occupied Housing Units	2,148	2,576	19.93
Owner Occupied Housing Units	1,643	1,994	21.36
Renter Occupied Housing Units	505	582	15.25

OCCUPIED HOUSING STOCK INCREASE: 1970-1975

MIDSTATE REGION BY TOWN AND TENURE

TABLE II

HADDAM	1970	1975	% Increase
Total Occupied Housing Units	1,511	1,723	14.03
Owner Occupied Housing Units	1,214	1,425	17.38
Renter Occupied Housing Units	297	298	.34
MIDDLEFIELD			
Total Occupied Housing Units	1,171	1,208	3.16
Owner Occupied Housing Units	940	979	4.15
Renter Occupied Housing Units	231	229	-.87
MIDDLETOWN			
Total Occupied Housing Units	10,902	13,244	21.48
Owner Occupied Housing Units	6,015	6,732	11.92
Renter Occupied Housing Units	4,887	6,512	33.25
PORTLAND			
Total Occupied Housing Units	2,639	2,791	5.76
Owner Occupied Housing Units	1,933	1,966	3.26
Renter Occupied Housing Units	706	795	12.61
ALL TOWNS IN MIDSTATE REGION EXCLUDING MIDDLETOWN			
Total Occupied Housing Units	12,282	14,747	20.07
Owner Occupied Housing Units	9,525	11,220	17.80
Renter Occupied Housing Units	2,757	3,527	27.93

SOURCE: Midstate Regional Planning Agency

MAJOR HOUSING DEVELOPMENTS, 1977

MIDSTATE REGION

TABLE III

HOUSING DEVELOPMENT	TOWN	TENURE	NUMBER OF UNITS
Middle Income			
Woodland Apartments	Cromwell	Renter	184
Cromwell Gardens/Hills	Cromwell	Renter/Owner	708
Country Squire	Cromwell	Owner	113
West Lake	Middletown	Renter	559
Sutton Towers	Middletown	Renter	212
Wesleyan Hills	Middletown	Owner	110
Stonegate Apartments	Middletown	Renter	179
Highview Apartments	Middletown	Renter	88
Low/Moderate Income			
Summerhill/Woodbury	Middletown	Renter	322
Highlands	Middletown	Owner	202
New Meadows/Bayberry Crest	Middletown	Renter	343
Wadsworth Grove	Middletown	Owner	45
Wesleyan Student Housing/Traverse Square	Middletown	Renter	176
Maplewood Terrace/Long River Village	Middletown	Renter	248
Chatham Court	Portland	Renter	50
Rose Circle Gardens			
Willowcrest/Stoneycrest	Middletown	Renter	402
Sunset Ridge	Middletown	Renter	76
Rockwood Acres/Santangelo Circle	Middletown	Renter	122
Elderly			
Newfield/Stoneycrest Towers	Middletown	Renter	200
Sbona Towers	Middletown	Renter	129
Quarry Heights	Middletown	Renter	50
Bellwoods Court	East Hampton	Renter	30
South Green	Middletown	Renter	125*
Fox Glen	Cromwell	Renter	108*
Sugarloaf Terrace	Middlefield	Renter	30**
Project, Long Hill Road	Middletown	Renter	40**

* Under Construction, 1977
** In design, 1977

SOURCE: Midstate Regional Planning Agency

Housing Needs Assessment: 1976-1980

It is estimated that the population of the Midstate Planning Region will reach 97,600 persons by the year 1980. This figure represents an increase of 9,200 persons over the 1976 estimate of 88,400.

Table IV indicates estimates of the number of housing units, listed by both tenure and income category, which must be added to the 1975 housing stock in order to meet the needs of the 1980 population of the Midstate Region. These estimates are based on the following five factors: 1) Household Increase Factor (based on 1980 MRPA population estimates); 2) Vacancy Rate Factor-New Units; 3) Vacancy Rate Factor-Existing Units; 4) Substandard Replacement Factor; and 5) Expected to Reside Factor-Existing Employment. For a detailed explanation of the methods by which each of these factors was derived, see MRPA Housing Element #8, Chapter II.

The income ranges used to define low, moderate, middle, and upper income households are based upon the income eligibility limits for Section 8 housing (a federal rent subsidy program). For the purposes of this analysis, low-moderate income households are these which qualify for Section 8 housing assistance; middle-upper income households are those which do not qualify.

Within the lower half of the income scale, low income households are defined as one, two, and three-person households earning less than $3,000; four-person households earning less than $5,000; five-person households earning less than $7,000; and six-person households earning less than $10,000. By subtracting the low income households from the total households eligible for Section 8 housing assistance, an estimate of the number of moderate income households is obtained. In the upper half of the income scale, upper income households are defined as all households earning over $25,000 per year. An estimate of middle income households is attained by subtracting the upper income total from the total number of households which are not eligible for Section 8 housing assistance. (An example of this breakdown for 1975 renter households in the town of Cromwell is shown below).

TOWN OF CROMWELL

1975 RENTER HOUSEHOLDS: 1,097

PERSONS PER HOUSEHOLD

INCOME	1	2	3	4	5	6	
0-$2,000	74	50	7	16	0	7	
$2,000-$2,999	0	18	0	0	8	0	
$3,000-$4,999	23	20	19	16	0	0	
$5,000-$6,999	28	36	0	0	0	7	LOW
$7,000-$9,999	16	96	15	16	0	23	
$10,000-$14,999	32	181	68	100	11	7	MODERATE
$15,000-$24,999	16	52	32	16	0	13	MIDDLE
$25,000-	0	58	16	0	0	0	UPPER
TOTAL	189	511	157	164	19	57	

HOUSING NEEDS ASSESSMENT, 1976-1980:

TOTAL UNITS

MIDSTATE REGION BY TOWN

TABLE IV

TOTAL UNITS BY INCOME CATEGORY

TOWN	LOW	MODERATE	MIDDLE	UPPER	TOTAL
Cromwell	165	191	666	70	1,092
Durham	39	53	200	12	304
East Haddam	43	53	115	10	221
East Hampton	42	70	139	7	258
Haddam	114	76	190	19	399
Middlefield	46	39	90	6	181
Middletown	684	390	610	31	1,715
Portland	69	65	93	9	236
Regional Total	1,202	937	2,103	164	4,406
% of Total	27.28	21.27	47.73	3.72	100.00

SOURCE: Midstate Regional Planning Agency

C H A P T E R I I

SECTION 3

EMPLOYMENT

EMPLOYMENT

The number of jobs in the Midstate Region rose from 25,710 in 1970 to an estiamted 29,710 in 1975, a 15.0 percent increase in the first half of the decade. A large majority of the jobs in 1975 were concentrated in five locations, four of which were found in Middletown. These and several of the lesser concentrations are listed in Table I, which indicates approximate 1975 employment at those general locations.

The largest employment concentrations in the Midstate Region occur in the downtown and Maromas sections of Middletown. The downtown area includes the Central Business District, Wesleyan University, and Middlesex Memorial Hospital, together accounting for an estimated 4,650 jobs in 1975. The Maromas section of the City is the site of Pratt and Whitney Aircraft, the City's largest single employer. The three remaining large job concentrations are to be found in the South Farms area of Middletown, where Connecticut Valley Hospital accounts for a large portion of that area's total employment; in the Brownstone industrial area in the riverfront area of Portland; and in the Sawmill Brook Industrial Park adjacent to I-91 in Middletown.

By 1980, projections indicate that the number of jobs in the Midstate Region will exceed 33,000 and will represent an increase of over 12.0 percent over 1975 levels. In turn, the number of jobs is expected to grow almost 17.0 percent in the decade 1980 - 1990, exceeding 39,000 by 1990.

Table II shows a town by town breakdown of employment between 1970 and 2000. It is immediately obvious that upwards of three fourths of all jobs in the Region are to be found in Middletown. This share is expected to decline by 1990, suggesting a higher rate of growth in jobs in the remainder of the Region in the decade 1980 - 1990.

Some portion of this projected job development will be the result of industrial parks newly created or expected to be established in several towns. In Middlefield, plant expansion is planned to upwards of 100,000 square feet by 1983, with ultimate potential expansion to 200,000 square feet. These expansions, if realized, alone might generate employment increases of up to 270 jobs in the initial phase, and up to 570 jobs if fully implemented.

TABLE I

MAJOR EMPLOYMENT CONCENTRATIONS

MIDSTATE REGION

MAP KEY #	EMPLOYMENT CENTER	ESTIMATED 1975 EMPLOYMENT
1	Middletown Central Business District	2,500
1	Wesleyan University	800
1	Middlesex Memorial Hospital	1,350
2	South Middletown - River Road Area	3,950
3	Connecticut Valley Hospital	1,400
4	Brownstone Industrial Area	1,000
5	Sawmill Brook Industrial Park	1,200
6	Laurel Grove Industrial Area	200
7	Ripley Company	150
8	Xerox Publications	250
8	Vinal Regional Technical School	58
9	Long Lane Correctional School	250
10	Middlefield - Rockfall Area	210
11	Middlefield - Route 157 Area	160
12	Durham Central Business District	250
13	Middlesex Community College	100
14	East Hampton Central Business District	210
15	Moodus Area	200
16	King's Plaza	400

SOURCE: Middlesex County Development Council

An industrial park created by the town near the Durham Town Line would offer approximately 23 buildable acres. With gross plant floor area projected in the range of 174,000 square feet, nearly 435 new jobs would be created at that location.

Portland is another town actively promoting industrial park development. Created out of the Urban Renewal Program and improved with public utilities under the Community Development Program, Portland's Brownstone Industrial Park comprises 20.5 acres near the Connecticut River. When fully developed it is estimated that about 500 new jobs will have been created.

Cromwell's existing industrial park has the potential for further development, while towns such as East Hampton and Haddam have contemplated the creation of their own industrial parks.

This outlying industrial park activity paces continuing development of industrial parks in Middletown. The Sawmill Brook Industrial Park, covering an area of nearly 875 acres, is approximately 20.0 percent occupied. If built, the Sawmill Brook Race Track would consume 360 of the remaining uncommitted acres. Development of the residual acreage is dependent more on expansion of existing plants than attraction of new ones.

Figures I and II represent a graphic presentation of the employment data found in Table II.

EMPLOYMENT: 1970-2000

MIDSTATE REGION BY TOWN

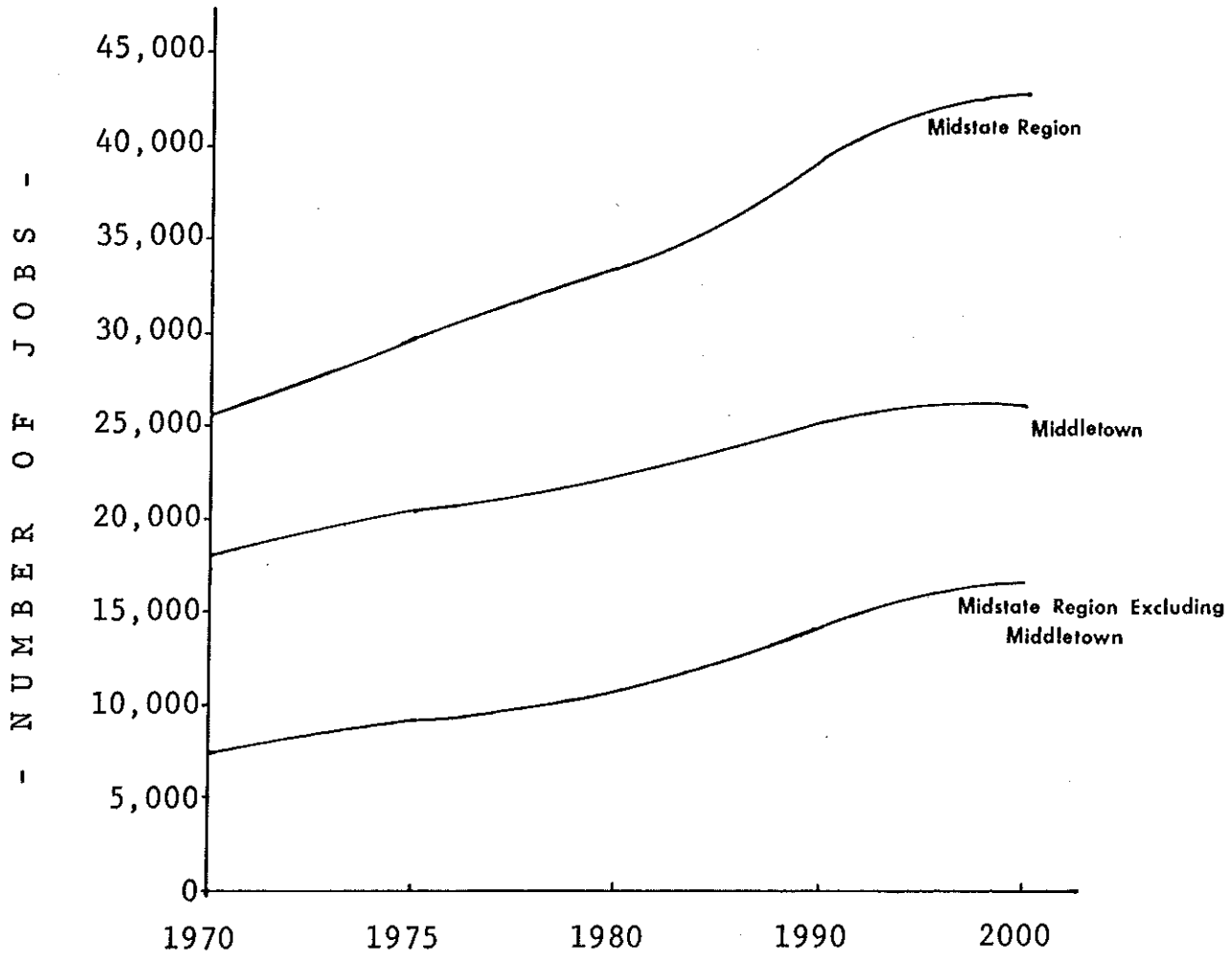
TABLE II

TOWN	ACTUAL 1970 NUMBER OF JOBS	ACTUAL 1970 PERCENT OF TOTAL	ESTIMATED 1975 NUMBER OF JOBS	ESTIMATED 1975 PERCENT OF TOTAL	PROJECTED 1980 NUMBER OF JOBS	PROJECTED 1980 PERCENT OF TOTAL	PROJECTED 1990 NUMBER OF JOBS	PROJECTED 1990 PERCENT OF TOTAL	PROJECTED 2000 NUMBER OF JOBS	PROJECTED 2000 PERCENT OF TOTAL
Middletown	18,218	70.9	20,550	69.2	22,464	67.3	25,094	63.8	26,024	60.8
Portland	2,168	8.4	2,330	7.8	2,707	8.1	3,123	8.0	3,765	8.8
Cromwell	1,065	4.1	1,510	5.1	1,918	5.8	3,026	7.7	3,384	7.9
East Haddam	1,055	4.1	1,140	3.8	1,103	3.3	1,303	3.3	1,412	3.3
East Hampton	1,007	3.9	1,210	4.1	1,474	4.4	1,895	4.8	2,264	5.3
Haddam	745	2.9	1,170	3.9	1,296	3.9	1,688	4.3	1,894	4.4
Durham	736	2.9	850	2.9	1,232	3.7	1,561	4.0	1,892	4.4
Middlefield	716	2.8	950	3.2	1,162	3.5	1,624	4.1	2,176	5.1
Midstate Region	25,710	100.0	29,710	100.0	33,356	100.0	39,314	100.0	42,811	100.0

SOURCE: Connecticut Department of Transportation
Midstate Regional Planning Agency

FIGURE I

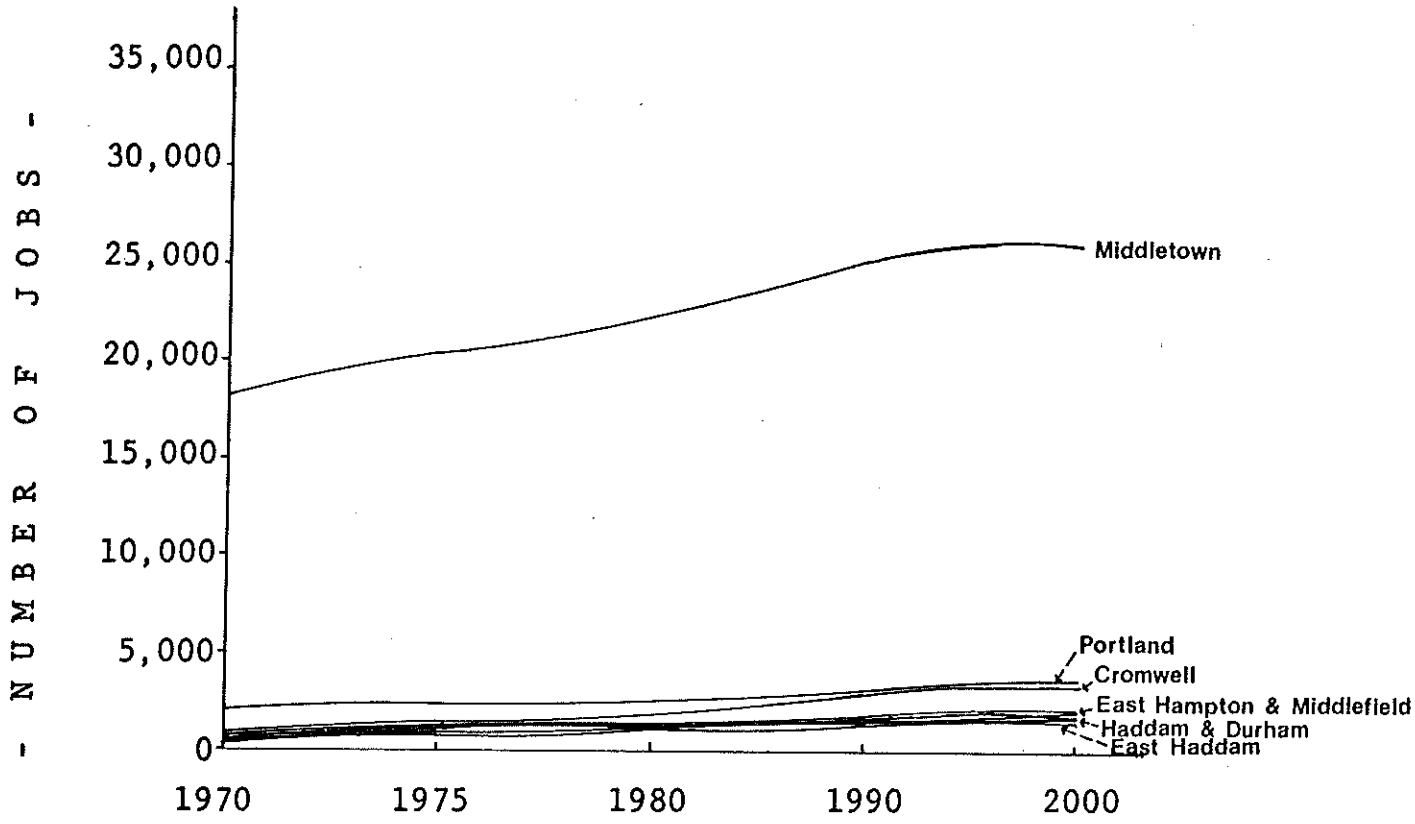
EMPLOYMENT: 1970 - 2000
MIDSTATE REGION,
MIDSTATE REGION EXCLUDING MIDDLETOWN,
AND
MIDDLETOWN



SOURCE: CONNECTICUT DEPARTMENT OF TRANSPORTATION
MIDSTATE REGIONAL PLANNING AGENCY

FIGURE II

EMPLOYMENT: 1970 - 2000
MIDSTATE REGION, BY TOWN



SOURCE: CONNECTICUT DEPARTMENT OF TRANSPORTATION
MIDSTATE REGIONAL PLANNING AGENCY

C H A P T E R I I

SECTION 4

EXISTING ZONING

EXISTING ZONING

Residential Zoning

Of the Midstate Region's 165,911 acres, land zoned for residential use totals 141,584 acres or 85.0 percent of the region's total land area. The following table categorizes the residential density distribution in the Midstate Region.

RESIDENTIALLY ZONED LAND BY DENSITY
MIDSTATE REGION, 1975

DENSITY	NO. OF FAMILIES PER ACRE	ACREAGE	PERCENT OF REGION
Urban High	More Than 8	1,743	1.0
Urban Low	2 - 8	9,539	5.7
Suburban High	1 - 2	87,291	52.6
Suburban Low	1/2 - 1	37,016	22.3
Estate	Less Than 1/2	8,214	5.0
TOTAL		143,803	86.9

SOURCE: Midstate Regional Planning Agency

Urban high densities are possible only in areas that are serviced with a public water and sanitary sewer system. The towns that permit the urban high densities are Middletown, Cromwell, East Hampton and Portland. Middletown permits a density of 40 dwelling units per acre in the R-4 zone, and 20 units per acre in the R-3 zone. Cromwell's planned residential district three (PRD-3) permits a density of 13 units per acre. Portland's resident multiple dwelling zone permits a density of ten units per acre, with an exception for elderly housing which is permitted at a density of 20 units per acre. East Hampton's planned apartment zone is contingent upon the completion of the public sewer system and will permit a density of 12 units per acre. Town zoning is displayed on the following map.

The urban low category, reflecting two to eight families per acre, is essentially the one-half acre residential zone. Of the 9,539 acres in this category, 7,790 acres are zoned for one-half acre lots. The remaining 1,749 acres are zoned to permit eight units per acre in Middletown's R-2 zone, and four and three units per acre in Portland's R-10 and R-15 zones.

The suburban high density classification, which signifies one to two family per acre, is the largest category with some 87,291 acres or 52.6 percent of the region's total acreage. Most of the zones enumerated in this category require a minimum residential lot of one acre or less. Over 90.0 percent of the area of Durham is zoned farm residential which requires a minimum one acre lot size. Durham permits apartments in the farm residential zone at the single-family density. In Middlefield elderly housing projects are permitted at suburban high density.

The suburban low category, corresponding to one half to one family per acre, is essentially the two acre residential zone. The accumulative regional acreage is 37,016 or 22.3 percent of the region. Middlefield's planned residential developments are permitted at this density.

The estate classification, which allows less than one-half family per acre, enumerates zones with at least four acre minimum lots. The 8,214 acres zoned in this category represent 5.0 percent of the region.

The following table reflects residentially zoned acreage by town and density category. Residential zoning patterns supports and reinforces the existing pattern of regional development as described earlier, and reflects the availability and non-availability of public sewerage or water supply, or both.

Commercial Zoning

Each municipality in the region provides land for commercial activities. Cromwell with 388 acres zoned commercially and Middletown with 387 acres account for 38.0 percent of the region's total commercial land. Five (5) of the remaining towns all have between 200 and 300 acres in this category. Durham, with 59 acres of commercial land, has the fewest. Commercially zoned land is shown on the regional zoning map and distribution by town is included in the Commercial and Industrial Zoning Table.

Commercially zoned land is heavily concentrated in the urbanized portion of the region, as one would expect. It is located predominantly in the Middletown Central Business District in several small shopping plazas, in the centers of Cromwell and Portland, and as highway strip development along segments of Routes 66 and 17 in Middletown and, to a lesser extent, Route 72 in Cromwell. Small clusters of commercial development also occur in the more rural towns as well, usually in or near the town centers, which typically is also the intersection of major roadways.

MIDSTATE REGION, 1975

RESIDENTIALLY ZONED LAND BY TOWNS AND DENSITY

TOWN	URBAN HIGH		URBAN LOW		SUBURBAN HIGH		SUBURBAN LOW		ESTATE		TOTAL	
	ACRES	PERCENT[1]	ACRES	PERCENT	ACRES	PERCENT	ACRES	PERCENT	ACRES	PERCENT	ACRES	PERCENT
Cromwell	239	2.8	671	7.9	3,622	42.6	-	-	-	-	4,532	53.3
Durham	-	-	97	.6	14,176	93.9	-	-	-	-	14,273	94.5
East Haddam	-	-	1,079	2.9	14,494	39.0	15,909	42.8	3,678	9.9	35,160	94.6
East Hampton	17[2]	.1	1,101[2]	4.7	16,110[2]	67.9	1,730	7.3	-	-	18,958	80.0
Haddam	-	-	1,334	4.5	7,199	24.4	19,377	65.8	-	-	27,910	94.7
Middlefield	-	-	324	3.9	2,512	30.5	-	-	4,536	55.1	7,372	89.5
Middletown	1,470	5.3	3,434	12.5	18,468	67.0	-	-	-	-	23,372	84.8
Portland	17	.1	1,499	9.6	10,710	69.0	-	-	-	-	12,226	78.7
Region	1,743	1.0	9,539	5.7	87,291	52.6	37,016	22.3	8,214	5.0	143,803	86.9

Urban High: 8 or more Families/Acre
Urban Low: 2 to 7.9 Families/Acre
Suburban High: 1 to 1.9 Families/Acre
Suburban Low: 0.5 to 0.9 Family/Acre
Estate: Fewer than 0.5 Family/Acre

[1]Percent of Total Town (or Regional) Acreage

[2]Zone Density contingent upon installation of sanitary sewers

SOURCE: Midstate Regional Planning Agency

MIDSTATE REGION

COMMERCIAL AND INDUSTRIAL ZONING ANALYSIS

	COMMERCIAL ZONING			INDUSTRIAL ZONING		
TOWN	ACRES	PERCENT OF TOTAL TOWN ACREAGE	PERCENT OF REGION'S COMMERCIALLY ZONED LAND	ACRES	PERCENT OF TOTAL TOWN ACREAGE	PERCENT OF REGION'S COMMERCIALLY ZONED LAND
Cromwell	388	4.6	19	1,505	17.6	17.5
Durham	59	.4	03	763	5.1	9.0
East Haddam	211	.6	10	602	1.6	7.0
East Hampton	274	1.2	13	302	1.3	3.5
Haddam	258	.9	12	173	.6	2.0
Middlefield	276	3.4	13	590	7.2	7.0
Middletown	387	1.4	19	745	13.6	43.5
Portland	230	1.5	11	902	5.8	10.5
TOTAL MIDSTATE REGION	2,083	1.2	100	8,582	5.2	100

It should be noted that the ratio of land in actual commercial use to land zoned commercial fairly consistently represents maximum percentages of lot coverage allowed in commercial zones of the eight towns. Town zoning regulations generally permit between 25 percent to 50 percent development of a commercial lot, depending on the town and the particular zone. These regulatory ratios are matched in actuality in most towns of the region. In Middletown the ratio of actual use to zoned use approaches 93 percent, which reflects in part the high density development in the Central Business District, where lot coverage is nearly 100 percent. In Middlefield the ratio is as low as eight percent. Much of Middlefield's commercially zoned land contains non-conforming uses or has severe limitations to development, which partially accounts for the low ratio.

In planning for commercial expansion in a municipality, a rule of thumb often used is 10 acres per 1,000 population. Applied to Midstate Region's current situation, and taking into account lot coverage requirements, one finds that six (6) of the municipalities are over-zoned while Middletown and Durham are fairly close to the planning standard. One reason for this "over-zoning" in some of the outlying parts of the region is that some of the land within the commercially zoned areas has severe limitations for development. However, this excess land is useful for purposes of providing landscaping, buffering and flexibility in site development. Furthermore, much of this commercial land contains non-conforming uses such as residences, which in many cases existed prior to the land's commercial designation. In some of the municipalities, such as Haddam and Middlefield, this fact would account for a fairly large reduction in usable commercial area. However, these communities have zoned fairly large amounts of land to compensate for this reduction. When projecting future commercial land requirements to meet the demands of Midstate's population in the year 1990, one finds that Durham and Middlefield would be deficient if zoning were to remain unchanged. Durham will require an additional 17 acres, while Middletown will need over 80 acres to adequately support its projected population in 1990.

Commercial land use in the region approximates the standard of 10 acres per 1,000 population, although in 1975 the Midstate Region exhibited a slightly higher average of 11.4 acres per 1,000 population. If this ratio is applied to projected 1980 and 1990 population, commercial acreage needed would total 1,113 and 1,256, respectively. These levels represent increases in commercially used land of 102 acres by 1980 and 245 acres by 1990. Taking permitted lot coverages into account, approximately two to three times this acreage would have to be zoned for commercial use for the

region as a whole. With 2,083 acres so zoned in 1975, sufficient land should be available through 1980, although the distribution of commercial growth may leave some towns over-zoned and other towns deficient.

Industrial Zoning

Midstate Region's eight municipalities all provide industrially-zoned land within their borders. Land zoned for this type of use amounts to 8,582 acres or .05 percent of the region's total land area.

Middletown leads all other municipalities in land area zoned for industry with 3,745 acres or 43.5 percent of the regional total. As indicated on the Regional Zoning Map, most of this land is found in three distinct concentrations: the Sawmill Brook Industrial Park adjacent to I-91, an area bordering Route 72 and the Cromwell Meadows, and an area bordering the Connecticut River in the southeastern part of the city. Cromwell has 1,505 acres of industrially-zoned land, most of which is situated on the town's western and northern borders; it accounts for 17.5 percent of the regional total; Portland, with 902 acres, accounts for 10.5 percent. Most of this land is located adjacent to the Connecticut River and just south of the town's center. Just over 20 acres of this land was recently established as an industrial park with sewer and water services. The remaining 28.5 percent is distributed over the five (5) smaller towns, Haddam having the least amount of zoned industrial land, 173 acres or 2.0 percent of the region's total. In Middlefield, some 60 acres of agricultural land was rezoned in 1976 to permit establishment of an industrial park in the southeastern section of town, while water and sewer service will soon be extended to existing industrial sites near the Laurel Brook Reservoir.

With the exception of Haddam, all the region's municipalities have selected land which maximizes access to major roads and facilitates sewer and water supply, where available or where projected. Since the major industrially zoned areas are somewhat removed from the high population and activity concentrations of the urbanized area, road access will play an important role in efforts to promote shuttle bus service and efficient freight movement.

C H A P T E R I I

SECTION 5

EXISTING LAND USE

EXISTING LAND USE

Developed or "Built-up" Land

The Midstate Region, despite its location adjacent to the I-91 corridor midway between Hartford and New Haven, is still largely undeveloped and retains a rural-residential character. Only about 11.7 percent of the region's 165,911 acres are developed or "built-up". Not surprisingly, the bulk of land in this category is concentrated in the three urbanized municipalities of Middletown, Cromwell and Portland. The region's built-up land areas are depicted on the Generalized Land Use Map, whereas the following table quantifies the distribution of land area, by town, among the land use categories.

The built-up land category consists of residential, commercial, industrial, utility, transportation, and institutional uses. Residential land dominates this category accounting for 72.0 percent of the total. Utilities and transportation account for 11.0 percent, institutional uses for 7.0 percent, and commercial and industrial 5.0 percent each.

EXISTING LAND USE (ACRES),
MIDSTATE REGION, BY TOWN
1975

LAND USE	CROMWELL		DURHAM		EAST HADDAM		EAST HAMPTON		HADDAM		MIDDLEFIELD		MIDDLETOWN		PORTLAND		MIDSTATE REGION	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
RESIDENTIAL	1,160	13.6	1,027	6.8	2,040	5.5	1,812	7.6	1,643	5.6	667	8.1	3,950	14.4	1,609	10.1	13,908	8.4
COMMERCIAL	101	1.2	22	0.1	194	0.5	68	0.3	136	0.5	22	0.3	359	1.3	109	0.7	1,011	0.6
INDUSTRIAL	72	0.8	70	0.5	27	0.1	62	0.3	34	0.1	14	0.2	528	1.9	122	0.8	929	0.5
UTILITIES & TRANSPORTATION	856	10.0	29	0.5	137	0.4	21	0.1	314	1.1	50	0.6	705	2.6	45	0.3	2,157	1.3
INSTITUTIONAL	50	0.6	45	0.3	36	0.1	58	0.2	92	0.3	43	0.5	1,010	3.7	100	0.6	1,434	0.9
SUBTOTAL DEVELOPED OR "BUILT-UP"	2,239	26.3	1,193	7.9	2,434	6.5	2,021	8.5	2,219	7.5	796	9.7	6,552	23.9	1,985	12.4	19,439	11.7
INACCESSIBLE	595	7.0	3,168	21.0	4,725	12.7	4,238	17.9	6,866	23.4	2,032	24.7	2,955	10.8	4,325	27.1	28,904	17.4
ENVIRONMENTALLY SENSITIVE*	1,246	14.6	2,875	19.0	2,741	7.4	431	1.8	5,541	18.8	570	6.9	3,230	11.8	2,160	13.5	18,794	11.3
OTHER VACANT	4,432	52.1	7,859	52.1	27,289	73.4	17,022	71.8	14,776	50.2	4,840	58.8	14,730	53.6	7,490	46.9	98,774	59.5
SUBTOTAL UNDEVELOPED OR VACANT	6,273	73.7	13,902	92.1	34,755	93.5	21,691	91.5	27,183	92.5	7,442	90.3	20,915	76.1	13,975	87.6	146,472	88.3
TOTAL ACRES	8,512	100.0	15,095	100.0	37,189	100.0	23,712	100.0	29,402	100.0	8,238	100.0	27,467	100.0	15,960	100.0	165,911	100.0
TOTAL DEVELOPED & INACCESSIBLE	2,834	33.3	4,361	28.9	7,159	19.3	6,259	26.4	9,085	30.9	2,828	34.3	9,507	34.6	6,310	39.5	48,343	29.1
RESIDUAL VACANT	5,678	66.7	10,734	71.1	30,030	80.7	17,453	73.6	20,317	69.1	5,410	65.7	17,960	65.4	9,650	60.5	117,568	70.9

*EXCLUDING CERTAIN INLAND WETLANDS

SOURCE: 1970 State Land Use Tabulation (OSP, CONN DOT)
U.S.G.S. Quad Sheets, Photorevised
State of Connecticut Aerial Photographs (1975 Flight)
Midstate Regional Planning Agency Update

Vacant Land

The Region's vacant land amounts to 88.3 percent of the total land area. Vacant land is discussed below in the following subcategories: (1) inaccessible, (2) environmentally sensitive, and (3) other vacant.

1. Inaccessible Land:

   Land in the inaccessible category is either owned by the State of Connecticut, municipalities, water companies or land trusts. This land accounts for over 17% of the Region's total land area.

2. Environmentally Sensitive Areas:

   This category is made up of flood prone areas, regulated inland wetlands and water courses, and water supply lands.

3. Other Vacant:

   The vacant land not classified as inaccessible or environmentally sensitive.

Regional Pattern of Development

Taken as a whole, the pattern of regional development evidenced by the Generalized Land Use Map is centered on Middletown as a socio-economic "hub". In the early days of its settlement in the seventeenth century, Middletown evolved as the commercial and industrial center of its surrounding environs, and soon became established as the county seat. Today, major institutions and services are also based in Middletown, including a renown university, while retail and industrial activity continues to flourish.

In recent years, population growth, accompanied by industrial and commercial expansion, has spilled over into adjacent communities, notably Cromwell and Portland. Cromwell especially has experienced a high rate of predominantly residential growth since 1970. The convergence in Cromwell of two major expressways certainly has contributed to its rapid development.

East of the Connecticut River, and in the towns south and west of Middletown, growth pressures have been less intense, and these towns retain their rural character.

C H A P T E R I I

SECTION 6

SURFACE AND GROUNDWATER RESOURCES

SURFACE AND GROUNDWATER AVAILABILITY

Surface and groundwater sources have been estimated to be of sufficient supply to satisfy the needs of the region for 50 years and beyond provided that proper planning for their utilization is implemented and, that adequate control measures are exercised to preserve existing natural water resources from contamination.*

Precipitation falling on the land surface in the form of rain and snow is the basic source of all fresh water resources in the region. Some of the water from precipitation is returned to the atmosphere by evaporation and transpiration. Other precipitous water seeps downward through the soil into water-bearing geologic formations, through which it slowly travels until it escapes into lakes, ponds, or streams in the low lands. Remaining precipitation runs off on the land surface directly into nearby surface water bodies. Collectively, the water that is ultimately discharged from all sources through streams and rivers is referred to as runoff. Runoff may be considered as the limiting quantity of water that can be tapped by man to satisfy his various needs.

Surface Water Resources

Surface water bodies are contained within basins whose areal extent is controlled by topography. The dominant surface water body in the Midstate Planning Region is the Connecticut River, with approximately 92% of the region contained within its basin. Other principal rivers in the region are the Salmon, the Mattabesset and the Coginchaug. These rivers are major tributaries of the Connecticut; and each discharges its entire flow within the Midstate Region. Numerous minor streams and brooks also discharge their flow either directly into the Connecticut River or into its tributaries. The Connecticut River carries an average flow of 18,300 cfs (cubic feet per second), the Mattabesset River 55.3 cfs, the Coginchaug River 48.5 cfs, and the Salmon River 177 cfs.

There are over 160 ponds, reservoirs and lakes in the Midstate Region. The 22 major water bodies having 20 acres or more comprise a total surface area of approximately 3.2 square miles; and a total storage volume of approximately, 6.4 billion gallons.

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* Availability of Water Resources in the Midstate Region
Geraghty & Miller, consulting ground-water geologist.

Surface water sources used for municipal water supply in the region are described in Table I:

TABLE I

INVENTORY OF SURFACE WATER SUPPLY
USED BY MIDSTATE REGIONAL MEMBER MUNICIPALITIES

RESERVOIR	TOWN	SIZE (Acres)	STORAGE VOLUME MILLIONS OF GALLONS
Mr. Higby Reservoir	Middlefield (Middletown Water Supply)	122.1	374
Laurel Brook Reservoir	Middletown	62.4	223
Portland Reservoir	Portland	30	120

Important factors in the consideration of a stream or lake as a potential water supply source are its physical, chemical and bacteriological qualities. Streams, lakes, and reservoirs in the Midstate area contain water which, generally, has less than 100 ppm (parts per million) of total hardness and relatively low total dissolved solids. At times, however, iron and manganese concentrations are somewhat high, and the water can be corrosive.

Although the degree of bacterial contamination in the streams varies considerably from season to season and place to place, the raw water in all of the major streams would require chlorination (and in many cases filtration) before it would be acceptable for municipal use.

GROUNDWATER RESOURCES

There are three types of water bearing aquifers in the Midstate Region. One consists of hard metamorphic and crystalline rocks which make up the high lands. These formations, because of their dense character, yield only small quantities of water per well. Overland runoff in the crystalline rock area is considerably greater than that found in basins mostly underlain by glacial sands, gravels, and clays. This can be attributed to the limited capacity of the crystalline rock's ability to store and transmit water. Crystalline rock aquifers have a limited potential for groundwater development. Yields are usually sufficient to satisfy domestic requirement, except during long periods of below-normal rainfall.

The second major type of aquifer in the region consists of sandstone and shale formations of the triassic age. Water in these formations is contained in bedding plains and fractures. Studies of triassic wells indicate that few of them go dry, even during extended drought periods. Sandstone and shale wells monitored in Cromwell, Middlefield and Middletown indicate a long-term safe yield of as much as 70 to 100 gpm. or about 100,000 to 150,000 gallons per day. The triassic sandstone and shales are a good source of water for individual homes; and, in many places, these formations will yield enough water to supply small commercial and industrial wells as well.

The third (and most important) aquifer in the region is represented by the unconsolidated sands and gravels deposited in bedrock valleys during the glacial epoch, which have been discontinuously covered by unconsolidated deposits of stratified drift. In these unconsolidated formations, water is contained in the interstices between the individual grains of sediment. Yields of more than several hundred gallons per minute can be obtained from such wells, depending upon the thickness and depth of the aquifer.

Data from test borings and wells in the region reveal that the thickness of the unconsolidated materials overlying bedrock varies from a few feet (in areas underlain by till), to as much as 200' in places underlying and adjacent to the Connecticut River. The wells drilled in the region by member municipalities are located in areas of coarse grained stratified drift composed principally of sand or sand and gravel. These deposits have a water-saturated thickness of 10 feet or greater.

The municipal wells drilled for the City of Middletown (along River Road) exemplify the ability of the glacial deposits to yield large quantities of water to a single well. In 1965, during a long term pumping test of Middletown's production well 1, the well produced water at a rate of 2 million gallons per day.

The sand and gravel aquifers are greatly limited in their areal extent; but where they are sufficiently permeable, and where depth and thickness are adequate, they offer the greatest potential for large municipal and industrial groundwater development.

In general, groundwater in the region is of good quality. However, the mineral concentrations in regional groundwater are greater than those found in surface water. Middletown, for example, must reduce the iron and manganese content of the River Road well before the water is put into the system. Water from the triassic rocks is relatively hard and often contains objectionable amounts of hydrogen sulfide. The water drawn from crystalline rock areas is somewhat softer than that obtained from other major aquifers in the region; but locally these rocks yield water which is high in iron and manganese.

The accompanying groundwater availability map depicts a general delineation of unconsolidated deposit areas.

CHAPTER II

SECTION 7

INLAND WETLANDS AND FLOOD PLAINS

INLAND WETLANDS AND FLOOD PLAINS

Two of the most important categories of environmentally sensitive areas in the Region are delineated on the accompanying map. They are: (1) Inland Wetlands, and (2) Flood Plains. In many instances, the two categories overlap each other in land area coverage. Also, both impose similar limitations to development. These are perhaps the most important reasons for combining both on a single map.

On the other hand, there are significant differences in the physical characteristics of these two categories. The following summarizes these characteristics, and outlines some of the important functions of each.

"Inland wetlands"is the customary term applied to all areas designated under Sections 22a-36 to 22a-45, inclusive, of the General Statutes of Connecticut, also known as "The Inland Wetlands and Water Courses Act." Under this Act, wetlands mean land, (including submerged land), which consists of any of the soil types designated as: poorly drained, very poorly drained, alluvial and flood plain by the National Cooperative Soils Survey carried out by the Soil Conservation Service of the U. S. Department of Agriculture. The term "water courses" encompasses rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water.

The definitions of wetlands and water courses found in the Act specifically exclude areas designated as tidal wetlands. These are areas which border on, or lie beneath, tidal waters or other lowlands subject to tidal action. However, because of the high degree of correlation between tidal and inland wetlands within the Region, the two have been grouped together for regional mapping purposes.

Delineation of the inland wetlands within the Midstate Region has been accomplished through extensive coordination with (and assistance from) the staff of the Soil Conservation Service (SCS) office in Haddam. Field sheets at 1" = 1,320' scale, containing all soil mapping units within an area, were prepared by soil scientists of the SCS and given to MRPA. Also provided by SCS was a list of soil types designated as inland wetlands. The MRPA staff then identified the inland wetland areas on the field sheets, and transposed the information to an overlay on an enlarged U.S.G.S. base map at 1" = 1,320' scale. This overlay was photographically reduced to 1" = 2,000', and placed on the regional base map at the same scale.

Although all inland wetlands in the region are indicated on the map, it should be recognized that these areas are not of equal importance or significance. The broad scope of the Inland Wetlands and Water Courses Act was designed to regulate wetland areas by function. Many of the areas serve a variety of important functions; while some do not possess any unique functional characteristics. However, most wetlands do serve one or more of the following functions: water supply; flood control; sediment control; natural habitat for beneficial aquatic organisms, wildlife or vegetation; aesthetic, recreational, historic and educational, and economic.

All of the wetlands shown on the accompanying map are regulated under the Act by either the municipality, through its Inland Wetlands and Water Courses Agency (Commission), or by the State (in the Town of Portland only) by the Department of Environmental Protection. Before an activity such as removal or deposition of material, obstruction, construction, alteration or pollution, can be undertaken in one of these areas, a permit must be received from the regulating agency. The agency may deny or grant a permit; and when a permit is granted, the agency may then impose conditions or limitations designed to carry out the preservation and conservation policies of the Act.

The term "flood plain" applies to the area adjoining a river, stream, water course, lake or other body of standing water that has been, or may be, periodically inundated by flood waters. In delineating the flood plain areas within the Midstate Region, several sources and methodologies have been utilized. What is depicted on the map represents the best available information at the present time.

In three of the region's towns (i.e. Cromwell, Middlefield and Portland), the information on which the map is based is extremely accurate. All three are at or near the final stages of publication of detailed actuarial flood insurance rate maps, prepared by either an engineering consulting firm, (Anderson-Nichols), or the U. S. Geological Survey, under contract to the Department of Housing and Urban Development. The flood hazard areas within these communities have been determined by detailed engineering studies using hydrologic and hydraulic analyses. Floods having had recurrence intervals of 10, 50, 100, and 500 years have been selected as having special significance for flood plain management and for setting flood insurance premium rates. For mapping purposes within the context of the regional planning process, the 100-year flood, i.e. the area in which there is a one percent chance of flooding in any given year, has been delineated. This standard is used by virtually every federal agency in the administration of

its programs as they relate to the flood plains. Consequently, municipalities are also adopting this standard in local land use regulations.

The delineation of flood plain areas in the other five municipalities in the Midstate Planning Region encompasses one or more of a variety of sources or methodologies. In communities along the Connecticut River, several major studies have been performed. In 1970, the New England Division of the U. S. Army Corps of Engineers prepared a study entitled: "Comprehensive Water and Related Land Resources Investigation - Connecticut River Basin." The flood profiles and boundaries shown for the intermediate regional flood are similar to those developed for the 100-year flood in the three communities mentioned earlier.

In 1973, the Corps of Engineers also published an updated hydrologic study of the Connecticut River entitled: "Hydrologic Engineering Input to Phase I of Connecticut River Supplemental Study." The elevations obtained from the hydraulic analysis of this study were used in determining flood plain boundaries at various points along the river. Additionally, the Corps of Engineers prepared a Flood Insurance Study in February, 1975, for Middletown. Preliminary data from this study has been utilized in this mapping.

Another source utilized in the preparation of this map was the U.S.G.S. "Map of Flood Prone Areas" series ("quick and dirty sheets") prepared on the 7.5 minute quad sheets. On these maps, the flood boundaries were estimated from regional stage/frequency relations. These maps were used extensively in areas which did not adjoin the Connecticut River.

Finally, delineations were checked in the field by MRPA staff. Meetings were also held with property owners, knowledgeable citizens and local officials.

The resulting flood plain delineation attempts to conform to the standard project flood or the 100-year flood measurements where technically possible. Distinctions between the channel or floodway and the balance of the flood plain are not made here, but will be made available to municipalities and MRPA as the flood insurance rate map studies become completed.

The accurate delineation of the flood plains has two primary areas of application: (1) The National Flood Insurance Program of the Federal Insurance Administration, and (2) Municipal Flood Plain Management. All eight Midstate member municipalities are in the Emergency Program; and flood insurance is available for virtually every building at subsidized rates. When the detailed rate mapping is completed, these communities may enter the Regular Program, which essentially raises the limits of coverage, and delineates the zones where different actuarial rates are set.

In conjunction with this program, the community must also commit itself to flood plain management that protects new construction from future flooding. This commitment has already been made in all Midstate municipalities through the adoption of Flood Plain Regulations as part of their respective zoning regulations and zoning maps. As the rate mapping becomes available, these maps should be modified to reflect the new information.

NATURAL, SCENIC & UNIQUE FEATURES IN THE MIDSTATE PLANNING REGION

The Midstate Planning Region, bisected by the Connecticut River and situated in the Connecticut River Valley down-warp of the Central Lowlands between the state's Eastern and Western Highlands, possesses a myriad of unique natural features. In that this area of the "Hartford Basin" has also been characterized geographically as, "...having a large amount of top quality land, highly suited to intensive development,"* it has become glaringly evident that any comprehensive land-use planning must include an identifying process whereby the natural features of the land are considered in terms of overall environmental impact.

The following serves as accompanying text to the map depicting the natural features in the Midstate Region, and is therefore comprised of the following three elements, i.e.: Natural Areas, per se; Streambelts (not mapped); and the Gateway Conservation Zone & Acquisition areas.

These three natural resource components have herein been included together in that encroachment upon one will ultimately impact the other; and, in protecting the natural values of the lower Connecticut River Valley for example, the Gateway Commission also ensures the preservation of adjacent streambelts, vistas and other natural features, etc. Conversely, community-adopted measures (e.g. minimum footage zoning) to conserve existing streambelts will have the effect of positively impacting other surrounding natural resources, etc. The following then is a compilation of these natural and unique areas within the Midstate Planning Region.

Natural Areas

The Connecticut Forest and Park Association, in conjunction with the Natural Resource Center, D.E.P., has endeavored over the past several years to compile an inventory of "natural areas" in Connecticut. The results of this latest inventory have been plotted by the MRPA on Map to indicate locations of these natural areas within the Midstate Planning Region.

Natural areas as defined here are special use areas; and thus should not be confused with land classified as open space, parks, state forests or

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* From Physical Geography: Connecticut Development Commission, September, 1963

other public lands. A natural area rather, must have some natural phenomenon which classifies it as rare or unique, thus meriting special consideration and protection from encroachment. Basically, natural area classification categories include:

Geologic
Hydrologic
Biologic
Archeologic
Cultural/Aesthetic
Educational

Information relevant to the natural areas delineated on the accompanying map was obtained through personal interviews with residents especially knowledgeable about specific areas, by site visitations, and by reviews of previously published literature.

As information re. natural areas in the Midstate Region was compiled, the cumulative data was then transferred into a computer printout format; thus facilitating additions, deletions, corrections, etc. (A few previously unrecognized areas were found; however, due to the population density of the region, and activities carried on previously by numerous professional and amateur naturalists throughout the area, very few unique areas were located that had not been previously reported). This information was then plotted on the regional base map.

The incorporation of this data into the overall plans and policies of the MRPA constitutes a viable element in projected regional land use planning programs. Conservation of such unique natural areas can only come about as knowledge is obtained re. their whereabouts and distinctive characteristics. Protection of these natural areas then, does not mean purchasing and guarding them, but rather that thoughtful consideration be given as how best to maintain them in their existing state; (this is particularly relevant in the land development policies instituted by the various regional member municipalities) thus ensuring their continued enjoyment and use by both present and future generations.

Natural areas in the Midstate Planning Region are listed by classification categories and towns in the following table.

NATURAL AREAS IN THE MIDSTATE REGION
BY
CLASSIFICATION AND TOWN

I. GEOLOGIC

A. Gorges

1. Hurd Park hemlock ravine	East Hampton
2. Burnham Brook preserve	East Haddam

B. Distinct Mountain Features

1. Mt. Tom and tidal flats	East Haddam

C. Manmade rock outcrops of geologic significance

1. Strickland Quarry	Portland
2. Cobalt Mine	East Hampton
3. Feldspar Quarries	Middletown
4. Turkey Hill site	Haddam
5. Gillette Quarry	Haddam
6. Cromwell Road cut Rte. 91	Cromwell
7. Brazos Brownstone Quarries	Portland

D. Cave formations

1. Cave hill	East Haddam
2. Merwin Caves	Durham

E. Fossil Evidence

1. Dinosaur Track Park	Middlefield

F. Other unusual geologic formations

1. Moodus Noises	East Haddam

II. HYDROLOGIC

A. Significant and unusual land water interfaces

1.	Miller's Pond	Durham
2.	Chapman Pond	East Haddam
3.	Lord Island	East Haddam

B. White water stretches

1.	Eight mile river	East Haddam

C. Waterfalls

1.	Devil's Hopyard State Park	East Haddam
2.	Westfield Falls	Middletown

D. Marshes, Bogs and Swamps: Inland

1.	Durham Meadows Wildlife Management Area	Durham
2.	Dead Man's Swamp	Cromwell
3.	Pecausett Meadows	Portland
4.	Wangunk Meadows	Portland
5.	Ackley Bog	East Haddam
6.	Cromwell Meadows	Middletown

III. BIOLOGIC: FLORA

A. Rare, remnant or unique species of plants

1.	Highway Mt. ledges	Middlefield
2.	Laurel Brook Site	Middlefield

B. Unique plant communities

1.	Turkey Hill lot	Haddam
2.	Reeves, cabin and cox lots	Portland
3.	Haddam meadows	Haddam
4.	Spiderweed Preserve	Middletown

C. Plant Communities representative of Standard Forest plant associations

1. Wilcox Island	Middletown
2. Gildersleeve Island	Portland

IV. BIOLOGIC: TERRESTRIAL FAUNA

A. Birds

1. Durham Meadows Wildlife Management Area	Durham

V. BIOLOGIC: AQUATIC FAUNA

A. Habitat area of unusual significance to a fauna community

1. Cove Meadow	Haddam

VI. ARCHAEOLOGICAL

A. Colonial Roots

1. East Haddam: Colchester Turnpike	East Haddam

VII. CULTURAL: AESTHETIC/VISUAL

A. Manmade: Unusual aesthetic significance

1. Lyman Orchards	Middlefield

B. Unusual juxtaposition of manmade and natural features

1. Old Comstock Covered Bridge	East Hampton

C. Trails Systems

1. Mattabesett Trail (Bear Rock to Bluff Head)	Durham

Streambelts

The Middlesex County Soil and Water Conservation District, in conjunction with the Eastern Connecticut Resource Conservation and Development Project, has embarked on an information-gathering program re. land and water resources within the Midstate Region. One phase of this project deals primarily with the mapping and identification of streambelts and potential water-oriented development sites within the region.

Streambelts, as defined here, are environmental corridors of land and water containing features that have an important bearing on the water-related, aesthetic, recreational, wildlife, historic and land use aspects of a community. The retention of these streambelts, or environmental corridors, is of general public concern, and warrants deliberate action by local units of government as to their objectives for the preservation and wise use of such streambelts.

The main components of streambelts are:

- -The watercourse of a defined stream (including banks, bed, and water)
- -Lands subject to frequent stream overflow
- -Associated marshes, wetlands, and shorelines
- -Contiguous lands with special beneficial and environmental values; e.g. wildlife habitat, recreation, scenic, etc.
- -Potential water development sites of public significance
- -Areas in proximity to streams where certain developments or land uses would have probable adverse environmental effects, i.e. pollution and health hazards, erosion and sedimentation, destruction of ecological systems, etc.
- -Other areas necessary as links to form a continuous streambelt system

The streambelt reports presently being compiled are essentially the result of field reconnaissance and map studies by the U. S. Soil Conservation Service. Soils maps, topographic maps, and aerial photographs comprise the other data base sources utilized in the study. With the completion of this phase of the regional resource evaluation will emerge comprehensive watershed-streambelt maps for each member municipality in the Midstate Region.

To date, regional streambelt mapping has been completed for the Coginchaug River Watershed, the Sumner Brook Watershed, and the towns of Durham, East Haddam and Middletown. Remaining regional towns as yet unmapped are Cromwell, East Hampton, Haddam and Portland. As an example of what is delineated on a streambelt map (in addition to streambelts), the Coginchaug River Watershed map depicts potential shallow and deep water sites, existing and potential fire holes, groundwater supplies and reservoirs, existing and potential recreation areas, vistas and unique areas, etc., as well as lakes, ponds, marshes and swamps.

Such ecologically vital resources must be retained, as the quality of the environment for people living in the watershed is to a great degree linked to the streams and associated lands. The MRPA, recognizing the need to conserve their special values, has thus included streambelts as an integral part of the regional land use plan. Local governments in member municipalities are being encouraged to utilize various measures to thereby achieve streambelt conservation goals including:

-Informational programs promoting natural resource development
-Development of soil and water conservation plans on public and private lands through services and facilities provided to land owners by the County Soil and Water Conservation District
-Land acquisition (public and private land trusts, etc.)
-Conservation easements
-Establishment of actual Streambelt Zones
-Dedication of wetlands to "open space" in accordance with Public Act Number 155.

Citing the Coginchaug River Watershed again as an example, there already is evidence of streambelt encroachment along sections of this 14-mile long watercourse. The current population growth and resulting urbanization will greatly increase the hazards of uncontrolled forms of development; thus, it is expedient that protective measures be adopted to preserve, and wisely develop, the natural resources of the streambelt. Where streambelt encroachment has already taken place, needed restoration and reclamation can be accomplished. This, however, entails long-range planning over a period of years. The answer then, is not to wait until such encroachment has taken place, and then begin the arduous task of restoration and reclamation; but rather to introduce now whatever measures are necessary to preserve these all important natural resources.

The Connecticut River Gateway Conservation Zone

In 1973, the Connecticut Legislature authorized the establishment of a Connecticut River Gateway Conservation Zone to protect the natural, historic and aesthetic values of the lower valley of the Connecticut River.

The Conservation Zone encompasses riverside portions of East Haddam (3,080 acres) and Haddam (6,121 acres), as well as six other municipalities in the lower valley extending to Long Island Sound.

The bill passed by the Legislature, Public Act 73-349, provided for the protection of the area through a regional conservation compact among the towns and through state purchase of scenic easements and development rights. Plans for administering the program were formulated by a Gateway Committee, which consisted of one representative from each town, one from each of the two regional planning agencies and one from the State Department of Environmental Protection. (DEP)

The Gateway Committee developed minimum standards concerning land coverage, setback, building height, design, cutting of timber, burning of undergrowth, removal of soil and other earth materials and dumping and storage of refuse. In voting to join the conservation compact, (all eight towns have done so), each town agreed to adopt these minimum standards as part of its zoning and subdivision regulations. The standards apply to the portion of each town within the conservation zone.

Implementation and enforcement of the standards is primarily the responsibility of the municipal Planning, Zoning and Conservation Commissions in each town. However, the Connecticut River Gateway Commission, the successor to the Gateway Committee, oversees the entire zone, and has certain statutory responsibilities, such as reviews, zone changes, zoning appeals, and modifying the minimum standards.

The other important function of the Gateway Commission is to determine which lands and vistas along the river should be protected by acquiring scenic easements and development rights. The legislation authorizes the DEP to purchase these rights on as much as 2,500 acres of land within the conservation zone. The priority acquisition areas within East Haddam and Haddam are indicated on the Map.

CHAPTER II

SECTION 9

SOILS WITH LIMITATIONS FOR URBAN USES

SOILS WITH LIMITATIONS FOR URBAN USES

Soils information is one of the key elements in the land use planning and decision-making process. The Detailed Soil Survey conducted by the Soil Conservation Service (SCS) of the U. S. Department of Agriculture, provides data on the physical characteristics or properties of the soil, such as its slope, texture, depth to bedrock, depth to seasonal high-water table, depth to hardpan, erosiveness, permeability, percolation rate, etc. Soils are classified and mapped by SCS according to these properties.

Another important function of the detailed soil survey is the interpretation of the various soil types for their suitability (or limitation) for urban uses; e.g. housing, on-site septic systems, roads and sanitary landfills, to name but a few. In interpreting the limitations of soils for urban uses, the SCS uses terms such as slight, moderate, severe and very severe to describe the limitation. (The limiting characteristics are also included in the interpretation).

On the accompanying map: i.e. Soils With Limitations For Urban Uses, soils with very severe limitations for one or both of the following urban uses have been shown:

1.) On-site septic systems with filter fields
2.) Installation of dwellings with basements

However, not all soils with severe or very severe limitations for urban uses are included here. Inland wetland and floodplain soils which have those limitations are depicted on another map. All of the soils with very severe limitations are included in these two maps.

The following chart gives the detailed soils map symbols used, soil series name, urban use category limitations and important characteristics in preparing this map.

SOILS WITH LIMITATIONS FOR URBAN USES

MAP SYMBOL	SOIL SERIES NAME	LIMITATION FOR ON-SITE SEPTIC SYSTEMS	LIMITATION FOR DWELLINGS WITH BASEMENTS
08R	Rock-Outcrop Hollis Complex	Very Severe: Slope Depth to Rock, Outcrops	Very Severe: Slope, Depth to Rock, Outcrops
17LC	Charton-Hollis (Hollis Part)	Very Severe: Depth to Rock	Very Severe: Depth to Rock
17LD	Hollis-Charlton (Hollis Part)	Very Severe: Slope, Depth to Rock	Very Severe: Slope, Depth to Rock
17ZC	Hollis-Rock Outcrop	Very Severe: Depth to Rock, Outcrops	Very Severe: Depth to Rock, Outcrops
17ZD	Hollis-Rock Outcrop	Very Severe: Slope, Depth to Rock, Outcrops	Very Severe: Slope, Depth to Rock, Outcrops
35MD	Paxton and Montauk	Very Severe: Slope, Percs Slowly, Large Stones	Severe: Slope, Large Stones
38MD	Wethersfield	Very Severe: Slope, Percs Slowly, Large Stones	Severe: Slope, Large Stones
94LC	Cheshire-Holyoke (Holyoke Part)	Very Severe: Depth to Rock	Very Severe: Depth to Rock
94LD	Holyoke-Cheshire (Holyoke Part)	Very Severe: Slope, Depth to Rock	Very Severe: Slope, Depth to Rock
94MC	Holyoke-Rock Outcrop	Very Severe: Depth to Rock, Outcrops	Very Severe: Depth to Rock, Outcrops
94MD	Holyoke-Rock Outcrop	Very Severe: Depth to Rock, Outcrops	Very Severe: Depth to Rock, Outcrops

C H A P T E R I I

SECTION 10

AGRICULTURAL LANDS AND SOILS

AGRICULTURAL LAND IN THE MIDSTATE PLANNING REGION

Introduction

From the dairy farms in East Haddam to the nursery operations in Cromwell, agricultural land in the Midstate Region is still a familiar sight; although it's a far cry from the heyday of 200 years ago when this area, together with other Connecticut farming regions, provided a substantial amount of food to feed the young nation in general and the Revolutionary Army in particular. Because of the area's ability to provide a wide variety of food, Connecticut earned the name "the Provision State."

Connecticut's Farmland

High quality cropland for food production is rapidly becoming an endangered species in Connecticut. In the late 1790's agriculture was the way of life in the state and about 60 percent of the landscape was cleared for the production of crops or pasture.

Today the picture is quite different. According to the Census of Agriculture in 1974 Connecticut had only 3,421 farms and farm acreage had dwindled to 440,056 acres or 14% of the state's total land area. In the period between 1944 and 1974 Connecticut lost 1.5 million acres of farmland while in the same general time frame the state's population increased by 1.7 million people.

Farmland In the Midstate Region

The two key sources used to identify prime farmlands in the Midstate Region are soil type and existing land use.

1. Soil Type - The Soil Conservation Service has recently completed detailed soil surveys for each town in the Midstate region. Once these composite soil maps are completed it will be possible to single out those soils that are best suited for agricultural use. In order to be classified as "prime agricultural land", the area must contain soils that: have an adequate moisture supply during the growing season, have a mean annual temperature greater than 32 F, have a pH between 4.5 and 8.4 within a depth of 40", lack excessive moisture,

have a permeability rate of at least .06 inches per hour in the upper 20 inches, contain few stones, are not excessively erodible, are deep enough over hardpan, gravel and rock to permit adequate moisture storage and unhampered root development. The accompanying Prime Agricultural Soils Map indicates a heavy concentration of prime agricultural land in the western portion of Portland, all of Cromwell, the central section of Middletown, the eastern and central portions of Middlefield and the central section of Durham.

Both East Hampton and East Haddam contain large concentrations of "Woodbridge" sandy loam soils. The Woodbridge soils in East Haddam are classified as prime agricultural soils because they contain few stones. In East Hampton the Woodbridge soils were found to be very stony and hence were not classified as prime agricultural land. (An explanation for this variation might be that East Haddam has traditionally been a farming community; and, as its many stone walls will attest, farmers for years have been clearing the fields of stones). East Hampton, on the other hand, has been a ship building and manufacturing town. Although the land was cleared of trees to provide lumber for the ships the stones were never cleared.

2. Existing Land Use

Accurate data on farmland acreage by town was not available until recently. During the summer of 1977 the Middlesex County Extension Service conducted a detailed field survey of all active and inactive farmland of two acres or more for each town in the Midstate Region.

A parcel of land is considered in active agriculture if it is under cultivation, in tree, bush or vine crops or used for raising livestock or poultry. Inactive farmland is cleared land that was once cultivated or used to keep animals but is not now actively farmed. However, these lands have not yet reverted back to brush or woodland.

The following (Table 1) summarizes the results of the Extension Service farmland survey:

TABLE I

ACTIVE AND INACTIVE FARMLAND

1977

TOWNS	AREA OF TOWNS ACRES	AREA IN ACTIVE FARMLAND ACRES	PER CENT	AREA IN INACTIVE FARMLAND ACRES	PER CENT	AREA IN ALL FARMLAND ACRES	PER CENT
Cromwell	8,512.00	1,056.17	12	896.69	11	1,952.86	23
Durham	14,912.00	2,828.88	19	565.85	4	3,394.73	23
East Haddam	36,864.00	1,964.50	5	922.77	3	2,887.27	8
East Hampton	23,552.00	669.12	3	1,233.03	5	1,902.15	8
Haddam	29,888.00	1,158.64	4	344.87	1	1,503.51	5
Middlefield	8,512.00	2,543.80	30	57.04	1	2,600.84	31
Middletown	27,456.00	3,900.05	14	3,009.26	11	6,909.31	25
Portland	15,168.00	1,760.04	12	721.30	5	2,481.34	17
Totals	164,992.00	15,881.20	10	7,750.81	5	23,632.01	15

SOURCE: Middlesex County Extension Service

The Midstate Region contains 23,632 acres of farmland, 15% of the region's total land area. Ten percent of the region is being actively farmed while 5% is in inactive farm use.

Within individual towns, active farmland ranged from a high of 30% of Middlefield's total land area to a low of 3% in East Hampton. Both Middletown and Cromwell have 11% of their land area in inactive farm use while in Haddam and Middlefield only 1% of the town is occupied by inactive farmland.

Middletown contains more active and inactive farmland than any other Midstate community. Middletown with 6,900 acres actually has more than double the total farm acreage of the next highest community, East Haddam which has 2,800 acres of farmland.

Agricultural Land Use

The Middlesex County Extension Service in 1977 conducted on-site inspections of all farms in the Midstate area to determine specific farm practices in each town. Table 2 summarizes the results of that survey.

General Farming which includes dairying, growing silage corn and hay and pasture land represents 89% of the active farmland in the Midstate area.

When farm practices are analyzed by town, Table 2 shows that Middlefield has the most acreage devoted to Orchard and Nursery stock, Portland is the only town growing tobacco; and Portland and Middlefield have approximately the same acreage devoted to growing vegetables.

Within the General Farming category silage corn, a crop vital to dairy farmers, occupies 1,872 acres. Middlefield (with 444 acres) and Durham (with 402 acres) substantially lead other towns in silage corn production.

Why Are We Losing Our Farmlands and Why Should We Try To Preserve Them?

The most obvious reason for the decline in operational commercial farms has been low or nonexistent profits due to rising production costs. While the cost of fertilizer, labor, taxes, farm equipment and interest rates have skyrocketed, production prices (and hence the farmer's net income) have increased only slightly, if at all.

Many other factors combine to make Connecticut farming a difficult situation; but development pressure must be viewed as a major reason for the loss of farmlands. The use of the private automobile (and the development of roads and highways to service it) has made it possible for people to live further from their places of work. The suburbanization of the countryside has placed great pressure on the farmers to sell their land for development. The land that has been cleared for agriculture is, in most instances, the land best suited for development. Once the top soil is removed or disturbed in the course of development, it becomes extremely difficult to grow crops on that land again.

Agricultural lands play a vital role in our lives. The major role farmland plays is in food production. Citing changes in weather conditions in California and Florida, it is unclear for how long we will be able to depend on these areas for food. Energy costs have a direct effect on food costs. As energy costs increase, fertilizer, feed, transportation and production costs raise food costs tremendously. Food producing states will start to look closer to home for places to sell their produce. We need to protect our ability to produce as much as possible.

Agricultural lands in Connecticut also make major contributions to our economy. In 1974, agriculture accounted for farm sales of $213 million and an additional $148 million of business was associated with processing and marketing these products. Thus, the total economic impact of agriculture amounted to over one-third of a billion dollars.

Agricultural lands also provide environmental and social benefits to the area. Agriculture must be viewed as a vital part of the open space network. As such, farmlands provide habitat for wildlife, act as a natural filter for the water cycle, maintain watersheds, neutralize air pollutants and act as a natural sponge for water runoff from developed land.

Farmland also has great aesthetic value as it provides a welcome buffer between nodes of development. As part of a community's open space network, agricultural lands provide an existing and potential source of recreation land. Hunting, fishing, biking, skating, swimming, sledding, etc. are just a few of the activities carried on by regional residents on farmlands.

State Preservation Programs

Realizing that farmland has decreased by over a million acres in 30 years, the Governor of Connecticut in 1974 established a Task Force for the Preservation of Agricultural Land to study and then recommend a land use policy to maintain agriculture. In December, 1974 the Task Force published a report that recommended: "to provide about a third of its food, Connecticut should reserve at least 325 thousand of its remaining 500 thousand acres of agricultural land." The Task Force recommended a state farmland preservation program based on the state purchase of the development rights to prime farmland. The rate of compensation for the purchase of development rights would be the difference, at the time of sale, between the market value of the land if it were sold for development and the agricultural value of the land. It is estimated that it will cost an average of $1,500 to $2,000 per acre to purchase development rights to farmland in Connecticut.

Bills outlining a state program for the purchase of development rights on 325,000 acres of farmland have had financing problems, and current plans call for a smaller scale pilot program.

Farmland Preservation Techniques

A summary of various farmland preservation techniques and an assessment of their potential effectiveness and acceptability in a suburban area such as the Midstate Region is present below:

a. Exclusive Agricultural Zoning involves the use of the police power to create zoning districts in which farming is the only permitted use. Owners of farmland are not compensated for the restrictions placed on the use of their land. In suburban areas where land prices are high, exclusive agricultural zones would most likely be opposed by many landowners as constituting an unfair taking of their land without just compensation. Farmers like other landowners want the option to sell their land for other uses such as residential, commercial or industrial development and exclusive agricultural zones would not permit this. If such zoning is based on soil survey data, an existing land use analysis and a comprehensive plan for future development, the courts in this state might uphold agricultural zones as has occured in several other states. While this type of zoning has achieved some degree of success elsewhere, there is little reason to believe that at the present time it would

be a feasible means of preserving a majority of the farmlands in the Midstate Region. It might be successfully applied where farmers agree with the concept and where farmlands are under long term lease agreements.

b. Low Density Residential - Agricultural Zoning is the zoning approach most used in Connecticut to preserve existing farmlands. Uses permitted in these districts are usually limited to low density residential development i.e. 1 family per 3 to 5 acres, and farming. Many zoning regulations also permit roadside stands and other agricultural related enterprises. The courts will view such districts favorably especially if they are based on soils information and existing land use. Lands containing prime agricultural soils, as delineated by the Soil Conservation Service, which are actively farmed are generally ideal locations for low density residential - agricultural zones. Low density residential development is also the best neighbor for farm operations as it presents the fewest land use conflicts to growing crops and raising animals.

Low density zoning could also be used to develop buffer areas between existing farms and proposed development. These buffer areas could also be established by the planning and zoning commissions requiring developers to make open space dedications as part of their development proposals.

c. Preferential Tax Assessment is the most widespread farmland preservation policy used in Connecticut. Public Act 490 was enacted as a state statute by the 1963 Session of the General Assembly. Under the Act farm tracts are taxed at use value rather than market value with the underlying assumption that rising property tax levies are one of the primary threats to continued farming in urbanizing areas. Though it has generally proved to be a politically acceptable policy and though high taxes can certainly force farmers out of business, if the owner is indifferent about farming or is actively looking for an opportunity to sell to a developer or is about to retire from farming, future tax savings from preferential assessment on the farmland will be of little consideration and will not have much effect in deterring the sale of farmlands. Hence, preferential tax assessment may slow down the loss of farmland to urban development, however, by itself is insufficient for long range preservation of prime farmlands in the suburbs.

d. Transfer Of Development Rights is a technique which has recently received attention as a means of preserving open space, historic sites and farmland. It involves the severing of the right to develop in designated agricultural areas and transferring this right to other areas which have been determined capable of ecologically supporting that additional development. Because this concept is so new questions regarding landowner compensation, taxes, administration and its effect on zoning must be answered before an ordinance is instituted locally. Because of these uncertainties government supervised transfer of development rights is, at the present time, not the most effective means of preserving farmlands in suburban areas.

e. Fee Simple Purchase And Leaseback involves the purchase of farmland and then leasing the tract for continued agricultural use, thereby recouping some of the purchase price. Government red tape, regulations and uncertainty as to who would administer a leaseback program would not be conducive to efficient farming.

f. Purchase And Resale With Covenants would involve public or private acquisition of farmlands then selling the land to a new owner with an agreement written into the deed committing the buyer to continue farming the tract. While this technique may be effectively used in certain situations its applicability for large scale farmland preservation is limited.

g. Purchase Of Development Rights involves government acquisition of development rights of farmland leaving the agricultural rights with landowner. Despite its relatively high cost, development rights purchase appears to be the most acceptable and effective means of preserving farmland in suburban areas.

TABLE 2

AGRICULTURAL LAND USE
1977

TOWNS	ACRES: ACTIVE FARM-LAND	ACRES: ORCHARDS	% OF TOTAL	ACRES: NURSERY	% OF TOTAL	ACRES: TOBACCO	% OF TOTAL	ACRES: VEGETABLES	% OF TOTAL	ACRES: GENERAL	% OF TOTAL
Cromwell	1,056	5	-*	32	3	-	-	10	1	1,009	96
Durham	2,828	-	-	41	1	-	-	20	-	2,767	99
East Haddam	1,964	58	3	29	1	-	-	10	1	1,887	96
East Hampton	669	6	1	20	3	-	-	22	3	621	93
Haddam	1,158	13	1	28	2	-	-	20	2	1,098	95
Middlefield	2,543	460	18	300	12	-	-	155	6	1,628	64
Middletown	3,900	100	3	62	2	-	-	107	3	3,683	94
Portland	1,760	61	3	12	1	111	6	158	9	1,430	81
Midstate Totals	15,881	703	4	524	3	111	1	502	3	14,123	89

* - less than 1%

SOURCE: Middlesex County Extension Service

C H A P T E R I I

SECTION 11

MUNICIPAL AND STATE OWNED PROPERTY

MUNICIPAL AND STATE-OWNED PROPERTIES

One of the integral parts of the existing open space pattern in the Midstate Region is the extensive group of land holdings in municipal or state ownership. For discussion and mapping purposes, municipal land includes properties owned by land trusts, The Nature Conservancy and other quasi-public non-profit conservation organizations, as well as municipal park and recreation and school areas. State land consists of state parks, forests, fish and game and boat access areas, as well as institutional open space.

The importance of these lands within the context of the Region's Development Guide cannot be stressed enough. with the exception of a small amount of municipal and state institutional holdings, no urban development will occur in these areas in the future. In effect, the lands shown on the accompanying map have been committed to either passive or active outdoor recreation or conservation, or a combination of the two.

In Midstate Regional Planning Agency's report entitled "Open Space: Objectives, Policies, Inventory, Analysis," it was noted that, "...increased leisure time, and higher disposable income will have a multiplying effect on recreation demand. In addition, there will be increases in activity participation rates; boating, swimming, camping, hiking, and playing sports will continue to exhibit high growth characteristics." With the regional population expected to increase by almost 40 percent by the year 2000, it is important to plan for open space needs, in a time when increasing development pressures will be placed on the land.

The municipal and state lands are the foundation for the open space structure of the future. When combined with the proposed land use indicated on the Regional Development Guide Map, the total open space framework should meet the needs of future generations.

A partial listing of some of the largest and most regionally significant of these holdings is included herein. ("M" designates municipal land). For a more complete tabulation, the MRPA "Open Space" report cited above should be consulted.

Cromwell
- Cromwell Meadows

Durham
- Miller's Pond State Park
- Cockaponset State Forest
- Trimountain State Park
- Durham Meadows
- White Farm (M)/Municipal water impoundment sites

East Haddam
- Devil's Hopyard State Park
- Gillette Castle State Park
- Nichols Property (M)

East Hampton
- Hurd State Park
- Salmon River State Forest
- Meshomasic State Forest

Haddam
- Haddam Neck
- Higganum Meadows
- Miller's Pond State Park
- Hurd State Park
- George D. Seymour State Park
- Haddam Island State Park
- Haddam Meadows State Park
- Higganum Reservoir State Park
- Cockaponset State Forest
- Haddam Elementary School (M)

Middlefield
- Wadsworth Falls State Park
- Cockaponset State Forest
- King Property (M)
- Strickland Property (M)

Middletown
- Wadsworth Falls State Park
- Dart Island State Park
- Cockaponset State Forest
- Dooley Pond Access
- Kane Brick Co. Property (M)

Portland
- Wangunk Meadows
- Meshomasic State Forest

C H A P T E R I I

SECTION 12

HISTORIC PRESERVATION

HISTORIC PRESERVATION

In keeping with the Midstate Regional Planning Agency's policy that proposed land-use plans or policies not adversely impact any environmentally sensitive areas in the Region, a comprehensive inventory of historically significant structures has been completed for each of the eight member municipalities.

Each structure or site inventoried has been plotted on the accompanying control base map, and differentiated as to either National Register properties or other landmark structures. Also, Historic Districts in the region (both existing and proposed) have been plotted on this map. Thus, by utilizing all available information, e.g. Connecticut Historical Commission, The Inventory, Volume II, Greater Middletown Preservation Trust lists, local Historical Societies and Study Committees there now exists a complete regional list of historically and architecturally significant structures.

To date, the plans and policies as proposed for the Midstate Planning Region do not constitute any adverse impacts on existing or proposed National Register properties, either individual or District. There have been noted, however, several instances where other (non-NRHP) landmark or historically significant structures are situated in areas zoned for either General Commercial or General Industrial use. In each case, the structures have had plaques affixed by the Greater Middletown Preservation Trust. Each of these structures also has its own unique set of circumstances (one being owned by a local industrial firm; another being proposed for use as an Antique Store when restored, etc.).

As a land use planning objective, the MRPA will make a determination in each case as to subsequent proposals to necessary zoning variances, etc. to ensure future environmental compatability for any such structures. In some cases, the situations have already been resolved; e.g. two historic structures within the proposed Cromwell "Upper Houses" Historic Distric (located on the East side of Main Street, just within the proposed District boundary) have been in operation as stores for over a century; hence, no adverse impacting will result from the General Commercial zoning planned for this area.

As yet another objective in the preservation of regional historic resources, the MRPA has made a cooperative commitment to a local archaeologist who has applied to the Connecticut Historical Commission for an archaeological survey grant. If approved, this will be the first such study every undertaken within the Midstate Planning Region. At present, regional survey data of an archeological nature is virtually non-existent; and, any such documentation will add yet another dimension to an ever-expanding inventory of the historic resources within the Midstate Region.

Steps have also been implemented that will keep the MRPA staff apprised of all regional activity as regards any additional structures or Historic Districts either included, or proposed for inclusion, in the National Register of Historic Places; and, an "exchange of information" program has been established with the Connecticut Historical Commission, the Middlesex County Historical Society, and the Greater Middletown Preservation Trust. In return, the MRPA has made known to all local preservation groups and historians that access to the survey data compiled during the regional inventory is available through the Agency. Through such interaction, and the subsequent updating of information, the eventual implementation of overall land-use plans and policies can be effectively conjunctive to both existing and future historic preservation activities undertaken in the Midstate Planning Region.

C H A P T E R I I I

FUNCTIONAL PLANS

CHAPTER III

SECTION 1

WATER AND SEWER SERVICE

WATER AND SEWER SERVICE SYSTEMS

Preface

The existing and proposed water and sewer service systems, (as indicated on the accompanying maps) delineate existing, short range, and ultimate sewer service areas for the towns of Cromwell, Middletown, Portland and East Hampton.

At present, approximately 4.2% of the region has sewer service; and 6.3% of the region has water service. Initial construction (and proposed expansion) of these facilities is planned for areas which continue to experience (or are expected to have) significant urban development; and also for those areas having significant pollution problems, and thus constituting public health hazards.

The Regional Plan of Development suggests that urban development be confined to the northern section of the region, which includes portions of Middletown, Cromwell, Portland and East Hampton. Population densities in the water and sewer serviced areas of these towns are anticipated to be at least two dwelling units per acre. Beyond the serviced areas, a density of one dwelling unit per acre is anticipated, thus maintaining the rural character of the region. It is anticipated that limited development will continue to occur in the southern (and essentially rural) sections of the region. This section includes the towns of Durham, East Haddam, Haddam and Middlefield. Because of their rural and low density characteristics, these towns will not require public water and sewer service systems.

Water Resources

With surface and groundwater in ample supply to satisfy the present and estimated future needs of the area, the factors limiting the exploration and selection of the source to be developed are primarily dependent on economic and water quality considerations. Surface water bodies in the region, (except for specific areas of pollution) are reported to be of excellent quality, i.e. soft to moderately hard, and have low concentrations of mineral substances. Anticipated treatment methods include chlorination and removal of turbidity, color, manganese and iron. Groundwater eminating from water-bearing subsurface deposits within the region is generally found to be of excellent quality. Water eminating from some aquifers will require no other treatment than chlorination; however, some possess iron, manganese concentrations, and hardness in sufficient quantities to warrant treatment. Hence, groundwater has a greater potential for development than does surface water, because it is more economically distributed; and, as mentioned, the quality of groundwater in the region has been determined to be of excellent quality.

Water Requirements

Approximate water requirement quantities to satisfy both present and future demands of the region's communities are based upon the findings in a report prepared by Cahn Engineers entitled: A Report on Water Supply Sanitary Sewerage and Storm Drainage Facilities for The Midstate Planning Region. Certain modifications were applied to Cahn's projections in order to more accurately reflect regional development patterns that have recently occured.

On the basis of present and future population projections (and the prospective growth patterns within the region), member municipalities' water requirements were estimated for the year 2000. Domestic consumption rates range from the present rate of 70 g.c.d. (gallons per capita per day) to the projected rate of 90 g.c.d. for the year 2000. The present commercial consumption rate is estimated to be 500 gallons per net acres intensively utilized for commercial use. The projected consumption rate has been estimated to be 600 gallons a day per net acre. This estimate is based on the actual consumption rate of Middletown's commercial users at present. It is assumed that the future commercial water requirements of regional member municipalities will not exceed Middletown's present requirements. Water demands for industrial use is estimated to be 1300 g.a.d. (gallons per day per acre) for light industrial areas, and 5000 g.a.d. for heavy industrial use. The consumption rates are applied to the net or intensively utilized acres (it is assumed that, because of the emphasis on conservation and the Environmental Protection Agency's regulations requiring the recirculation of water used in industrial processes, the consumption rates for industrial use will be maintained at the same level). The projected population for the year 2000 is based on estimates by the MRPA and OPM. Projected additional commercial acreages required are based on population projections. Requirements of additional industrial acreages are based on projected employment statistics which were obtained from the Department of Transportation.

Sewer Service

Disposal of sanitary wastes can be accomplished in several ways. In a cooperative, district, or regional arrangement, several towns combine to provide a common facility. In the case of a municipal system, a single town provides a facility only for its own use. On a private basis, disposal facilities are installed, operated, and owned by private individuals (each of the three methods described is utilized in the Midstate Region). Regional and municipal facilities include a widespread network of small local sewers flowing to interceptor sewers, which then convey the sewage to the water pollution control plant for treatment. This type of system may also include pumping stations to overcome any grade or location problems.

The design flow (or sewerage capacity) of a water pollution control plant is determined by first estimating the future population and land use of the area to be served by the system. These factors are influenced by several variables; e.g. proposed highway construction, availability of transportation, availability of labor, existing tax structures, availability of local road systems and utilities, and the topographic and geologic features of the land. Initially, plants are designed to accomodate projected 20 year flows.

The design period for determining the size of a large trunk line is generally considered to be 50 years. Laterals and smaller local sewers are designed for ultimate capacity as determined by projected land use plans and population densities. Sewer lines are ordinarily placed in basins that follow favorable topography to thus facilitate a gravity flow and minimize the need for pumping stations. Water pollution control plants must be located near a watercourse with adequate dry weather flow to receive the treated water effluent of the plant. In this way, the natural quality of the watercourse is not impaired beyond the limits as established by the State Department of Environmental Protection (D.E.P.).

The design flows capacity for the sewer service systems in the Midstate Region were derived primarily from records kept by existing sewer systems; and are essentially the same as the consumption rates indicated for water requirement. The approximate rate of discharge flows is 90 g.a.d. for residential, 500 g.a.d. for commercial, 1300 g.a.d. for light industrial and 5000 g.a.d. for heavy industrial. An additional allowance of 200 g.a.d is made for ground and stormwater which infiltrates into the system. The following section describes the groundwater resources and the present and projected water and sewer requirement of each of the Midstate Region's member municipalities.

CROMWELL

Water Resources

The Gardiner municipal production well, located in the northeast portion of Cromwell, is underlain by deposits of glacial outwash of course-grained stratified drift. These deposits are capable of yielding large amounts of water. A properly administered well field in this area has been estimated to have a potential yield of as much as 20 to 30 m.g.d. (million gallons a day).

WATER REQUIREMENTS

	Present:1977		Projected 2000
Estimate Population	10,400		17,000
Estimate Percent Served.	70%		95%
Population Served	7,280		16,150
Average Domestic Consumption (70g.c.d)	.51 m.g.d.	(90g.c.d.)	1.45 m.g.d.
Commercial consumption (500g.a.d)	.05 m.g.d.		.09 m.g.d.
Industrial Consumption (1300g.a.d)	.10 m.g.d.		.15 m.g.d.
Average Daily Consumption	.66 m.g.d.		3.4 m.g.d.

UTILIZATION OF EXISTING WATER SOURCES

Gardiner Well .66 million gallons a day	Shunpike Rd. Reservoir 3.0 million gallon capacity	Summit Drive Distribution Tank .6 million gallon capacity

Long term improvements consist of expanding the existing water-supply system to encompass the entire town. This will entail the development of new wells, the construction of new pumping facilities, facilities for removal of iron and manganese, provision for future storage, and construction of new supply mains.

Sanitary Sewer System

The town of Cromwell is serviced by a regional sewerage system, i.e. the Mattabassett District Water Pollution Control Plant. This plant processes effluent from portions of Newington, Rocky Hill, New Britain, Berlin, Cromwell and the Westfield district of Middletown. The plant has a design capacity of approximately 30 m.g.d., thereby having the potential of

accomodating Cromwell's future demands. At present, 27.3% of the town is within the sewer service area which includes high density residential, commercial, and industrial zones. At present, the Mattabassett regional system treats approximately 17 million gallons a day, of which 4% or .68 m.g.d. is discharged from Cromwell. Approximately 57% of the population is currently served by the system which includes, 1,875 dwelling units, 58 commercial and public units, and 6 industrial units.

MIDDLETOWN

Water Resources

Middletown has access to glacial deposit groundwater aquifers adjacent to the Connecticut River, which are capable of yielding prolific amounts of water. The Canel, River Road, and Sumner Brook aquifers have a combined estimate safe yield of 29 million gallons a day.

Surficial sources include the Mount Higby Reservoir and the Laurel Brook Reservoir, which have a combined safe yield of 2.2 m.g.d.

WATER REQUIREMENTS

	Present:1977		Projected 2000
Estimate population	40,050		52,000
Estimate Percent Served	85%		95%
Population Served	34,042		49,400
Average Domestic Consumption (70 g.c.d.)	2.4 m.g.d.	(90 g.c.d.)	4.4 m.g.d.
Commercial consumption (500 g.a.d.)	.18 m.g.d.		.26 m.g.d.
Industrial Consumption (1300 g.a.d.) Light Industrial	.62 m.g.d.		1.0 m.g.d.
Industrial Consumption (5000 g.a.d.) Heavy Industrial	.26 m.g.d.		.90 m.g.d.
Average Daily Consumption	3.46 m.g.d.		6.5 m.g.d.

UTILIZATION OF EXISTING WATER SOURCES

River Road Well 4 m.g.d.	Mt. Higby Reservoir 1.4 374 Million gal. storage capacity	Distribution Standpipes 3 Million gal. storage

SANITARY SEWERS

The Middletown Water Pollution Control Plant has a design flow capacity of 6.6 m.g.d.; and, at present, the average daily flow of the plant is 4 million gallsons. The plant services 3,500 units, including residential, commercial and industrial users. Approximately 1,500 units, comprised mostly of residential units from the Westfield district, are serviced by the Mattabasset district system. The sewer service area encompasses approximately 3,184 acres of the region.

PORTLAND

Water Resources - The preglacial bedrock valley of the Connecticut River, occupying the area south of Gildersleeve Island, including Jobs Pond and Riverdale, offers a great potential for developing groundwater supplies. Presently, the town's public water supply is provided by a groundwater well located in the town's northwest section ajacent to the Glastonbury turnpike. This well is underlain by unconsolidated sand and gravel deposits, and has a safe yield of .5 m.g.d.

WATER REQUIREMENTS

Present: 1977		Projected: 2000	
Estimated population	9,000		11,000
Estimated percent served	60		85
Population served	5,400		9,350
Average domestic consumption (70 g.c.d.)	.38m.g.d.	(90g.c.d.)	.84m.g.d.
Commercial Consumption (500 g.a.d.)	.05m.g.d.		.06m.g.d.
Industrial Consumption (1,300 g.a.d.)	.15m.g.d.		.36m.g.d.
Average daily consumption	.59m.g.d.		1.26m.g.d.

Existing Water Sources Utilized

Glastonbury Turnpike Well	Portland Reservoir	Distribution Storage
.5 m.g.d.	1.01 m.g.d. (120 million gallons storage catacity)	6 million gallons

Sanitary Sewer System - The Portland Water Pollution Control Plant has a design flow capacity of 1.2 million gallons. At present, it services 741 residential units and 115 industrial and commercial units, discharging .65 m.g.d. to the treatment plant. Short term expansion proposals include the provision of an interceptor sewer to the Gildersleeve area, with connections to local sewers for surrounding residential neighborhoods.

EAST HAMPTON

Water Resources - At present, several water supply sources are underconsideration as a potential public water supply system for the town of East Hampton. The Pine Creek aquifer, for example, has a potential safe yield of 1.5 m.g.d. other areas containing potential groundwater supplies are located along the Salmon River, and the Cobalt landing area adjacent to the Connecticut River. These sites are geologically similar to other areas abutting the Connecticut River where high capacity water wells have already been developed. The initial public water system will service both the Lake Pocotopaug area and East Hampton Center. This system will be serviced from a 2 million gallon storage reservoir which will store water drawn from the Pine Creek well.

Sanitary Sewer - East Hampton at present has no municipal sewerage system; however, the need for a municipal sewage system for the town has been well established. The two areas of intense development mentioned earlier (i.e. East Hampton center and the Lake Pocotopaug area), are also scheduled for the initial sewer system as well. This proposed sewer system will service a total population of 5,400, and will encompass an area of 3,260 acres. It is estimated that the initial design flow capacity of the water pollution control plant will average 2 million gallons a day.

Other Regional Municipalities - It has been determined that Middlefield, Durham, Haddam and East Haddam will not require municipal water or sewer systems in the foreseeable future. The anticipated development patterns for these municipalities do not justify the expense of such facilities. At present, water requirements in these towns are satisfied through utilization of individual on-site wells; and sanitary sewage disposal is accomplished by means of independent on-site subsurface septic tanks and leaching field systems, the combination

of which should continue to successfully satisfy these towns' needs. There are however, some areas within these towns that potentially might experience eventual pollution problems. They are: East Haddam; the lake Hayward, Moodus Center, and East Haddam center areas; Haddam; portions of Higganum and the Hidden Lake area; and in Middlefield, the Lake Beseck area. All of the areas cited here possess dwelling densities of greater than one unit per acre. These communities could ultimately seek non-structural solutions to effectively remedy any such eventual pollution problems, such as community sanitary disposal systems, etc.

CHAPTER III

SECTION 2

TRANSPORTATION

TRANSPORTATION PLANNING

The Midstate Regional Planning Agency (MRPA) is the Metropolitan Planning Organization, designated by the Governor of Connecticut to carry out the transportation planning in the Midstate Region (in accordance with regulations of the U.S. Department of Transportation). Planning is carried out in cooperation with chief elected officials, various agencies of the State, operators of mass transportation services, and the public. As a function of its role as a Metropolitan Planning Organization, the MRPA must endorse all proposed transportation improvements in the urbanized portions of the Region which utilize federal funding assistance. Without MRPA endorsement, a federally funded urban transportation project may not be implemented.

In fulfillment of its planning responsibilities, the MRPA annually updates a Prospectus on Urban Transportation Planning which encompasses the major transportation issues facing the Region, the Agency's approach to the numerous elements of the transportation planning process, and the anticipated accomplishments of the process, as well as a multi-year schedule of planning activities. On an annual basis, the MRPA prepares a Unified Work Program detailing planning activities to be undertaken during the ensuing fiscal year.

One major focus of the transportation planning process is the preparation and annual update of the regional transportation plan. The transportation plan covers transit, highway proposals and long-range capital intensive improvements, as well as short-range operational type improvements to the existing transportation systems. A five-year Transit Development Program provides the basis for the plan's transit recommendations. The major long-range improvements recommended in the plan are shown in Figure and Table which follow. Details of these projects and a discussion of the short-range improvements are presented in the actual plan.

Funding for ongoing transportation planning and for the implementation of recommended improvements comes largely from federal and state sources. MRPA receives planning assistance grants from the Federal Highway Administration and the Urban Mass Transportation, which grants in turn are matched by state and local funds. Project funding is made available through various Federal-Aid Highway Acts and Urban Mass Transportation Acts. State and local funds are also used to match these funds in many cases.

MIDSTATE REGIONAL TRANSPORTATION PLAN

HIGHWAY IMPROVEMENT SUMMARY

		Year of Completion			
		1980	1985	1990	2000
1.	New multi-lane connector, Route 9 to Route 15		X		
2.	Revise I-91/Route 72 interchange	X			
3.	Upgrade Route 9		X		
4.	Upgrade Route 66				
	a. Rebuild railroad bridge over highway	X			
	b. Rebuild highway bridge over river	X			
	c. Widen interconnecting segments	X			
5.	Upgrade Route 17			X	
6.	Extend DeKoven Drive	X			
7.	Reconstruct East Main Street		X		
8.	Rebuild High Street bridge over railroad		X		
9.	Realign Broad St/Church St/ Pleasant St/So. Main St intersection	X			
10.	New connectors, Pine Street to Vine Street and South Main Street				X
11.	Replace West Street bridge over railroad		X		
12.	Reconstruct River Road			X	
13.	Reduce elevation of monument wall at Main St/Bartlett St intersection	X			
14.	Remove railroad bridge over Route 17			X	
15.	Straighten section of Collins Hill Rd.			X	
16.	Rebuild section of Jobs Pond Road				X
17.	Build bypass lane on Route 72 at Coles Road	X			
18.	Realign and regrade Jackson Hill Rd/ School St/Cedar St. intersection		X		
19.	Straighten section of Cedar Street			X	
20.	Regrade Cedar St/Derby Rd. intersection		X		
21.	Realign and regrade Cherry Hill Rd/ Laurel Brook Rd. intersection	X			
22.	Replace Route 157 bridge over railroad		X		

C H A P T E R I I I

SECTION 3

SOLID WASTE MANAGEMENT

SOLID WASTE MANAGEMENT

The Solid Waste Management Plan for the Midstate Region is a synthesis and modification of several plans which have been formulated in recent years. The first step in the current solid waste planning process was taken in 1973, when the General Electric Company, in cooperation with the State Department of Environmental Protection, prepared "a plan of solid waste management for Connecticut". This plan was unique in that it recommended the first integrated, statewide resource recovery system in the country. The plan envisioned a series of ten dry fuel, gas pyrolysis or oil pyrolysis resource recovery plants and several transfer stations and residue disposal sites. To implement the system, the plan recommended establishing the Connecticut Resources Recovery Authority (CRRA). The State Legislature, following this recommendation, in 1973, created the CRRA with passage of Public Act 73-459. In December of 1974, CRRA broke ground on its first resource recovery plant in Bridgeport.

Over the past four years several changes in the proposed number of plants and supportive facilities have occurred. The current thinking by CRRA and the state DEP points toward far fewer plants than were originally proposed. (In recent months, DEP planners have been talking about the probability of only three or four plants being built). This factor has been taken into consideration in formulating the "solid waste management plan for the Midstate Region." In addition to the statewide plan, components of the following have also been utilized:

1.) Twenty-Year Solid Waste Management Plan for Southeastern Connecticut - 1975-1995

2.) Twenty-Year Solid Waste Management Plan for Midstate Connecticut - 1976-1996
(Both propared by Resource Planning Associates, Inc. in conjunction with MRPA, et.al.)

3.) Midstate Staff Update Based on Recent Developments

The Southeastern Plan included the towns of East Haddam, East Hampton and Haddam (part of the original Southeastern "waste-shed"), while the Midstate plan encompassed the municipalities of Middletown, Cromwell, Portland, Durham and Middlefield (part of the (Central and South-central "waste-shed".)

Thus, the "Midstate Region - Solid Waste Management Plan" represents an integrated, dynamic planning process, which is consistent with the resource recovery goals of CRRA, the environmental regulations and policies

of DEP and the requirements and desires of the municipalities. (All eight municipalities have adopted the concepts of the plan and some have been implemented).

The plan sets forth the existing solid waste disposal system (i.e. landfill or transfer station) and recommends one or more long range options for each municipality. All of the long-range options involve some form of resource recovery, either in a CRRA plant or through private enterprise. In addition, short range options (i.e. interim disposal methods until a resource recovery plant is built) are given for East Haddam, East Hampton, and Haddam.

On the plan, six graphic patterns and six symbols are used to show the various options and their combinations. The reader needs only to combine a pattern with a symbol to arrive at a specific recommendation for a municipality. The preferred long-range option is indicated by a star, however, most towns have more than one viable long-term solution. Such is the case, for instance, in Middletown. The proposed Sawmill Brook Race Track facility is the recommended long-term option, principally because of cost. The developer of the race track has offered to dispose of the city's refuse for the next twenty years either through on-site resource recovery or transfer to an acceptable site. However, the CRRA - Berlin - New Haven Area option should be given equal consideration by city officials, because of long term reliability. A third option is the proposed in-region Pratt and Whitney Aircraft Resource Recovery Plant.

One final note, the exact locations for the two CRRA long-range options and transfer stations (except for East Haddam) have not been finalized at this time. The transport route arrows indicate general directions toward the recommended resource recovery option.

CHAPTER III

SECTION 4

AREAS OF SHORT TERM GROWTH

AREAS OF SHORT-TERM GROWTH

The areas depicted on the accompanying map indicate those portions of the region which will experience substantially higher growth in population or employment through the year 1990. The boundaries are based on the "Traffic Zones" established by the Connecticut Department of Transportation (C.D.O.T.). A statistical analysis of the C.D.O.T. employment and population projections by traffic zone was made and those zones which were in the first quartile for either population or employment increases are indicated as areas of short-term growth. The population projections were based on the projections found in an earlier section of this report and other factors included in the projections were: existing zoning, existing and programmed utilities, vacant land and other related factors. Almost all of the short-term growth areas have either programmed or planned utility expansions or improvements.

C H A P T E R I V

PROPOSED LAND USE

CHAPTER IV

PROPOSED LAND USE

PROPOSED LAND USE

INTRODUCTION

The Midstate Region's Proposed Land Use Plan is noteworthy for two important reasons: 1) its emphasis on implementation, and 2) its high degree of detail. Moreover, the plan is a unique blend of regionally significant elements and locally-originated plans and proposals, formulated by official boards and commissions with input from the general citizenry.

As was noted in the preface, the proposed Land Use Plan is a "Physical Plan" drawing from past works of the Agency and recent updates of the natural resource information base and data in several other functional areas. Taken alone, however, the Land Use Plan is a static picture, or snapshot, of the region around the year 2000. Integrated with the goals, policies, strategies and measurable objectives of Chapter I, it becomes an ongoing, dynamic process with definable milestones aimed at achieving the desired future picture of the region.

The probability of plan implementation is greatly increased through the Agency's technical assistance program. Throughout the fifteen years of its existence, MRPA has had a very close relationship with its eight member municipalities, and their official boards, commissions, agencies, and citizen groups. These ties have been strengthened even further in the past five years through contractual agreements with seven of the region's municipalities to provide technical assistance to local Chief Elected Officials, Planning and Zoning Commissions, Inland Wetland Agencies and other local groups in the preparation of master plans, zoning and other land use regulations, in review of site plans for development proposals and in undertaking several special projects. This experience has given MRPA direct input into the local land use decision-making process.

Earlier, it was mentioned briefly that the Land Use Plan reflects plans and proposals brought forth at the local level. This factor also enhances the probability of achieving the desired land use pattern.

However, it must be stressed that the region's Land Use Plan is not merely an enlargement of town plans. Rather, it is a synthesis of the most desirable components of town plans which are in harmony with regional goals, existing regional land use patterns, and newly-formulated regional land use factors.

The high level of detail is achieved through the use of a three map series of controlled base 1" = 2000' scale U.S.G.S. quad sheet composites, reduced to 1" = 4000' for reproduction purposes. (All regional natural resource information and other map data were drafted at 1" = 2000') The accuracy of these maps facilitates user identification of proposed land use categories with respect to key reference points. The use of three maps not only permits a more detailed classification of land uses than is customarily possible on a single map, but also separates uses by degree of intensity.

In the initial stages of plan formulation, it was felt that this more detailed approach to land use proposals, rather than the traditional "Broadbrush" regional plan, would be more easily understood by regional constituents. Moreover, since most of the recommended areas for particular land uses rely heavily on accurate updated natural resource information and specific technical data, the land use decision-makers of the future are presented with more accurate and technically sound criteria on which to base their decisions.

The three maps which comprise the Proposed Land Use Plan are listed below, with descriptive notes on some of the land use categories.

I. Conservation/Low Intensity Use Areas

Open Space

Existing Open Space - State parks, forests, fish and game areas, water company, town and land trust lands

Critical Areas Open Space - Flood plains, inland wetlands, waterbodies, water courses

Scenic Areas Open Space - Vista areas, ridgetops, potential expansion of state and municipal holdings

Residential

Rural Density Residential - One Dwelling unit or less per acre

Note: The following two general categories are included on this map for the purpose of defining the open space and rural density residential areas. They are sub-categorized on the next map.

Other Residential

Commercial, Industrial, Institutional

II. Development/High Intensity Use Areas

Residential

Low Density Residential - 1-4 dwelling units per acre

Medium Density Residential - 4-8 dwelling units per acre

High Density Residential - More than 8 dwelling units per acre

Commercial

Central Business District - Intensive business, commercial, office, major institutional, high density housing

General Commercial - Village and neighborhood shopping and business

Regional Shopping Center

Industrial

General Industrial - Sewer and water service; greater variety allowed

Restricted Industrial - No sewer and water service; limits on type of uses because of discharge

Institutional

Institutional - Public and quasi-public buildings and uses

III. Special Use Areas

Historic Districts - Includes statutory and potential areas

Gateway Conservation Zone

Potential Groundwater Areas