



**Strategic Plan for the Preservation/Protection
of the
Residentially-Zoned Land in Maromas**

Prepared for Advocates for a Maromas Plan

*Erin O'Hare, AICP
Erin O'Hare Land Use Planning
510 Great Hill Road, Guilford, CT 06437*

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Advisory Plans: State, City, and CVH	32
Watersheds (or Drainage Basins).....	34
Northeast Utilities 345-kV Transmission Line Facility	35
Long Lane Property	35
Physical Constraints to Development	36
IV. CRITERIA FOR PRIORITIZATION IN PRESERVATION/PROTECTION	
PLANNING	37
Development of Criteria for Prioritization	37
Identification of Important Ecological Systems Needed	38
V. SUGGESTED POSSIBLE PRESERVATION PRIORITY AREAS IN	
MAROMAS AND NEXT STEPS	39
Methodology Used to Select Key Areas for Preservation/Protection in Study Area	39
Key Areas for Preservation/Protection in Study Area	40
Next Steps in the Process	42
Introduction of the Conservation Area Overlay Zone Concept	43
Common Ground	44
VI. RECOMMENDED ACTIONS FOR THE PRESERVATION/PROTECTION	
OF STUDY AREA WITH AGENCY/ORGANIZATION INDICATED	46
A. Regulatory/Policy Approaches to Land Preservation/Protection	46
Coastal Area Extension/Gateway Commission Extension	47
Connecticut River Assembly	48
Plan of Conservation and Development	48
Open Space Plan	49
Land Use Regulation-Related Matters (Zoning, Subdivision, Wetlands)	50
Biodiversity Preservation	51
Agricultural Lands	52
Water Supply Lands	52
Scenic Resources Protection	53
Taxing District Funds	53
Public Act 490 Preferential Tax Program	54
Sewer Extensions	54
State Plan	54
B. Non-Regulatory/Policy Approaches to Land Preservation/Protection	55
Open Space Planning	55
Biodiversity Preservation Planning	57
Agricultural Preservation Planning	59
Scenic Protection Planning	60
C. Action Relative to Possible Development Proposals	61
Proactive, Constructive Early Actions	61
Adverse Actions	63
D. Public Outreach, Promotion of Public Awareness of Maromas' Assets,	
and Development of a Town-Wide Environmental Ethic	65

VII. APPENDICES

(Appendices accompany report in separate, companion volume)

(* - indicates a large map that accompanies the report and volume of Appendices separately)

- Appendix A - "Phase I - Progress Report", Erin O'Hare, AICP, December, 2003
- Appendix B - "Maromas: Water Resources, Local and Subregional Drainage Basins, Committed Open Space, and Trails", scale 1:1,000; prepared by Midstate Regional Planning Agency for consultant, dated August 5, 2004; (a full-size copy of this map accompanies the report as well)*
- Appendix C - "Composite Factor Map for Preservation/Protection of Residentially-Zoned Land in Maromas", prepared by Erin O'Hare, AICP, August, 2004; (map accompanies this report separately)*
- Appendix D - "Maromas Portion of the Middle Haddam USGS Quadrangle Topographical Map", USGS; and "Draft Topographical Map of Maromas With Wetlands and Waterbodies, and Some Committed Open Space", Midstate Regional Planning Agency, 10/30/03
- Appendix E - "Maromas Natural Resource Values", Fall 2000
- Appendix F - "The Position of the Mattabeseck Audubon Society with Regards to the Future Development of the Natural Resources of Maromas", Lawrence Cyrulik, Mattabeseck Audubon Society; (undated)
- Appendix G - "Conserving Wildlife in Maine's Developing Landscape", Maine Audubon Society, Spring 2000; (A summary of impacts of development on native species, habitat requirements of native species, and design criteria for conserving open space.)
- Appendix H - "Unfragmented Forest Blocks Proximal to Maromas" (based on Land Use Data as Determined by State of Connecticut DEP 'CT Resources Protection Project'), prepared by Audubon, CT, 11/04/03
- Appendix I - "Continuous Blocks by Size in Maromas", The Nature Conservancy, 8/5/2003
- Appendix J - "NU-Maromas Areas (DEP Permit Required Hunting Areas) Map", DEP, (2 sheets), (undated)
- Appendix K - "Undeveloped Core in Central Connecticut", Audubon CT, (undated)
- Appendix L - "Correspondence from Dawn M. McKay, Analyst, DEP, Regarding State of Connecticut DEP Natural Diversity Data Base List of State Endangered, Threatened, or Special Concern Species for Species Identified by DEP as Within Maromas (with Species List attachment)", DEP, December 1, 2003

- Appendix M** - "State of Connecticut DEP Natural Heritage Program's State and Federally Listed Species and Significant Natural Communities, for the City of Middletown, CT", May 2003
- Appendix N** - "A County Report of Connecticut's Endangered, Threatened, and Special Concern Species: Middlesex County", DEP, June 9, 2003
- Appendix O** - "Mattebesett Audubon Society Seasonal Bird Count Surveys by Habitat Type", (undated, cover letter, dated 8/28/2000)
- Appendix P** - "CT River Estuary and Tidal Wetlands Complex", area designated a Wetland of International Importance, RAMSAR Convention, (undated)
- Appendix Q** - "Detailed Map of Section of the RAMSAR Project Area within Maromas (Map#6)"; Wetland of International Importance, RAMSAR Convention, (undated)
- Appendix R** - "City of Middletown, Wetlands Map", (portion), (taken from City website)
- Appendix S** - "*Spring 2000 Vernal Pool Inventory*", Middlesex County Soil and Water Conservation District, Spring 2000
- Appendix T** - "*Verified Vernal Pools and Potential Vernal Pools of Middletown, CT*", *Spring 2000 Vernal Pool Inventory*, Middlesex County Soil and Water Conservation District, (copy of Maromas section of original map); Spring 2000
- Appendix U** - "DEP Fishery Report", DEP, 2004
- Appendix V** - "Maromas: Steep Slope Map", scale 1:1,000; prepared by Midstate Regional Planning Agency for consultant, dated August, 5, 2004; (a full-size copy of the map accompanies report as well)*
- Appendix W** - "Ridgeline and Summit Protection Policy Areas - Hebron Region, Connecticut", State of Connecticut DEP; (Also, see Appendix X, below)
- Appendix X** - "State of Connecticut Ridgeline Protection Policy", DEP, dated 7/14/97
- Appendix Y** - "Land Use of Maromas Area", DEP data, prepared by Audubon, CT; and "Maromas Area, Middletown, CT", DEP data, prepared by CT River Conservation District for the report; and, "State of CT DEP - GIS Data Guide Lookup Table - 1995 Land Use Categories", DEP
- Appendix Z** - "Last Green Valley" (satellite image), The Nature Conservancy; and "Maromas Area in Nighttime Satellite Image of Greater New York Metropolitan Area", (source unknown)
- Appendix AA** - "DEP Source Water Assessment Program – Aquifer Protection Area 98 - John S. Roth Wellfield - Middletown and Portland, CT – Figure 98-1", DEP, November 26, 2001

- Appendix BB** - "Connecticut Valley Hospital – Reservoir Watershed", dated December 1995, from "Water Supply Plan – Connecticut Valley Hospital; Department of Mental Health and Addiction Services, State of CT - Middletown, CT Plan", dated "revision date: August 10, 2001"
- Appendix CC** - "Maromas: Agricultural Related Lands", (from DEP Land Use/Land Cover data), Connecticut River Conservation District (prepared for consultant); and "State of CT DEP - GIS Data Guide Lookup Table - 1995 Land Use Categories", DEP
- Appendix DD** - "Mattebesett Trail – Maromas Section – Middletown, CT", GIS map; Connecticut Forest and Park Association, dated 8/2004; and "Comments from the Connecticut Forest and Park Association", October 16, 2000; and "National Scenic Trial Proposal" (various supporting documents); and "Metacomet-Monadnock-Mattabesset"(Trail Corridor in Connecticut and Massachusetts); and "Mattebesett Trail", *CFPA Blue-Blazed Trail Guide Book*, (excerpted pages)
- Appendix EE** - Historic maps: "Middletown Portion of the Blodget Map of 1792"; and "F.W. Beers, *Country Atlas of Middletown, Connecticut*, 1874"
- Appendix FF** - "Streets in Maromas", Erin O'Hare, AICP
- Appendix GG** - "Zoning Map – City of Middletown Department of Planning, Conservation & Development", (undated, color, 11 x 17 map); and "Zoning Map – City of Middletown" (portion of Residential Zones in Maromas), (taken from City website)
- Appendix HH** - "City of Middletown Land Use Regulations Pertaining To Open Space: City of Middletown, CT Zoning Code - Open Space Subdivision Development (Cluster Development)' and Large Lot Environmentally Sensitive Subdivision Development Provisions and City of Middletown CT Subdivision Regulations, Section 5.17 - Open Space"
- Appendix II** - "Listing of Maromas Properties in City Tax Assessor's Public Act 490 Preferential Tax Assessment Program (Ten Acres or Greater)", City of Middletown Assessor's Office, August, 2004
- Appendix JJ** - DEP/City Correspondence Regarding *CRISP* Sewer Service Area, dated 12/21/2001; and Middletown Code Section 9-1.1: *Modification of the Approved Connecticut River Interceptor Sewer Service Area* [amended 11/13/2002] (regarding procedure for modifying SSA boundaries); and Figure 12.2., "Sewer Service Area", *Draft Plan of Conservation and Development*, Buckhurst Fish & Jacquemart, Inc., April 2002, (re: the limits of the exiting City sewer in 2002); and (see Appendix KK, below)
- Appendix KK** - "Facilities Plan – Proposed Sanitary Sewer Service Area (Consistency with State C & D Mapping)", dated 12/31/03, granted "Section 8-24 approval" by PZC on 6/16/04 - (accompanies report separately)*

- Appendix LL** - "*Existing & Proposed Open Space*" (undated) *The Plan of Conservation & Development - Middletown, Connecticut*, (Commonly referred to as "Conservation Commission's 1993 Open Space Plan")
- Appendix MM** - "Watershed Boundaries by Connecticut Valley Hospital - Zoning Map of Middletown, Connecticut", "*Water Supply Plan - Connecticut Valley Hospital; Department of Mental Health and Addiction Services, State of CT - Middletown, CT Plan*", revision date: August 10, 2001
- Appendix NN** - "*The Future of Open Space Acquisitions and Developable Land in Middletown*", William Warner, Director of Planning, Conservation and Development, City of Middletown, dated January, 2004, as submitted to City of Middletown Planning & Zoning Commission
- Appendix OO** - "City Watershed Boundary Map", *Comprehensive Drainage Study Atlas*, City of Middletown Planning Department
- Appendix PP** - "Maps 67" & "Map 68", (DEP Drainage Basin map data), taken from *Atlas of the Public Water Supply Sources and Drainage Basins of Connecticut*, DEP Bulletin No.4, State of CT DEP, June 1982
- Appendix QQ** - "Map of the Proposed Segment 1 Area In Maromas", "*Application to the Connecticut Siting Council for a Certificate of Environmental Compatibility and Public Need for a 345-kV Electric Transmission Line Facility and Associated Facilities Between Scovill Rock Switching Station in Middletown and Norwalk Substation in Norwalk: Joint Filing by the Connecticut Light and Power Company and the United Illuminating Company*", Volume 1 of 12, October 9, 2003
- Appendix RR** - "Criteria for Prioritization of Open Space Documents", (two sets as adopted by the City of Middletown Conservation Commission in 1990 and 2000)
- Appendix SS** - "Open Space and Watershed Land Acquisition Grant Program - Open Space Acquisition" (rating criteria), State of CT DEP, (undated)
- Appendix TT** - Trust for Public Lands "Connecticut River Program" Correspondence, 8/2004
- Appendix UU** - "Scenic Resource Protection Methodologies", Erin O'Hare, AICP, Erin O'Hare Land Use Planning, August, 2004
- Appendix VV**- "Upper Connecticut River Conservation Zone", Chapter 477c., Connecticut General Statutes, Sec.25-102aa.-102oo.
- Appendix WW** - Town of Woodbury, CT, Subdivision Regulations, Section 4.18 - "Watershed/Viewshed Regulated Area"
- Appendix XX** - "Town of Old Saybrook, Ordinance for Designation of Town Roads"; Town of Old Saybrook, (undated)

- Appendix YY** - "Preservation Mechanisms and Technical Assistance Programs for Farmland and Managed Forestland", by Erin O'Hare, AICP; Erin O'Hare Land Use Planning, 8/2/04
- Appendix ZZ** - "Blow the Whistle on Pollution", Town of Westport
- Appendix AAA** - *An Ordinance Appropriating \$3,000,000 for the Acquisition of Land For Open Space and Other Recreational Purposes*; Ordinance No. 09-02; dated August 27, 2002
- Appendix BBB** - Northeast Utilities Letter to David Leff, DEP Deputy Commissioner, July 20, 2001
- Appendix CCC** - "Northeast Utility Map of Lands Slated for Possible Disposition", December, 2003; and, William Warner, Director of Planning, Conservation and Development; City of Middletown, CT, Letter to Salvatore Giuliano, Northeast Utilities, January 6, 2004, re: "Evaluation of Certain Unimproved Lands of NU"
- Appendix DDD** - "Figure 3.", *Draft Connecticut River Interceptor Sewer Project (CRISP)*, Department of Economic and Community Development, January 2001, (Map depicting "areas recommended for protection" which about the Study Area)
- Appendix EEE** - "Figure 9.2.", "1993 Open Space Plan with Recent Acquisitions", *Draft Plan of Conservation and Development*, Buckhurst Fish & Jacquemart, Inc., April 2002

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Strategic Plan for the Preservation/Protection of the Residentially-Zoned Land in Maromas

I. INTRODUCTION AND OVERVIEW

This report represents Phase II of a two-part contract with Advocates for a Maromas Plan, a local organization whose mission is to preserve and protect the natural resources, landscape and character of Maromas.

The first part of the work produced the document, *Phase I – Progress Report*, December, 2003, which surveyed Maromas, both in terms of its physical characteristics and conditions and in terms of land use and policy, recent development proposals, and changes in regulations and policy. The *Progress Report*, included herein as **Appendix A**, is comprised of: I. Resource Compilation; II. Resource Assessment; III. Report on Plan of Work Alternatives; and IV. Selection of Plan of Work. Upon review and analysis of the research work, four alternative scopes of work were presented to AMP for completion under Phase II.

The involvement of the Connecticut Fund for the Environment with the State of Connecticut Department of Environmental Protection (DEP) and the City of Middletown on the resolution of the sewerage issue in the Industrially-zoned area of Maromas and the conservation of NU land in this area shifted AMP's focus to the residentially-zoned area. In April, 2004, AMP selected a Phase II work alternative from the four proposed alternatives offered that it felt would best support the mission of the organization, satisfy the terms of the project grant, and be feasible to implement given the volunteer nature of the organization: a strategic plan for the preservation/protection of the residentially-zoned land in Maromas.

The focus area is the residentially-zoned private and public lands in Maromas located eastward of Route 9, southward of HarborPark south to the Middletown/Haddam town line, not including the Connecticut River, referred to herein as "the Study Area". (See **Appendix C**, "Composite Factor Map for Preservation/Protection of Residentially-Zoned Land in Maromas" for demarcation of the Study Area. A full-size copy of **Appendix C** accompanies this report separately.)

The assessment of issues and resource factors completed in Phase I of the contract formed the foundation for the study. Data on subjects earmarked as key are expanded in Phase II. The report opens with a review of the Study Area's natural resource assets warranting preservation and protection and a review of specific topics/issues pertaining to the Study Area that have a bearing upon preservation options and decisions. Analysis of the natural resource base, ownership patterns, and existing conditions is supported with numerous maps and other data. Specific issue areas are briefly described, and land factors and regulations impacting conservation and development in the City are reviewed.

Criteria for prioritization of open space and priority areas for preservation are considered. Suggested priority preservation areas are indicated based on preservation principles applied to available data.

Strategies for preservation/protection are provided, organized as a set of recommendations, in the following subject categories:

- Regulatory/Policy Approaches to Land Preservation/Protection
- Non-Regulatory/Policy Approaches to Land Preservation/Protection
- Action Relative to Possible Development Proposals
- Public Outreach, Promotion of Public Awareness of Maromas' Assets, and Development of a Town-wide Environmental Ethic

Specific organizations and agencies targeted for the implementation/action of proposed recommendations are delineated by individual action item. Organizations and agencies listed are: Connecticut River Watershed Council, The Nature Conservancy, Middlesex Land Trust, Mattebesett Audubon Society, Connecticut Forest & Park Association, and the following agencies of the City of Middletown: Common Council, Conservation Commission, Urban Forest Council, Harbor Management Agency, Planning and Zoning Commission, and Inland Wetland and Watercourses Commission. These agencies may be approached by AMP in the context of their possible respective role relative to achieving the objectives of the Study.

The Appendices are comprised of maps and supporting data referenced in the text. Several maps listed in the Appendices too large to be included in the document with the other Appendix items accompany the document separately. Those items are so indicated.

It should be noted that numerous documents, (correspondence, reports, maps), in addition to those in the Appendices, were compiled and given to AMP for its library collection, many of which can be utilized for future public outreach events.

From this point, a discrete set of criteria for priorities for preservation/protection tailored to AMP's goals needs to be developed by AMP itself, based on the material presented in the report. The application of such a set of criteria to the data presented in the report, coupled with the strategies and recommended actions presented will result in a customized preservation priority scheme allowing AMP to further focus its limited resources. It is highly recommended that AMP and other conservation groups share data with the City and work constructively with the City on creative, productive preservation planning efforts.

A format note: Map titles are referenced in quotation marks, document titles are referenced in italics.

II. ASSETS OF THE STUDY AREA

Maromas' natural resource base and scenic qualities are unmistakable as they dominate the present landscape and inspire the call for preservation and protection. A cataloguing of the natural assets follows, first from the perspective from afar and next, a detailing profile of assets that warrant highlighting. Any one element may be a compelling reason for preservation or preservation may be warranted by the combined occurrence of many resource factors. The richness of Maromas, as evidenced by the length of the listing of significant resource factors below, points to the establishment of an overall preservation plan for the area. More discussion about this can be found in Section V..

Overall Qualities

A visitor to the area is viscerally moved by the area's significant beauty, ruggedness and wildness. The area's undeveloped condition alone does not account for this impact. The occurrence of a host of discrete natural resource elements in close proximity to each other, coupled with the intermittent presence of certain land uses – such as agricultural uses and public water supply source protection – creates the distinct effect. The roadways cross systems of the natural community offering glimpses into the wild areas beyond. And, notably, unlike some intriguing landscapes, as a consequence of the area's significant amount of committed open space --with parking areas and trails-- the public can directly experience Maromas' "wilderness".

Taken as a whole, from a state, regional or national perspective, the study area is notable for:

- its predominantly undeveloped character in stark contrast to the urban character of the surrounding environs
- a fine example of green infrastructure¹
- scenic beauty
- a particular richness in diversity of landscapes in a condensed area -- from hayfields, to forests, to ravines, to ledges, to lakes, to swamps, to homesteads, to pastureland, to fields
- continuing agricultural use of the land
- the presence of a series of visually accessible reservoirs
- a significant expanse of unfragmented forested land that supports a rich biotic community, maintains high water quality and cleanses the air
- a significant amount of committed open space land (in the form of State land, City land, and TNC land)

¹ "Green infrastructure" is defined as the Nation's natural life support system - a strategically planned and managed network of wilderness, parks, greenways, conservation easements, and working lands with conservation value that supports native species, maintains natural ecological processes, sustains air and water resources, and contributes to the health and quality of life for America's communities and people. See www.greeninfrastructure.net for further discussion.

- the Connecticut River (which borders the Study Area along several stretches)
- existing access to Connecticut River and uplands (via the Blue Blazed Trail, and City, State, and TNC land)
- a portion of a nominated National Scenic Trail (the Mattebesset Trail segment of the Metacomet-Monadnock-Mattabesett Trail)
- a "signature parcel within the watershed of the Silvio O. Conte Connecticut River National Wildlife Refuge"
- a part of the Lower Connecticut River Corridor area under the "Wetland of International Significance" under the RAMSAR Convention

See **Appendix E**, "Maromas Natural Resource Values", and **Appendix F**, "The Position of the Mattabesock Audubon Society with Regards to the Future Development of the Natural Resources of Maromas", for, respectively, a listing and a summary description of the resources of the area, as well.

General and Composite Resource Maps

Several general and composite resource maps accompany the report designed to provide data valuable to planning efforts on a workable scale in addition to the many discrete resource factor maps included:

- "Composite Factor Map for Preservation/Protection of Residentially-Zoned Land in Maromas", **Appendix C**, completed by consultant, (accompanies report due to large size.)
- "Maromas: Water Resources, Local and Subregional Drainage Basins, Committed Open Space, and Trails", scale 1:1,000; dated August 5, 2004, prepared by Midstate Regional Planning Agency for this report, is included as **Appendix B** -- (in addition, a full-size copy of the map accompanies report due to large size).
- "Maromas: Steep Slope Map", scale 1:1,000; dated August 5, 2004, prepared by Midstate Regional Planning Agency for report, is included as **Appendix V** - (in addition, a full-size version accompanies report due to large size).
- A portion of the Middle Haddam USGS quadrangle topographical map is included as **Appendix D** as a base reference map depicting the rugged contour of Maromas, watercourses, and other geographically reference points.
- "Land Use of Maromas Area" and, a smaller-scale image, "Maromas Area, Middleton, CT", with accompanying document therein defining land uses, "DEP - GIS Data Guide Lookup Table -- 1995 Land Use Categories", is a useful resource for determining land use patterns in Maromas, is included as **Appendix Y**.

Discrete Natural Resource Elements Profiled

A breakdown of notable discrete natural resource elements of biological, scenic, and recreational value follows. They are categorized into two generalized groups:

environmental natural resource elements and cultural/regulatory natural resource elements. Protecting any one of these elements has merit. However, it is the overall image of the place that is so special and the continuing health and functioning of its natural system that is so critical. Consequently, a comprehensive approach to its protection is advocated.

The following compilation of disparate information will need to be analyzed in the context of the whole to derive an understanding of the important ecological systems in Maromas. Secondly, an assessment of the health of these natural systems should be completed.

**Environmental Natural Resource
Elements**

Landscape diversity
Large forest block
Biological diversity and imperiled species
Important migratory bird flyway
Connecticut River and associated
tidal wetlands
Water resources (including wetlands)
Vernal pools
Riparian areas
Fishery
Ridgetops and steep slopes
Geological features
Dark night sky

**Cultural/Regulatory Natural
Resource Elements**

Existing base of committed open space
Existing public water supply watershed
areas
Mattebesett Trail and other trails
Land in agricultural use
Archeological resources
Historic resources
Natural scenic resources

A. Environmental Natural Resource Elements

Environmental natural resource elements occurring in Maromas listed above are profiled below:

- ***Landscape diversity***

As mentioned above, Maromas is remarkable for its richness in diversity of landscapes in a condensed area -- from hayfields, to forests, to ravines, to ledges, to lakes, to swamps, to homesteads, to pastureland, to slopes, to open water, to fields. This characteristic is an indicator of the richness of the area in terms of ecological systems -- as well as adding to the area's scenic appeal.

- *Large forest block*

Forested areas are valuable for "...timber production, watershed protection, wildlife habitat, scenic vistas, and protection of air quality"² and as a setting for recreation. There is additional value assigned to a vast, uninterrupted area of forestland, as found in Maromas, as discussed below.

To understand the significance of the forest resource in Maromas, one must place it in the context of Connecticut. Sixty percent of Connecticut is forested. This may sound like a lot, however, it is the contiguity of the forested land -- its degree of fragmentation -- that is critical to the maintenance of its natural function; and is the location of the unfragmented blocks of forest in the larger regional picture that has importance relative to regional migration patterns, wildlife movement corridors, etc..

The importance of unfragmented forest is explained as follows:

*"Forest fragmentation, or the division of contiguous forest land into smaller or more complex patches, has the potential to change local hydrology, reduce forest interior habitat, increase site disturbances, and promote the invasion of exotic plants. Wildlife biologists have found that breaking up the large tracts of forest into many smaller forests by roads, homes, and other related land development can be detrimental to many species of wildlife".³ Also, see **Appendix G**, "Conserving Wildlife in Maine's Developing Landscape", Maine Audubon Society, for a summary of impacts of development on, and habitat requirements of, native species - a discussion applicable to Maromas.*

Data supports the presence an important unfragmented forest blocks in Maromas. **Appendix H**, "Unfragmented Forest Blocks Proximal to Maromas", map data, derived from remote sensing land use data, which depicts "habitat blocks", as delineated and defined by State of Connecticut DEP "CT Resources Protection Project". As per the map, "primary habitat blocks" are areas containing 2,000 acres or more "unfragmented natural lands" and "secondary habitat blocks" are areas containing between 50 and 2,000 acres of "unfragmented natural lands". The report stipulates that there must be 85% - a natural land within those blocks.⁴ The Nature Conservancy image depicting "Continuous Blocks by Size in Maromas", included as **Appendix I**, depicts in superb detail the Maromas terrain and the continuous forest blocks by size superimposed. The Maromas area is comprised of two 1,000 - 2,500 acre blocks, (approximately 3,000 acres in toto), separated only by Bear Hill Road, Brooks Road and Maromas Road, (the area circumscribed by these roads is itself depicted as a 200 - 500 acre-forested block on the map).

Cockaponset State Forest is comprised of two parcels -- both located within the Study Area and within the approximately 3,000-acre block. Value is placed on any forest resource for its productivity in terms of timber and forest-related products. A forest's

² *Conservation and Development Policies Plan for Connecticut: 1998-2003*, State of Connecticut Office of Policy and Management, May 1998.

³ *"The Forests of Connecticut"*, Eric Wharton, et. al., USDA Resource Bulletin NE-160; April 2004.

⁴ See DEP *GIS Data Catalog* regarding LULC LANDSAT Imagery, July, 1996, for more details.

suitability for management is tied to its physical characteristics such as slope, ledge, and wetlands, so not all forests can be productive for timbering. The 140-acre DEP forest off Brooks Road experienced a "regeneration harvest" about 20 years ago to promote growth of oak but there is currently no management plan due to its rugged terrain and predominance of mountain laurel – a hamper to management regeneration efforts. The 40-acre DEP forest off Aircraft Road was recently scheduled for a managed burning to control invasive multi-flora rose.⁵

The unfragmented forest block extends beyond the Study Area and includes the two "NU-Maromas" areas (DEP Permit Required Hunting Areas owned by Northeast Utilities). The northern one lies to the south side of River Road and the southern one is located off Aircraft Road and Freeman Road. See **Appendix J** for the maps of these areas.)

Appendix K, "Undeveloped Core in Central Connecticut", is a remote sensing image of the State's land cover/land use data with an outline highlighting the "undeveloped core" of the state. This "core" area is a portion of a larger geographic and geologic area known as the Bolton Range area and is one of the last uninterrupted stretches of regional forest, extending from the coast to beyond the CT/MA border.⁶ This corridor of uninterrupted forestland is significant for its natural condition in the greater New York-Boston Metropolitan Corridor. It is also significant in terms of regional-scale biological functions, such as bird migratory routes and wildlife movement routes. Maromas lies within the western edge of this corridor. The presence of these forested uplands draining to the Connecticut River is an important factor in efforts to maintain the water quality of the CT River – a priority in the overall conservation of the remarkable CT River Valley as recognized in several initiatives –local, regional, state, national and international (see "Connecticut River", below). In the Lower CT River it is still possible to glimpse the landscape of 100 years ago and, therefore, the forested uplands add the scenic factor to the overall preservation strategy.

See Section VI. in this report, for actions private property owners can take relative to management of their forested land, such as preparing a "Forest Stewardship Plan".

- ***Biological diversity and imperiled species***

Maromas is rich in biological diversity. Its many representative habitats support a diverse biota. Additionally, Maromas harbors many imperiled species. See **Appendix L**, "Correspondence from Dawn M. McKay, Analyst, DEP, Regarding State of Connecticut DEP Natural Diversity Data Base List of State Endangered, Threatened, or Special Concern Species for Species Identified by DEP as Within Maromas", and see **Appendix M**, for a copy of the Maromas section of the "State of Connecticut DEP Natural Heritage Program State and Federally Listed Species and Significant Natural Communities, for the

⁵ Emory Gluck, State of CT DEP Forestry Division, personal communication.

⁶ Because of the geology of the Bolton Range, much of it remains undeveloped today, stretching from Long Island Sound (in places) up through blocks of the Cockaponset State Forest, through Maromas, crossing the Connecticut River in Middletown and then going up through the Meshomoc State Forest to water company lands in Glastonbury and eastern Manchester to Bolton Notch. There it narrows up through Valley Falls and widens again at Shenipsit State Forest and into Massachusetts.

City of Middletown, CT”, dated May, 2003. The latter map identifies eight discrete spots or “blobs” where imperiled species or habitats occur in the Study Area. The entire Connecticut River and a swathe approximately 1,000 feet wide in Maromas along the River are also designated. Also see “A County Report of Connecticut’s Endangered, Threatened, and Special Concern Species: Middlesex County”, **Appendix N**, which is not specific to Maromas but gives an indication of local species. Hognosed snakes, American bald eagle and rattlesnake plantain are three notable species known to occur in Maromas.

According to Audubon CT, the Maromas area has high value for forest nesting birds. WatchList species which likely nest there would be Wood Thrush and Worm-Eating Warbler. There are likely also populations of some of the shrubland species of conservation concern, such as Blue-Winged Warbler and Prairie Warbler.⁷ The Mattebesett Audubon Society conducts spring and breeding bird count surveys of the area. See **Appendix O** for a listing by season and habitat type.

- *Important migratory bird flyway*

Given the location of Maromas along the relatively undeveloped Bolton Range Corridor, the north-south orientation of that corridor, and preponderance of oaks along the corridor (oaks are an important food source for migrating birds in the spring), lack of light pollution at night in the corridor (as many bird species migrate at night), the location of many of the most critical land bird stop-over sites on the Central Connecticut coast being located at the strategic intersection of this corridor with the coast, and the moderating effect the River has on temperatures in the valley, biologists have surmised that the Maromas area may be a prime stopover area for neotropical migrant land birds.⁸ Additional avian surveys are underway to confirm its status. (Also, see above under “Biological diversity and imperiled species”.)

- *Connecticut River and associated tidal wetlands*

The Connecticut River is designated:

- an American Heritage River
- part of the Silvio O. Conte National Fish and Wildlife Refuge
- a Wetland of International Importance under the RAMSAR Convention (area designated is called “CT River Estuary and Tidal Wetlands Complex” area which extends from the mouth of the CT River past Maromas, up to the middle of Cromwell. See **Appendix P** for a map of the designated area. For a detailed

⁷ As per Patrick Comins, Audubon CT. Mr. Comins provided the following links to some of the WatchList species that likely nest in the Maromas area:

<http://audubon2.org/webapp/watchlist/viewSpecies.jsp?id=222>

<http://audubon2.org/webapp/watchlist/viewSpecies.jsp?id=221>

<http://audubon2.org/webapp/watchlist/viewSpecies.jsp?id=55>

<http://audubon2.org/webapp/watchlist/viewSpecies.jsp?id=164>

<http://audubon2.org/webapp/watchlist/viewSpecies.jsp?id=217>

⁸ Patrick Comins, Director of Bird Conservation, Audubon Connecticut, personal communication.

map of the section of the RAMSAR Project area within Maromas (Map#6), see **Appendix Q**. The State-owned properties are well-depicted in this map.)

The Lower Connecticut River Valley, which is tied into the discussion below, is part of several national preservation initiatives, most notably, the Nature Conservancy's "Tidelands of the Connecticut River Program".

The Connecticut River is proximal to the Study Area in two spots separated by a thin strip of land zoned "Riverfront Recreation" -- in the northwestern corner of Maromas along the northern portion of River Road and along the southeastern corner of Maromas along the southern portion of River Road, Scovill Road and Ryefield Road.

The presence of the River is evident in the moderation of climate and the occurrence of animals that utilize the River as a migratory route and the associated uplands for refueling or utilize the River as a food source and the uplands for their undisturbed environment requirements. Many of the locations identified in the "State of Connecticut DEP Natural Heritage Program State and Federally Listed Species and Significant Natural Communities, for the City of Middletown, CT", dated May, 2003 are located in the Connecticut River or its associated wetland areas. The River's open space (in the public trust and not buildable), access along its shoreline, and its scenic views enrich the uplands. One might think that Maromas' lofty topography would offer stunning river views and it does but in few spots; however, in many instances, the trees or surrounding rugged terrain obscure potential views. The River is the receiving body for the overland runoff and streamflow from the upland areas.

The above factors underscore the fact that preserving and protecting the Connecticut River is part of preserving and protecting the uplands and vice versa.

- *Water resources (including wetlands)*

Maromas is well endowed with water bodies, rivers, streams and wetlands. For location of these resources, see map in **Appendix B**, "Maromas: Water Resources, Local and Subregional Drainage Basins, Committed Open Space, and Trails", prepared by Midstate Regional Planning Agency; see below, under "Vernal Pools"; see **Appendix R**, "City of Middletown, CT Inland Wetlands Map"; and see "Watersheds", in text below, in Section III. The document, *Comprehensive Drainage Study Atlas*, available in the Middletown Planning Department, contains maps depicting official wetland areas denoted by drainage basin which is useful to determine hydrology of an area of interest. (See **Appendix OO**, for one example of these maps.)

The water quality in Maromas is high. The only watercourse in Maromas, besides the Connecticut River, that did not meet the Water Quality Standards as set by DEP in 2002, was the portion of Sumner Brook in Maromas. (Sumner Brook did not meet the grade from its mouth to the confluence with Long Hill Brook, due to "indicator bacteria".)

- *Vernal pools*

The “*Spring 2000 Vernal Pool Inventory*”, (see **Appendix S**) completed by the Middlesex County Soil and Water Conservation District (MCSWCD), and funded by Rockfall Foundation, reveals the occurrence of a remarkable number of vernal pools in Maromas.⁹ See **Appendix T** for the report’s map, “*Verified Vernal Pools and Potential Vernal Pools of Middletown, CT*” (copy of the Maromas section of original map only). As per the report, “*Over half of Middletown’s 71 functional vernal pools are clustered in the eastern Highlands of Middletown (aka Maromas) an area of minimal suburban development.*” By inspection, a total of 62 vernal pools in the residentially-zoned land in Maromas are delineated on the MCSWCD map, roughly half of which were indicated in the report as field-verified, and half were indicated as potentially true vernal pools.

A particularly dense concentration of pools is located in the area to the south of Hubbard Pond and east of the NU Transmission R.O.W. This area has high biological value for breeding amphibians and should be prioritized for preservation/protection. As per the MCSWCD report, “*Breeding site fidelity and large upland habitat ranges make obligate vernal pool amphibians especially susceptible to disturbances to the surrounding landscape ... A complete inventory of a town’s vernal pools encourages protection of these critical habitats because it makes land planners and developers aware of the pools’ existence and their relationship to other pools before site plans are developed, even if the pools are dry*” (and, therefore, less recognizable as a vernal pool).

The NU Facilities Report (“*Application to the Connecticut Siting Council for a Certificate of Environmental Compatibility and Public Need for a 345-kV Electric Transmission Line Facility and Associated Facilities Between Scovill Rock Switching Station in Middletown and Norwalk Substation in Norwalk: Joint Filing by the Connecticut Light and Power Company and the United Illuminating Company*”), October 9, 2003, (available in City Hall and in AMP file), includes discussion of vernal pools located within the R.O.W. Study Area that runs through southern Maromas. Also, see Section III., herein, under “*NU Transmission Line*”.

- *Riparian areas*

The riparian area is that area of land located immediately adjacent to streams, lakes, or other surface waters. “*Some would describe it as the floodplain. The boundary of the riparian area and the adjoining uplands is gradual and not always well defined. However, riparian areas differ from the uplands because of their high levels of soil moisture, frequent flooding, and unique assemblage of plant and animal communities. Through the interaction of their soils, hydrology, and biotic communities, riparian forests maintain many important physical, biological, and ecological functions and important social benefits.*”

⁹ The study used DEP definition of vernal pools. As per the report: “*true vernal pools, as defined in accordance with DEP draft guidelines, CT DEP, ‘Draft Guidance to Connecticut’s Municipal Inland Wetlands and Watercourses Agencies: Vernal Pool Definition/Indicators; February 15, 2000’*”. See **Appendix S**, in Strategic Plan for definition.

Riparian areas in the eastern United States are among the most productive biological systems in the world (Dickson and Warren 1994). Rich soils, abundant moisture, and regular inputs of nutrients and biological materials result in a complex natural community. The loss of native riparian vegetation can result in a loss of habitat for many species of animals, both on land and in the stream itself."¹⁰ In sum, these areas are important for filtration and infiltration, streambank stabilization, downstream flood attenuation, and wildlife habitat and habitat corridors.

The riparian area, per se, has not been mapped, but see above, under "Water Resources", for associated water resource map information.

- *Fishery*

See **Appendix U** for DEP data on anadromous and stocked fishery.

- *Ridgetops and steep slopes*

Maromas is characterized by its rugged terrain which is largely responsible for its undeveloped state as the topography poses significant challenges to development. As depicted in **Appendix V**, "Maromas: Steep Slope Map", scale 1:1,000; dated August 5, 2004, as completed by Midstate Regional Planning Agency for this report, the majority of Maromas has slopes over 15% grade. (NOTE: A full-size copy of the map accompanies the report.) **Appendix W**, "Ridgeline and Summit Protection Policy Areas - Hebron Region, Connecticut; State of Connecticut DEP", depicts areas evaluated for protection under the State's "Ridgeline Protection Policy". A copy of the Policy is included as **Appendix X**. The map depicts "slopes greater than 20%" and "locally high areas" which are defined, as per the map, as "hilltops and summits located within 1500 feet of steep slopes." Also, see **Appendix D** for a USGS topographical map of the area.

A comparison of the three maps referenced above indicates wide differences. Mapping of identified ridgelines and hilltops needs to be completed for Maromas on a local scale.

Protection of ridgetops is important to maintain scenic qualities and to forestall the potential for erosion upon disturbance. Some ridgetops support unique habitats, such as habitats called "balds". Maromas' dramatic, scenic, rugged topography is a disincentive to residential development. There may be interest in development for resource extraction.

- *Geological features*

Maromas is rich in geological history and resources. (Geological data was not included in this study.) There may be interest in Maromas in development for resource

¹⁰ Entire passage taken from "Understanding the Science Behind Riparian Forest Buffers: Effects on Plant and Animal Communities", Julia C. Klapproth, Faculty Assistant, Natural Resources, Maryland Cooperative Extension; James E. Johnson, Extension Forestry Specialist, College of Natural Resources, Virginia Tech <http://www.ext.vt.edu/pubs/forestry/420-152/420-152.html#L1>

extraction.

- *Dark night sky*

Maromas' relative darkness due to undeveloped condition is notable. Maromas is located on the western edge of a developed corridor that runs from south of the New York Metropolitan area, through coastal Fairfield County and then northward on either side of the I-91 corridor. This pattern of dense development can be discerned in two remote sensing images included as **Appendix Y**, "Land Use of Maromas Area" and, a smaller-scale image, "Maromas Area, Middleton, CT", and accompanying document therein defining land uses, "DEP-Land Use Categories".

Maromas is situated on the western edge of an area The Nature Conservancy has termed and widely publicized as, the "Last Green Valley", which refers to the green, relatively undeveloped area of land that exists situated between the densely developed corridor referenced before and the Greater Boston Metropolitan corridor to the east. In a nighttime satellite image of the United States and Eastern Canada, included as **Appendix Z**, the Last Green Valley is indicated. In another satellite image in **Appendix Z**, "Maromas Area in Nighttime Satellite Image of Greater New York Metropolitan Area", the contrast between Maromas and the rest of Middletown is quite apparent.

The dark night sky in Maromas is simply a factor of its undeveloped state. The darkness of the area at night contributes to the functioning of the natural systems there in terms of lesser disturbance from human activity and fewer possible adverse effects of artificial light on natural circadian rhythms, breeding, and other biotic factors.

There's been a significant step forward in reducing light pollution in Connecticut with the passage of the Light Pollution Controls amendment to the State Building Code which goes into effect on September 1, 2004, as a Connecticut amendment to the 2003 International Energy Conservation Code. The Light Pollution Controls amendment requires Full Cutoff luminaries for all exterior lighting for new buildings and renovations, excluding one and two family dwellings.

B. Cultural/Regulatory Natural Resource Elements

The following cultural/regulatory natural resource elements are separated from the naturally-occurring resources, above, to distinguish them as man-made in that they pertain to human-imposed uses, values, constructs, or ownership patterns upon the landscape.

- *Existing base of committed open space*

"Committed open space" (COS) is defined, for the purposes of this document, as the City uses the term, to mean land reserved in perpetuity for an open space use be that use conservation or active recreation or source protection, or a park, etc.. The deed of each property would need to be analyzed to determine use restrictions or provision of adequate language for preservation in perpetuity.

COS is depicted on several maps in this report from various sources and accuracy and definition of COS vary from map to map and therefore should be cross-checked for a specific application of the information.

Committed open space in Maromas includes:

- **State of Connecticut land:**
 - Cockaponset Forest (180 acres; in two sections)
 - CT Valley Railroad State Park Trail (which extends from the Pratt & Whitney site south to Old Saybrook), and abuts the Study Area in southeastern Maromas. CONN DOT owns the railroad extending north of the Park.)
 - Dart Island State Park Scenic Reserve (not in the Study Area but in Maromas)
 - CVH Watershed land (Note: not preserved in perpetuity as open space)
 - Hunting Areas leased to the State: Pequesett Meadows Marsh Wildlife Area, in Portland, and two NU-Maromas Permit Required Hunting Areas, (see **Appendix J** for maps of latter)
- **City of Middletown land:**
 - John Roth Wellfield
 - Long Lane property (295 acres)
 - Town Farms Park, River Road (6 acres)
- **The Nature Conservancy land:**
 - Spiderweed Preserve (150 acres)
- **Intermittent segments of the Mattebessett Trail** (portions are Town-owned or easements on privately-owned portions)

The following areas are not physically located in Maromas but are visually connected:

- **State of Connecticut's** Hurd State Park, George D. Seymour State Park Scenic Reserve, visually connected to Maromas across the Connecticut River in the Towns of East Hampton and East Haddam, respectively.
- **Middlesex Land Trust's** three preserves in the Pecauset Meadows, visibly connected to Maromas across the River in the Town of Portland.
- **Existing public water supply watershed areas**

Existing public water supply watershed areas in Maromas include the watershed for the City well and the watershed for the water supply for the State of Connecticut's Connecticut Valley Hospital (CVH) and associated users. For the DEP Source Protection Area for the City well, see the map in **Appendix AA**, "DEP Source Water Assessment Program - John S. Roth Wellfield - Middletown and Portland, CT".

Water supply plans are mandated to be completed by water utilities for State of Connecticut Department of Public Health review and approval every five years. The following information was determined from a review of the "*Water Supply Plan – Connecticut Valley Health; Department of Mental Health and Addiction Services, State of CT - Middletown, CT Plan*"; revision date: August 10, 2001, (available at Midstate

Regional Planning Agency). Run by the Department of Mental Health and Addiction Services, the water supply facility serves the following state institutions: CVH, River Valley Services, CT Juvenile Training School, Riverview Hospital for Children; and two City institutions: Eddy Home and Shepard Home. The *Plan* indicated the water supply is needed indefinitely to serve the needs of the above users and adequacy is not deemed to be an issue.

Note: the following figures from the *Plan* predate the State's transfer of 295 acres to the City: "CVH is situated on 1,020 acres owned by the State. The watershed itself comprises 665.6 acres, 73%, or 600 acres, of which is owned by the State (CVH 56% and DEP State Forests 17%). The balance, 25%, is owned by private property owners (35% of which is owned by CL&P) and public R.O.W., 2%." For a map of the watershed, see **Appendix BB**, "Connecticut Valley Hospital – Reservoir Watershed", dated Dec. 1995. (Note that a label for Reservoir #2 was apparently inadvertently omitted from this map.)

Of the six reservoirs on the public water supply watershed, one, Reservoir #1, is inactive but can be retrofitted to meet a future demand. Water is drawn from Reservoir #4 and treated at a filtration plant nearby off Cedar Lane. As Reservoir #6 is situated over a drainage divide, a pumping station must pump the flow from it into Reservoir #5; water flows hence to Reservoir #3 and hence to Reservoir #4.

The following clarifies the misnaming that appears on USGS maps. As it is useful when comparing various maps of the watersheds or other maps of the Maromas area, it is included here. The USGS Middle Haddam, CT quadrangle indicates the six reservoirs as follows:

- Reservoir #1 as: *unmapped, unnamed*
- Reservoir #2 as: *Asylum Reservoir #3*
- Reservoir #3 and Reservoir #4 as: *Asylum Reservoir #1*
- Reservoir #5 as: *Asylum Reservoir #2*
- Reservoir #6 as: *Hubbard Pond*

For plans and regulatory aspects pertaining to water supply and watershed lands, see below, in Section III, under "Advisory Plans".

- ***Mattebesett Trail and other trails***

See **Appendix C**, "Composite Factor Map for Preservation/Protection of Residentially-Zoned Land in Maromas", for an overall, approximate depiction of two trail systems in Study Area (and beyond): Mattebesett Trail, part of the Blue-Blazed Trail System, and the trail in the TNC Spiderweed Preserve.

The Blue-Blazed Trail, "Mattebesett Trail", lies, for much of its length, (10.4 miles of main trail and 4.9 miles of loop trail), in Maromas, on privately-owned and publicly-owned land. See **Appendix DD**, "Mattebesett Trail – Maromas Section – Middletown, CT", as prepared by Connecticut Forest and Park Association (CFPA), dated 8/2004, which is a GIS map depicting up-to-date trail information with recently acquired trail segments. Also see "Comments from the Connecticut Forest and Park Association", October 16, 2000, **Appendix DD**. The Mattebesett Trail is maintained by

the Connecticut Forest & Park Association. The trail is a foot trail with the width of trail usage and uses permitted on the trail at the discretion of the property owner (i.e., horseback riding, ATV use.) Recently, intensive trail use by ATVs has raised concerns about erosion and other compatibility issues. See **Appendix DD** for excerpted pages from the CFPA Blue-Blazed Trail Guide Book describing the various trail sections and loop trails in Maromas. ("Mattebesett" was the Indian word for the Middletown area.)

The Metacomet-Monadnock-Mattabesett trail system, or "Triple M Trail", is one of New England's premier scenic and recreational resources. Traversing more than 200 miles of ridge lines, forests, and open spaces, the three trails pass through and link 37 communities in Connecticut and Massachusetts to a unique but vanishing landscape. In December 2002, the President signed Public Law 107-338, directing the National Park Service to study the Metacomet-Monadnock-Mattabesett trail system in Connecticut and Massachusetts for possible inclusion in the National Trails System through designation as a National Scenic Trail. The principal rationale for the Study, as expressed in testimony before Congress, is that without a concerted effort to protect this trail system, it will cease to exist as a recreational resource for future generations. The trail system is proposed to be extended to stretch from the Connecticut Coast to the Canadian border, see **Appendix DD**, for data on the proposal and a map of the existing Metacomet-Monadnock-Mattabesett Trail Corridor in Connecticut and Massachusetts.

The Middletown Conservation Commission will soon publish the "*Middletown Trail Guide*". (The guide may provide information regarding possible trail connections.)

- *Land in agricultural use*

Land in agricultural use includes cropland, hayfields, pastureland, nursery stock, etc. See **Appendix CC**, "Maromas: Agricultural Related Lands", a map of agricultural uses delineated by land cover types completed by Connecticut River Conservation District for the consultant, and **Appendix CC**, DEP "GIS Data Guide Lookup Table - 1995 Land Use Categories" to use as a key for definitions of terms in the legend of the above map. The map indicates a significant amount of land in hay production in Maromas.

The City, which maintains that there are "*only two farms in Maromas*", needs to revise its view of agricultural land use to embrace all agricultural uses consonant with its stated farmland preservation policy. Conservation Commission member David O'Brien has completed an inventory of all farms in the City greater than 5 acres in size, as yet unpublished.

In addition to production value and merits of locally-grown produce, agricultural land possesses value as open space, as a scenic amenity, and it holds potential value for agri-tourism. Fragmentation of existing hayfields disrupts potential grassland bird habitat and hunting areas for certain wildlife species.

Farmland is a threatened commodity. In the following, taken from recent correspondence, Patty Prendergast, Connecticut Forest and Park Association, summarizes

the shift in farming in Connecticut and the need to revise former ways of planning and regulating agricultural uses, which is applicable to Middletown:

"In order to survive in New England (and in Connecticut particularly) agriculture is changing the way it does business. Farmers are moving away from the traditional dairy herds and crops, and products processed and sold offsite; and moving towards smaller boutique crops/market gardening, direct to the consumer, value added products and on-site processing. This will present some challenges to planners and P&Z commissions as farmers try to diversify their businesses. My town is currently toying with the idea of agriculturally based entrepreneurial zones to encourage small farming business - perhaps which combine retail with crops, or allow ice cream business with a small dairy for example. Just in the idea stage, but our economic development people hadn't even considered that as a possibility. We don't have the land for large scale, traditional farming anymore, but if we can ever figure it out, this zoning could help our touristy town retain the open spaces and scenic vistas while encouraging another form of economic development."

- *Archeological resources*

Maromas' location on the Connecticut River signifies a prime spot for archeological resources. Data is not readily available, however, the State Archeologist, Nick Bellantoni, can furnish survey data.

- *Historic resources*

Maromas is rich in history, as described in the document, "*Historical Sketch of Maromas Section of the City, City of Middletown, Middlesex County, Connecticut*"; 1937; by Jessie M. Alsop, (available at Midstate RPA and AMP files.) **Appendix EE**, herein, contains two maps which depict locations of two sawmills and a gristmill as mapped in 1792, and locations of quarries and shipping docks, as mapped in 1874.

There are many historic homes in Maromas. The City of Middletown Design Review and Preservation Board has compiled a "Listing of Historic Homes by Street", (see City website). A listing of Maromas street names is included as **Appendix FF**, which can be used to cross-reference the City's list of historic homes -- many of which are located in Maromas.

Historic homes are enhanced by scenic settings and, in turn, scenic settings are enhanced by historic homes. The Town historian can be consulted regarding occurrence of historic homes in a pattern that may have possibilities for a historic district concept.

- *Natural scenic resources*

Maromas is known for its scenic beauty. The following natural scenic resource elements can be visually-accessed from the vantage point of the public Right of Way; i.e., from roads, trails, and from the Connecticut River:

Scenic Views (includes panoramic views)
Scenic Areas
Scenic Roads (includes unpaved, graveled town roads: Cedar Lane, a portion of
Training Hill Road, Bear Hill Road, and Brooks Road)
Mature Trees
Stone walls
Unique geologic features
Ridgelines
Pastoral landscapes (land in agricultural use—hayfields, cropland, pastureland)
Water bodies (streams, rivers, ponds, lakes, reservoirs)
Connecticut River shoreline

The above resources have not been identified and mapped. Once identified, an overall scenic resource protection plan can be assessed. (See *Draft Guilford Natural Resources Inventory*, Guilford Conservation Commission, 2004, co-authored by the consultant, for treatment of scenic resource definition, identification and mapping, and also see, **Appendix UU**, “Scenic Resources Protection Methodologies”, herein, by the consultant.)

III. SPECIFIC LAND USE AND POLICY ISSUE AREAS CONSIDERED

The status of land in the Study Area, both physical conditions and regulatory constructs, is presented below. This background information is useful in regards to:

- overall preservation planning
- analysis of the potential for development
- analysis of a specific parcel in response to a development proposal
- or conservation area zone planning

The following issues of concern relative to Maromas were considered in the preparation of this report by researching the documents listed below and through interviews with professionals in the field. Discussion of some of these areas can be found in the document "Phase I: Resource Compilation and Resource Assessment", completed by the consultant, December 16, 2003, (see **Appendix A**), as well. The analysis of these areas juxtaposed with the natural resource base is presented in Section V.

Issue areas are addressed below, under the following subheadings:

- **Land Use Regulations**
- **Public Act 490 Preferential Tax Assessment Program**
- **Sewering**
- **Advisory Plans: State, City, CVH**
- **Watersheds (or Drainage Basins)**
- **Northeast Utility 345 kV Transmission Line Facility**
- **Long Lane Property**
- **Physical Constraints to Development**

Land Use Regulations

Matters pertaining to land use regulations are addressed below under these topic areas:

- Residential Zoning Districts and Permitted Uses
- Riverfront Recreation Zone
- Subdivision Regulations Relative to Open Space
- Protection of Watersheds
- Aquifer Protection Area
- Inland Wetlands and Watercourses Regulations

Residential Zoning Districts and Permitted Uses

The Study Area consists of the residentially-zoned land in Maromas. See **Appendix C**, "Composite Factor Map for Preservation/Protection of Residentially-Zoned Land in Maromas", completed by consultant, for the delineation of the Study Area, and

see **Appendix GG**, "Zoning Map - City of Middletown; Department of Planning, Conservation and Development", and "Zoning District Map of Residential Zones in Maromas" (from City website), for depiction of all zone districts in Maromas. (The latter is a handy reference regarding determining zoning by parcel for development proposals.)

The residential zone districts (with requisite minimum lot size and zone class title indicated as per City of Middletown Zoning Code) and approximate percentage comprising the Study Area follow. Single-family residential uses and multi-family residential are permitted in these zones, as applicable.

<u>Residential Zone District</u>	<u>Min. Lot Size</u>	<u>% of Study Area</u>
M Zone - "Multi-Family Dwelling Units" (6-10 units/acre, based on bedroom count)	15,000 s.f. (roughly 1/3 ac.)	1%
MX Zone - "Mixed Use Zone" (residential: 6-10 units/acre, based on bedroom count; and miscellaneous uses)	10,000 s.f. (roughly 1/4 ac.)	1%
R-15	15,000 s.f. (roughly 1/3 ac.)	1%
R-30	30,000 s.f. (roughly 2/3 ac.)	9%
R-45	45,000 s.f. (roughly 1 ac.)	34%
R-60	60,000 s.f. (roughly 1 1/2 ac.)	54%

It should be noted that the Special Exception Uses that follow below are also permitted in Maromas' residential zones, as so indicated. This is important in that land that poses insurmountable development constraints for use as conventional residential development may be developed for these other uses and such development may pose different environmental risks than residential development relative to the health of committed open space areas and other natural lands. For instance, a shallow to bedrock area can be quarried or a large tract with many steep slopes and wetlands which may not be profitable to develop as a residential subdivision, may be profitable to develop as elderly housing where the "good land" can support dense development at 11 units/acre:

- Natural Resource Extraction (R-15, R-30, R-45, R-60)
- Educational Institutions (R-15, R-30, R-45, R-60)
- Recreational Uses, Golf Courses, Community Buildings, Playfields (R-15, R-30, R-45, R-60)
- Permanent Year-Round Farm Markets (R-30, R-45, R-60)
- Churches and other places of worship (MX, R-30, R-45, R-60)
- Assisted Elderly Housing (R-15; 11 units/acre)
- Active Adult Facilities (R-15, R-30; maximum density, 4 units/acre; 10 minimum lot requirement; adopted June, 2004)
- "Open Space Subdivision Development (Cluster Development)" (R-15, R-30, R-45, R-60; 10 acre minimum tract size) (See below, under "Subdivision Regulations".)
- "Large Lot Environmentally Sensitive Subdivision Development" (R-45, R-60; 20 units is maximum lot count; 10 acre minimum tract size) (See below, under "Subdivision Regulations Relative to Open Space".)

Riverfront Recreation Zone

Although residential uses are not permitted in this zone, a discussion of this zone is included here as it abuts the R-30 and R-60 zones in some areas in Maromas and the link to the river is key regarding open space and public access.

It should be noted that the permitted lot coverage is 30%, so that this zone should not be envisioned as a "preservation zone". Permitted uses are limited to water oriented uses, recreational uses and uses permitted in the flood zone (which excludes any residential use). These uses are permitted by Special Exception in the RF zone: Public Utilities, Recreational Uses, Golf Courses, Community Buildings, Playfields, Restaurants, Adaptive Historic Preservation, and Marinas and boatyards. In fact, under the Special Exception Uses provision of the Zoning Code, (page 116), "...if a proposed facility for the storage transport of goods or people is located adjacent to an industrial zone (which in Maromas is the case) it shall be treated as a permitted use". This is tantamount to a zone change.

Subdivision Regulations Relative to Open Space

There are three alternative kinds of subdivision development provided for in the Middletown's land use regulations that could be applied to the residential area of Maromas, each of which entail a requisite open space component. See **Appendix HH** for copies of pertinent regulations mentioned in this section.

For conventional subdivision development proposals, open space setasides of 10% of the subject property is required, (*City of Middletown, CT Subdivision Regulations*, Section 5.15). Criteria for this open space designation within a proposed subdivision development are stipulated in Section 5.17, "Open Spaces". (See **Appendix HH**, for entire provision.)

This is significant in that it officially acknowledges the importance of these discrete types of natural resource areas to the City. This documentation can be useful to the Conservation Commission and other parties interested in securing desired preservation objectives when there is a development application in Maromas. Features referenced in Section 5.17 (below) of particular interest to this report (as addressed further in other places in the report) are underlined below:

"Natural features, including but not limited to, viewsheds along roads, rivers, streams, wetlands, flood plains, lakes, aquifers, steep slopes, forested areas and ridgelines should be conserved and enhanced to promote the public health, safety and welfare and provide visual barriers between areas within the development and between adjacent developments", also, "preservation of agricultural lands", and sites should be retained; and Natural Drainage ways and natural flood water retention areas should be retained, and the quality of water bodies should be protected".

There is a provision for "Cluster, or Open Space Subdivision Development", by Special Exception approval as per *Zoning Regulations*, Section 44.08.35, and *Subdivision Regulations*, Section 5.15 – Cluster Design. The requisite open space component is 33% with one additional lot allowed for each additional 5 % of open space provided above and beyond the required 33%. The zoning provision provides for the following natural resource protections in development design:

"Providing for protection of water courses but designed as an integral part of the development;
Providing for effective buffering; but not obstructing scenic views;
Providing for the maintenance of the visual integrity of hilltops and ridgelines by siting development so that building silhouettes will below the ridgeline or hilltop or if the area is heavily wooded, the building silhouette will be at least 10 feet lower than the average canopy height of trees on the ridge or hilltop,..."

As stated above, this is significant in that it officially acknowledges the importance of these discrete types of natural resource areas to the City. This documentation can be useful to the Conservation Commission and other parties interested in securing desired preservation objectives when there is a development application in Maromas.

There is a provision for "Large Lot Environmentally Sensitive Subdivision Development" by Special Exception approval as per Zoning Regulations, Section 44.08.35 and Subdivision Regulations, Section 5.15. As per the regulation, (see **Appendix HH**), *"the provision is designed to provide for greater open space preservation and the preservation and/or conservation and enhancement of the sites existing natural features and resources."* The requisite open space component is 15% of the tract. All proposed roads in the development are private.

Protection of Watersheds

Zoning Code, Section 42, "Protection of Watersheds", provides standards for land within the City's public water supply watersheds including aquifer areas. The referenced aquifer protection areas are delineated on the Zoning map as "Groundwater Aquifers" (Note: these areas are distinct from those areas delineated by DEP Source Protection Program.) The regulation does not pertain to the State of CT's public water supply watershed however. Further investigation is required to determine whether or not these "aquifer areas" are planned for potential future water supply. If so, land use in their vicinity is an issue.

Aquifer Protection Area

Pursuant to the passage of the State of Connecticut DEP Aquifer Protection Area legislation, January, 2004, the City of Middletown administers a new Aquifer Protection Area for the John S. Roth Wellfield. This area, as delineated by the DEP Source Water Assessment Program, located in the vicinity of Silver Street and River Road in Maromas, is comprised of land zoned R-45 with small areas zoned R-30, MX, and M. See

Appendix AA, "DEP Source Water Assessment Program - John S. Roth Wellfield – Middletown and Portland, CT".

Inland Wetlands and Watercourses Regulations

The City Wetlands Map can be accessed on the City of Middletown website. See **Appendix R** for a sample of the City's website map of the Maromas area; however, the "Official Wetlands Map" (in City Hall) provides greater detail. Wetlands are depicted on the map in **Appendix B**, "Maromas: Water Resources, Local and Subregional Drainage Basins, Committed Open Space, and Trails", as well.

There is a notable preponderance of vernal pools in Maromas, (see **Appendices S and T**, regarding the "Spring 2000 Vernal Pool Inventory - Middletown, CT", completed by the Middlesex County Soil & Water Conservation District), which deserves special attention from the IWWC with regard to conservation efforts for land use proposals if applicable. Vernal pools are regulated as watercourses under the Wetland Act. (For more on vernal pools, see above, under Section II., "Assets of the Study Area" - Vernal pools.)

The "*Inland Wetlands and Watercourses Regulations of the City of Middletown*" defines the "Regulated area" as "*the area where a regulated activity occurs, whether within a wetlands or not and includes all wetlands and watercourses as defined herein and all areas within fifty (50') feet setback.*" To address the important function of riparian areas relative to wetland water quality, the regulated area setback should be greater, as it is in many municipalities in Connecticut.

Public Act 490 Preferential Tax Assessment Program

Many parcels in the Study Area are classified under the City's Public Act 490 Preferential Tax Assessment Program as forestland, farmland, or open space land. See **Appendix II**, for the City Assessor's Department listing of parcels ten acres or greater classified under this program. Those parcels located in Maromas (as surmised by address) were marked on the City's listing by the consultant. (See **Appendix FF** for a listing of Maromas street names.) The Assessor's P.A. 490 list gives some sense of the large tracts of undeveloped land in the Study Area although many large landowners may not have applied for this classification.

As indicated in the list, a few parcels are land holding parcels by development concerns. Some landowners actively use their land for farming or forestry activities and others take advantage of the tax savings while holding onto the property in a natural state. The penalties for breaking the Program's 10-year agreement are not a disincentive to developing the land given the cost of raw land today, and, conversely, the tax savings are significant and can allow landowners to hold on to their land.

Sewering

The recently approved Sewer Service Area (SSA) in Maromas is restricted to industrial uses in the Industrial Zone District (currently this means the NRG plant ((aka "the Middletown Station")), the Pratt & Whitney plant, "and the pipe is sized in anticipation of future growth") and service to the residential area on Bartholomew Road. However, as per a revision to the City Code, Section 9-1.1. *Modification of the Approved Connecticut River Interceptor Sewer Service Area. [Amended 11-13-2002]*, an amendment to the SSA by approval of the Water Pollution Control Authority for an area outside the I-3 zone simply requires previous Special Exception approval from the Planning and Zoning Commission (see **Appendix JJ** for Ordinance.)

This new sewer line is an interceptor, defined as a transmission line which is not accessed along its route."

A copy of the "Facilities Plan – Proposed Sanitary Sewer Service Area (Consistency with State C & D Mapping)", dated 12/31/2003, which was granted Section 8-24 approval by PZC on 6/16/04, is included as **Appendix KK**. It depicts the changes to the State's *Conservation & Development: Policies Plan for Connecticut - 1998-2003, "changes as approved April 21, 2003"*, (as per the map). The City petitioned the State of Connecticut Office of Policy and Management (OPM) to modify the State Plan to allow for the proposed SSA. The changes to the *Plan* were approved by the Legislative Committee on State Plan of Planning and Development on April 21, 2003. Four changes are depicted: three changes from "Rural" designation to "Growth" designation and one change from "Growth" designation to "Conservation".

The map depicts "City Active/Passive Recreation Area" land as eligible for sewer access, reflecting the agreement that this land would be sewered if the City developed it for recreation but not sewered if the City opted to keep it for "preservation".

In the residentially-zoned area, the map depicts approved sewer access extending in a swathe down Bartholomew and Saybrook Roads to just north of Airline Road. Most of the residentially-zoned area in Maromas is unsewered. (The new Sewer Service Area is also depicted on **Appendix C**, "Composite Factor Map for Preservation/Protection of Residentially-Zoned Land in Maromas".) And, although not depicted on the SSA map, the revised SSA also includes an area around and to the northeast of CVH as a result of CVH closing down its sewage treatment plant and hooking up to the City's plant, according to Bill Warner, Director of Planning, City of Middletown. See **Appendix JJ** for the limits of the exiting City sewer in April, 2002, map taken from the Buckhurst Draft POCD. This is pertinent to our discussion of denser development proposals in the residential zones as hook-ups may be entertained in the future.

However, AMP should keep tabs on approvals for sewer extensions that may encroach from presently sewered residential areas; e.g., the PZC approved a sewer extension for Randolph Road on May 12, 2004 for an area with high septic system

¹¹ Definition as per *Draft CRISP - Middletown, Connecticut*, January 2001, Department of Economic and Community Development, by Frederic Harris, Inc..

failures. Recently the developer of a new cluster development on Brooks Road in the R-30 Zone extended the sewer from Saybrook Road to the site. AMP may want to research the Health Department records for septic failures in Maromas in anticipation of possible extensions.

Advisory Plans: State, City, and CVH

The following eight (8) advisory plans have relevance with regard to any preservation protection plan. Each was reviewed for information relevant to this report. Comments are included as pertinent to the subject.

- *The Plan of Conservation & Development - Middletown, Connecticut: "Existing & Proposed Open Space"*, (undated; aka the **Open Space Plan Map**): This plan map, commonly referred to as the "Conservation Commission's 1993 Open Space Plan", is still in effect until an updated Open Space Plan is adopted. The map, see **Appendix LL**, a half-copied and half-hand traced version of the original which is glued to a board in the Planning Office, depicts "Committed Open Space" and "Proposed Open Space" within the Study Area. The proposed open space preservation priority areas depicted, the letter code and highlights of each area, as per the Open Space chapter (Chapter 11) of the *Plan of Development*, follow. References to ranking of wetlands below refers to a wetlands study done for the City¹²:

- R - "Laurel" Wetland System* – uncommon wetland that "developed over metamorphic rock", bog with rare species, "high aesthetic value"
- Q - Spiderweed-CT Valley Hospital Corridor* -- chosen for its diversity of habitats, watershed lands, committed open space, "high aesthetic value" and rural character.
- S - Hubbard Brook* – "high aesthetic value", high ranking wetlands system ("ranked 24th out of the top 25") and wildlife movement corridor
- T - Connecticut River Wetlands* (the majority of this area does not lie within the Study Area) -- chosen for high wetland ranking and significant bird species.

- *City of Middletown, CT Plan of Development*, adopted 1990, is still in effect.
- *(Draft) City of Middletown, CT Plan of Conservation & Development 2002*; Buckhurst, Fish & Jacquemart, Inc., April 2002. See Appendix **EEE** herein, for "Figure 9.2, 1993 Open Space Plan with Recent Acquisitions", from the *Draft POCD*, for a snapshot of conceptual preservation planning in 2002 for comparison purposes.

¹² *Wetlands Analysis & Mapping - Final Report*, Purcell Associates-some, not all wetlands, are depicted as "esa" ("environmentally sensitive areas") and profiled as to soil type, function and some wildlife data. Jim Sipperly, City Environmental Planner, indicated that only some wetlands in report had been field-checked.

- *(Draft) City of Middletown, CT Draft Plan of Conservation & Development*, (partial), dated July 2004 (finished portion of Draft on City website; scheduled for Fall 2004 hearing).
- *Conservation and Development Plan – State of Connecticut, 1998-2003, as amended, (State Plan)*, dated May, 1998. In the *State Plan*, the Maromas Study Area was designated predominantly as a “Rural Area” with a small area in the central/eastern part of the Study Area designated as a “Growth Area”. The City petitioned OPM to modify the *State Plan* to allow a new Sewer Service Area (SSA). On April 21, 2003, the amendment to the *State Plan* to accommodate the SSA was approved by vote of the Legislative Committee on State Plan of P&D. The final SSA as adopted by the Common Council, was approved by PZC on June 16, 2004. Three areas were amended from “Rural” to “Growth” to reflect areas awarded sewer service. The “Growth” area referenced above was changed to “Conservation”, presumably the result of a trade for the new “Growth” designation for the southern portion of the Pratt & Whitney land. See **Appendix JJ** for the letter regarding legislative action and see **Appendix KK** for the approved map of the amended areas.
- *(Recommended) Draft Conservation and Development Plan – State of Connecticut, 2004-2009*; (may be adopted in next Legislative session. The changes to the *State Plan* relative to the Sewer Service Area will be reflected in the new *Plan’s* “Locational Guide Map”).
- *Water Supply Plan – Connecticut Valley Health; Department of Mental Health and Addiction Services, State of CT - Middletown, CT,(Plan)*; revision date: August 10, 2001. (The physical data from the *Plan* relating to the public water supply watershed is discussed above, under Section II., “Assets”. Regulatory/policy aspects of the *Plan* are discussed here.) In light of the fact that much of the private land on the watershed is undeveloped, residentially-zoned land, the *Plan* calls for the City to adopt a “watershed overlay zone” which would provide for an increased minimum lot size to 2 acres, special erosion and sedimentation controls, increased wetland and watercourse setbacks, requisite septic system maintenance, special stormwater management, and underground storage tanks, as per the *Plan*. For a graphic depiction of residential zoning districts in the watershed, see **Appendix MM**, “Watershed Boundaries by Connecticut Valley Hospital - Zoning Map of Middletown, Connecticut”, taken from the *Plan* (Note: a portion of map title appears handwritten and very small). The *Plan* requested that the City include both the CVH watershed in the *POCD* as a public water supply area and the need for the public’s cooperation in source protection, as previous CVH plans had also requested. (Note that these days, some *POCDs* do not include these areas for security reasons.)

Consideration was being given to opening up the reservoirs to fishing although the *Plan* was written in days pre-September 11. Due to security issues then, gating of the causeway between Reservoir #3 and #4 was being considered. (Note that as of June, 2004, a field visit confirmed that it had not been done.) The transfer of approximately 300 acres from the CVH holdings to the City was not mentioned in the *Plan*. This acreage’s location relative to the watershed would require further investigation.

- *“The Future of Open Space Acquisitions and Developable Land in Middletown”*, Bill Warner, City Planning Director; as submitted to City of Middletown Planning and Zoning Commission, January, 2004, included as **Appendix NN**. See below, herein, under subsection, “Physical Constraints to Development”, and also, under Section V., for discussion of this document.

Watersheds (or Drainage Basins)

The entire Maromas area lies within the “Connecticut Main Stem Regional Basin” as all runoff drains to the Connecticut River, either overland or via Maromas’ many streams. See **Appendix C**, “Maromas: Water Resources, Local and Subregional Drainage Basins, Committed Open Space and Trails”, for delineation of Maromas subregional and local drainage basins.

Maromas contains the following local watersheds (basins), as per “City Watershed Boundary Map”, **Appendix OO**:

- Connecticut River Tributaries Basin (lies entirely within Maromas)
- Bible Rock Brook Basin
- Sumner Brook Basin (only a small portion lies within Maromas)
- Reservoir Brook Basin (lies entirely within Maromas)
- Indian Hill Brook Basin (lies entirely within Maromas)

See **Appendix PP**, for a DEP Drainage Basin map data. Watershed boundary lines differ slightly in each of the maps referenced. The DEP refers to the City’s “Bible Rock Brook Basin” as “Ponset Brook Basin”. The DEP refers to the City’s “Reservoir Brook Basin” and “Indian Hill Basin” as part of the “Connecticut River Tributaries Basin”. See above, under Section II, “Assets of the Study Area”, under Public Water Supply Land, for CVH public water supply watershed boundaries as described and demarcated by the State. These are local drainage basins.

Watershed data is useful in assessing the potential impact of a given development proposal relative to the pertinent watershed. The data is also useful for its application in various watershed planning efforts, such as:

- Maintenance of water purity within a public water supply watershed
- Protection against increased downstream flood levels, especially in those drainage basins with likely increased stormwater runoff from development
- Protection against the impact of non-point source pollution on the integrity of natural resources downstream in each watershed
- Protection of water quality in receiving waters, especially the Connecticut River
- Maintenance of popular water-based recreation areas and/or special habitats in a given drainage basin
- An organizing principle within which land use planning can occur

Northeast Utilities 345 kV Transmission Line Facility

Northeast Utilities' proposed 345 kV Transmission Line Facility - "Middletown to Norwalk Project", is located within the existing R.O.W. (with the exception of 9 acres to be purchased by NU) that runs along Middletown's southern border and crosses the Connecticut River here. The area of AMP interest is a portion of "Segment 1", which is the 2.5 mile length of R.O.W. from Scovill Rock Substation to Chestnut Junction. Only about half of this length is in Maromas. (The other area of the proposal in Middletown is to the west, not near Maromas.) See **Appendix QQ**, a map of the proposed Segment 1 area, taken from the "*Application to the Connecticut Siting Council for a Certificate of Environmental Compatibility and Public Need for a 345-kV Electric Transmission Line Facility and Associated Facilities Between Scovill Rock Switching Station in Middletown and Norwalk Substation in Norwalk: Joint Filing by the Connecticut Light and Power Company and the United Illuminating Company*", October for delineation of the proposed route.

A synopsis of the proposal in Maromas follows: The proposal entails widening the legal R.O.W. from the existing 250-foot R.O.W. to a 335-foot R.O.W. and the clearing of additional vegetation within that R.O.W. with retention of vegetation adjacent to streams and wetlands in the corridor if possible. Work includes the leveling at transmission structures and guy wire locations, access road construction to each transmission structure where needed, and blasting where needed. To achieve the width and alignment of R.O.W. as proposed some additional CL&P property will be used and 9.5 acres of private land will be acquired on the south side of the R.O.W.

Detailed data was compiled for the Project in an area much larger than the R.O.W. and so the following volumes of the "*Application to the Connecticut Siting Council*" may provide detailed resource data of interest to AMP for conservation purposes:

- Volume 2-depicts map of wetlands that are listed in Volume 1, Table 3
- Volume 3-depicts map of historic resources and archeological data as listed in Vol.1, Table 1
- Volume 4-Amphibian Breeding Survey
- Volume 2-Wetlands and Watercourses Description Report

On August 16, 2004, the Connecticut Siting Council announced that it is suspending the hearings due to its concern regarding ISO-New England's uncertainty regarding a plan to bury 24 miles of cable in the Fairfield County portion of the proposed project. Its decision regarding project approval, anticipated for December 2004, is now delayed.

Long Lane Property

The State of Connecticut transferred the 295-acre Long Lake property to the City of Middletown sometime after 2002 (see **Appendix KK**, for delineation of parcels). To date, there has been no definitive proposal for the use of this land, other than the

“recreation designation” as indicated on the SSA map, **Appendix KK**. Development of a golf course has been considered. This is a significant amount of acreage whose open space use remains uncertain.

Physical Constraints to Development

The land in Maromas presents significant constraints to development as well-documented in the City planning document, *“The Future of Open Space Acquisitions and Developable Land in Middletown”*, Bill Warner, City Planning Director; as submitted to City of Middletown Planning & Zoning Commission, January, 2004. The report, which is essentially a build-out study that highlights the fiscal benefits of less new residential development, presents maps of areas with steep slopes, areas of shallow-to-bedrock soils, and areas with low potential for septic suitability, see **Appendix NN**.

The report concludes: *“Therefore a portion of the land that is outside the sewer service area and that has been designated as fully developable land in the past actually can be considered unsuitable for development”*. Much of the residentially-zoned land in Maromas falls in this category. While, on the one hand, this report brings glad tidings to AMP, it should be noted, that this assessment does not account for recent and future advances in package treatment plant technology which may have feasible application in a sizable residential development proposal, nor does it account for the possible presence of intermittent spots of “good soils” not identified in the available soils information or development for resource extraction.

IV. CRITERIA FOR PRIORITIZATION IN PRESERVATION/PROTECTION PLANNING

Presently, AMP does not possess a set of criteria for prioritization of lands for protection/preservation. Any prioritization of lands for preservation/protection or for acquisition must be based on established adopted criteria. Therefore, this report does not include a discrete listing of lands or areas prioritized for preservation. However, a guide to criteria for prioritization is offered in this Section. A discussion of suggested possible preservation/protection areas based on data gathered and standard preservation objectives and other factors is presented in Section V.

Development of Criteria for Prioritization

Many sets of criteria for prioritization of lands for protection/preservation are available to AMP for its consideration in refining its priorities in this area. The criteria reflect the differences in the mission of the respective organization. The two sets adopted by the City of Middletown Conservation Commission in 1990 and 2000 are included as **Appendix RR**, and the set used by the State of CT DEP is included as **Appendix SS**, for reference purposes.

Although these documents are informative, it is recommended that AMP develop its own set of criteria based on its mission. The Conservation Commission's focus is "open space" as defined by and for the good of the City. This parameter narrows the criteria considerably. The priority placed by the State on public access and recreation (such as hunting) is central to the DEP's mission but may not be a subject of consideration for AMP. Another interesting example of a specific focus of an organization/agency, pertaining to the area in and along the Connecticut River, is demonstrated by the Silvio O. Conte National Fish and Wildlife Refuge Acquisition Priority Criteria Focus Areas which are identified as high, medium and low priority based on their values for the following:

- 1) federally listed endangered, threatened species or species at risk (formerly candidate species) for federal listing
- 2) rare species
- 3) fisheries
- 4) wetlands
- 5) waterbirds
- 6) contiguous habitat type
- 7) unusual habitat type
- 8) migratory landbird habitat

Clearly, the agency's focus is wildlife, not access, scenic values, or environmental quality.

As thinking evolves in the land preservation field, old ways at looking at priorities may shift and criteria for preservation may need to be revisited. A good example is recent developments in the area of conservation planning relative to planning for biodiversity and ecological systems planning ("ecofunction"). Changes in the business

world and in statewide policy will exert an effect. Witness the changes in land disposition resulting from the deregulation of the electric utility industry and from changes in ownership patterns for water utilities.

Due to policy changes reflecting current thinking in the land use and environmental fields, the State will be putting more emphasis in the future on the protection of the following: lands adjacent to and complementary to protected open space land; land adjacent to or complimentary to Class I or Class II water company lands; consistency with the State's plan of conservation and development; multiple protection elements, such as water quality and supply protection, scenic preservation and farmland preservation; and "*the preservation of forest lands and bodies of water which naturally absorb significant amounts of carbon dioxide*" (the latter clause attests to the need to address Connecticut's poor air quality).

A well thought out basis for a prioritization criteria scheme needs to be crafted considering many factors and leaving room for the direction Connecticut is headed.

Identification of Important Ecological Systems Needed

An identification of important ecological systems in Maromas -- which was beyond the scope of this report -- is another step in the process of understanding which areas are the critical areas to protect in Maromas. Under this step, riparian corridor areas would be defined, identified, and mapped. Viable wetland complexes, watercourses, fields capable of supporting grassland species, and wildlife movement corridors would be identified and mapped. Existing mapped data, e.g., the DEP NDDDB "blobs" and the forest block, would be added to the above data map to comprise a map of important ecological systems in Maromas.

This map would be useful in the overall prioritization process for the residentially-zoned land in Maromas. It could form the foundation for a new regulatory approach to preservation planning: the conservation area overlay zone (see below, under Section V., for more on this topic.). It would also be useful for area-specific planning. For instance, if the large tidal marsh, located on the Connecticut River near the southern end of River Road, was targeted by AMP as a top preservation/protection area and maintenance of water quality was determined to be critical to the integrity of the marsh, the Hubbard Brook drainage basin, which discharges to the marsh, would become AMP's focus area. Important ecological systems -- components as itemized above -- would be identified and mapped within the basin. Existing data, such as land uses/land cover, soils, slopes, zoning, biological data within the basin would be determined from existing information -- much of which is contained in this report.

With this information in hand, a management plan for the basin could be developed that may or may not include acquisition as a goal.

V. SUGGESTED POSSIBLE PRESERVATION PRIORITY AREAS IN MAROMAS AND NEXT STEPS

Methodology Used to Select Key Areas for Preservation/Protection in Study Area

Given the reservations stated above in Section IV. concerning the lack of a clear set of criteria for prioritization to guide the selection of lands, a definitive preservation/protection plan could not be formulated for AMP. Another drawback is the lack of accuracy of Assessor's parcel data on the City Assessor Maps or on the Midstate RPA GIS data, which is readily noticeable while comparing maps from different sources. Improvement of available map data would be helpful as well as GIS capability to coalesce map data for analysis. (The latter may be possible to achieve by the Conservation Commission working with the City Planning staff.) Some map data is out of date, case in point, being the City's map data of committed open space which does not reflect the Long Lane property. (It should be noted that the committed open space data in **Appendix B**, does not include delineation of the 295-acre Long Lane property -- comprised of many parcels). And finally, not enough local information about properties was known to be able to determine a prioritization recommendation based on the urgency for preservation but the following factors may be indicative of relative urgency.

It can be surmised that properties owned by private entities, such as a realty corporation, (and there are several in Maromas) may be those properties most likely to be the subject of a development application in the near future. Lands possessing physical characteristics most suitable for development would be rated the highest (such as gentle sloping, well-drained soil) regardless of ownership. Much of Maromas possesses steep slopes, shallow-to-bedrock soils, wetlands and vernal pools - all of which serve to limit the amount of available land suitable for residential development. These qualities would not be a deterrent relative to proposed extraction of natural resources, however.

NU formulated a "Conservation List" of properties for possible disposition for review by the DEP, submitted November, 2003. DEP has selected all the lands that NU indicated it was considering for disposition with the exception of developed lands, that is, lands with transmission facilities, etc.. (See "Composite Factor Map for Preservation/Protection of Residentially-Zoned Land in Maromas", **Appendix C**, for demarcation of these NU properties.) Regarding funding, Public Act No. 00-203, *An Act Concerning the Open Space Trust Fund*, Section 5, affords DEP priority ranking "to open space land to be permanently preserved that is owned by an electric distribution company or electric supplier...". (The City of Middletown expressed interest in acquiring additional properties from NU, however none lie within the Study Area, see **Appendix CCC**.) Northeast Utility lands, if disposed, will be offered first to the DEP, then to the City, then to the Land Trust, in a prescribed time frame, so there should be time to act to raise funding should these entities not be able/willing to acquire the land. The Trust for Public Land may be able to assist in this regard. Considering the above, possible development of these NU properties is not deemed an imminent concern.

With the above reservations in mind, possible preservation priority areas emerged as determined from an assessment of the following:

- natural resource data and other environmental data gathered in Phase I and Phase II work
- application of certain standard preservation principles
- application of other resource factors (scenic-related, recreation-related, water supply related)
- elimination of certain areas based on unsuitability for development

The preservation principles applied include:

- "Bigger is better" (attempt to conjoin land to existing committed open space)
- Windows (attempt to fill in any inclusions of land existing within an area of committed open space)
- Connections (attempt to connect existing corridors -- wildlife movement corridors, trails, greenways, riverine corridors)
- Diversity (attempt to preserve critical or imperiled populations or habitats and/or representative species/habitats)

Key Areas for Preservation/Protection in Study Area

Key areas for preservation/protection are listed below. Those elements/areas indicated with an asterisk are delineated in the "Composite Factor Map for Preservation/Protection of Residentially-Zoned Land in Maromas", completed by consultant, **Appendix C**. Other data appears delineated in various Appendix items. (The "Composite Factor Map" also includes delineation of the Sewer Service Area, City well field, contiguous unfragmented forest blocks, proposed 345 kV transmission line R.O.W route, COS, planned use area designation changed in State Plan, and NU lands.)

Specifically, key areas for preservation/protection include:

- **Areas abutting existing committed open space** – (see "Composite Factor Map" to discern these areas by inspection. There is a swathe of properties abutting COS that runs from Town Farms Park on the Connecticut River, southward to the Cockoponset State Forest (CSF) land off Airline Road and eastward to the other CSF parcel.)
- **Inclusions within committed open space** - (see "Composite Factor Map" to discern these areas. There appear to be two parcels, however, parcel data mapping is inaccurate.)
- **"1993 Open Space Plan" Priority Areas*** - (for description of these four areas, see Section III, Advisory Plans, above, and **Appendix LL**). The areas selected that lie within or partially within the Study Area are "Laurel Wetland System", "Spiderweed-CT Valley Hospital Corridor", "Hubbard Brook" and "Connecticut River Wetlands". The composite of factors that compelled the Conservation Commission to select them in 1993 are relevant today. To that equation, however, one needs to apply other factors, such as DEP's interest in acquiring some of these lands, and additional factors mentioned above.

- **Vernal pool concentration zone*** - There is a notable preponderance of vernal pools in Maromas, (see **Appendices SS and TT**, "Vernal Pool Inventory - Middletown, CT", Middlesex County Soil & Water Conservation District, Spring 2000), that deserve special attention with regard to conservation efforts. These areas of concentration are a high priority for preservation by some means. If development was proposed for this area, a conservation plan should be designed for each vernal pool on an individual basis involving completion of a biological survey of site specific conditions, terrain, and proposed land alteration activity if applicable. (For more on vernal pools, see above, under Section II., "Assets of the Study Area".)
- **Natural Diversity Database mapped sites*** - (aka State of Connecticut DEP Natural Heritage Program State and Federally Listed Species and Significant Natural Communities) There appear to be eight "blobs" plus the swathe paralleling the Connecticut River identified on the DEP map, (see Section II., "Assets" for more discussion). Within the Study Area, approximately 80% of the DEP designated area lies on private property. However, these sites require a management plan to preserve their integrity whether they are located on private property or on committed open space (COS) and whether the land is developed or undeveloped. (See Section VI. for recommended regulatory changes pertaining to this issue.)
- **Public Water Supply Watershed lands*** - (which is the Class I, II, III water utility land and remainder of the reservoir watershed in private ownership - this area is clearly depicted in **Appendix MM**.) The DEP should place a conservation easement on the State-owned watershed lands. The DEP is likely to purchase the private properties within the watershed should they come on the market as the DEP has placed a high priority on protection of public water supply watershed lands.
- **Linkages** - (access to existing committed open space (COS), between COS, between areas of special interest, and areas with trail potential.) **Appendix DDD**, taken from the CRISP report, depicts "*areas recommended for protection*", the Mattebesset Trail, wetlands, streams, and clear parcel boundaries of State land. The mapped area runs into the current Study Area. The map is included herein to illustrate potential linkage possibilities—tying areas recommended in that report to areas recommended within this report and tying high priority areas to State land, etc. In addition, possible linkages to open space areas within the Town of Haddam, (not explored in this study), -- utilizing the recently adopted *Haddam Open Space Plan*, should be pursued.
- **Unfragmented forest** - There are numerous areas within the contiguous forest block boundary depicted on the "Composite Factor map" in private ownership, the largest landholder being NU. Precluding acquisition of these areas, property owners (with the exception of NU which manages its forestland) may be interested in completing a Forest Stewardship Plan (FSP) program for their land. The possible untapped potential of their land as timberland may provide a disincentive to sale of the land for development. The Plan document is developed jointly by the owner (of 10-acres or more) and a certified forester. The Plan includes information on plant species occurring in each plant community, their age, health, history, and how they are

changing over time; where high quality wildlife habitats are and where opportunities exist to make habitat better; stream and wetland resources information, including vernal pools or fish habitats; unique plant communities, potential scenic vistas or trail sites, and timberland potential. (See **Appendix YY**, "Preservation Mechanisms and Technical Assistance Programs for Farmland and Managed Forestland" under subheading, Forest Stewardship Plans, by the author, and, see <http://www.canr.uconn.edu/ces/forest/steward.htm>.)

- **Riverine corridors** - (An adequate identification map is not yet available to assist planning.) These environmentally critical areas are only partially addressed in the wetlands regulatory process. Conservation easements can be acquired along important corridors, such as Hubbard Brook. Regarding wetland permitting, conservation restrictions can be imposed on riverine corridor areas by the City Inland Wetlands and Watercourses Commission. See Section II. "Assets" for description of term.
- **Ridgetops** - These are highly visible features that are very vulnerable to visual and environmental disturbance. An adequate identification map is not yet available to assist planning. There are many scenic ridgetops in the Study Area of concern.
- **Agricultural land** - This land usually poses minimum constraints to development and is therefore highly desirable to developers. Agricultural land is an integral component of the character of Maromas. In terms of habitat value, there are six or seven large fields which provide foraging and hunting habitat for many species and should be investigated for their potential to support populations of grassland species of birds, (see **Appendix CC**). The City's agricultural preservation effort would benefit from a set of criteria to guide preservation priorities, (as discussed further elsewhere in the report).
- **Scenic corridors** - While the aesthetic qualities of scenic corridors are not in themselves critical to the environmental well-being or the development potential of Maromas, they are highly vulnerable to disturbance. Bear Hill Road, Brooks Road, Cedar Lane, and Training Hill Road (unpaved portion), in particular, are exceptionally scenic roadway corridors warranting protection. These roads would qualify under the statute for local scenic road designation. The City should adopt a Scenic Road Ordinance. Absent a Scenic Road Ordinance, scenic easements can be acquired to protect and preserve the integrity of discrete views in the corridor.

Next Steps in the Process

The next steps in the process are as follows:

- AMP must formulate an internal set of criteria for prioritization of lands for protection/preservation.
- The Conservation Commission must revise its outdated set of criteria.

- All organizations/agencies interested in the preservation/protection of Maromas must work constructively with the City exploring creative alternatives to see their goal realized.
- And all organizations/agencies should work cooperatively with the Trust for Public Land (TPL) on its new Connecticut River Watershed Program initiative to preserve land within the Watershed, (see **Appendix TT**). TPL's applicable goal is to preserve land that provides access to the Connecticut River, farms and open spaces in urban areas. TPL will complete due diligence on properties, assist in land transaction negotiations and work with municipalities and land trusts to raise money and apply for grants.
- Actions other than acquisition need to be undertaken to promote the preservation/protection of Maromas. Recommended actions are itemized in Section VI. of this report. Funding for acquisition, be it State, City, or NGO sources, is very limited, and so actions other than those whose endpoint is acquisition must be pursued. Note that many of the recommended actions in Section VI. may not appear elsewhere in the report. Availability of land prioritized for acquisition is another factor. Targeted land may not be for sale. However, there are many ways of structuring a land transaction, (bargain sale, conservation restrictions, etc.), that can provide tax advantages or other incentives to influence a property owner to become a willing seller.
- Work should include exploration of creative proposals. See below for one such proposal, the conservation area overlay zone.

Introduction of the Conservation Area Overlay Zone Concept

A recent concept in land use planning that accommodates the findings of conservation biology is the application of a "conservation area overlay zone." The parameters of such a zone may vary but, in essence, the overlay zone describes a land area within which land use activities are regulated with standards designed to maintain the ecological health and functioning of the natural systems therein.¹³ The information provided in this report provides the framework for further investigation to support the demarcation of such an area in Maromas. See "*Draft Guilford Natural Resources Inventory*", Guilford Conservation Commission, August, 2004, (unpublished), for an illustration of how natural resources data was analyzed to determine a conservation area in the Town of Guilford to be used as the basis for a possible future conservation area overlay zone. Also see the biologically-based work of the Farmington Valley Biodiversity Project in this regard planning for a seven-town area. (Visit <http://www.frwa.org/programs/>).

Conservation area overlay zones have been adopted in several municipalities in New York State and are under consideration in several municipalities in Connecticut.

¹³ See *Conservation Area Overlay District: A Model Local Law*, Wildlife Conservation Society/Metropolitan Conservation Alliance (MCA) Technical Paper No. 3; prepared for MCA by Pace University's Land Use Law Center, MCA, 2002, for more on the subject.

Typically, provisions are written to exclude single family lots from regulation. The greatest benefit from such provisions can be realized regarding the development of large tracts where, with careful site design, critical natural resource areas and features can be preserved, in a win-win situation.

Common Ground

The City's view toward such a proposal may not be as disparate as some may think. Two concepts are embodied in a recent City document that may serve as the common ground between the City and AMP and may point favorably in the direction of consideration of a conservation area overlay zone concept. A recommendation excerpted from the document, "*The Future of Open Space Acquisitions and Developable Land in Middletown*", William Warner, Director of Planning, Conservation and Development, City of Middletown, dated January, 2004, as submitted to City of Middletown Planning and Zoning Commission, (included as **Appendix NN**), follows, with underlining added:

"Focus future open space acquisitions outside of the sewer service area where land is less expensive. This will encourage infill within the sewer service area, infill development occurring where the infrastructure already exists, and will result in a much more efficient and less costly pattern of development. It will also maintain the city's rural character and create an urban growth boundary resulting in a permanent greenbelt around the city for all residents to enjoy."

The basis for this landmark proposal was the assessment of the physical characteristics of certain outlying areas, including Maromas, as "*unsuitable for development*". (See **Appendix NN** for supporting GIS maps therein depicting soils, slopes, and groundwater characteristics; and see Section III, under "Physical Constraints to Development", for more on Warner's report.)

The "urban growth boundary" concept referenced above is a Smart Growth tool exemplified by the Portland, Oregon paradigm. (It is very interesting that the concept is floated in the document as it is a controversial program adopted only in a handful of municipalities in the country.) Maromas serves as the City's eastern "greenbelt", as surmised from the quote. The Planning Director's bold vision statement would be strengthened by the assertion that Maromas is the City's, (and indeed the region's), "green infrastructure". (Green infrastructure is defined as the natural life support system - a strategically planned and managed network of wilderness, parks, greenways, conservation easements, and working lands with conservation value that supports native species, maintains natural ecological processes, sustains air and water resources, and contributes to the health and quality of life for America's communities and people¹⁴).

The conservation area overlay zone is the perfect tool to insure maintenance of the green infrastructure without outright acquisition of all the critical lands within Maromas. Development occurs designed to harmonize with the environment preserving the integrity of the functioning of natural systems. While the premises of the two

¹⁴ See www.greeninfrastructure.net for further discussion.

concepts presented here spawned from different priorities and different objectives, with some compromise, the two viewpoints may be able to be brought into alignment and AMP's objectives may be achieved.

VI. RECOMMENDED ACTIONS FOR THE PRESERVATION/PROTECTION OF STUDY AREA WITH AGENCY/ORGANIZATION INDICATED

Recommended action items are presented below arranged by subject category. Agencies/organizations that have the authority/mission charge to implement such recommended actions are indicated for each item (by acronym). It is acknowledged that AMP is the primary group promoting all of these initiatives, irrespective of the agency/organization with the authority/means to effect the recommended action.

Recommended actions are organized by the nature of the action into the following sequential headings:

- A. Regulatory/Policy Approaches to Land Preservation/Protection*
- B. Non-Regulatory/Policy Approaches to Land Preservation/Protection*
- C. Action Relative to Possible Development Proposals*
- D. Public Outreach, Promotion of Public Awareness of Maromas' Assets, and Development of a Town-wide Environmental Ethic*

Agencies earmarked include: Connecticut River Watershed Council (CRWA), The Nature Conservancy (TNC), Middlesex Land Trust (MLT), Mattebeseck Audubon Society (MAS), Connecticut Forest & Park Association (CFPA), and the following agencies of the City of Middletown: Common Council (MCC), Conservation Commission (CC), Urban Forest Council (UFC), Harbor Management Agency (HMA), Planning and Zoning Commission (PZC), and Inland Wetland and Watercourses Commission (IWWC).

A. REGULATORY/POLICY APPROACHES TO LAND PRESERVATION/ PROTECTION

Subsection A. is organized in the following subject categories:

Coastal Area Extension/Gateway Commission Extension
Connecticut River Assembly
Plan of Conservation and Development
Open Space Plan
Land Use Regulation-Related Matters (Zoning, Subdivision, Wetlands)
Biodiversity Preservation
Agricultural Lands
Water Supply Lands
Scenic Resources Protection
Taxing District Funds
Public Act 490 Preferential Tax Program
Sewer Extensions
State Plan

Coastal Area Extension/Gateway Commission Extension

-Advocate for legislative extension of the designated Gateway Commission area northward up the Connecticut River. The provisions for the existing Connecticut River Assembly (CRA), which has oversight in the area north of the Gateway, is a much weaker version of the Gateway provision. To promote such a concept, David Blatt, DEP OLISP, is working with the CRA and the Capitol Region Conference of Governments (CRCOG) to consider hosting a "River Forum" series upstream similar to the one that was held recently in Gateway area. Check on status.

PZC, HMA, CC, CRWA, MLT, MAS, AMP, TNC

-Advocate for extension of the Coastal area under the Coastal Area Management Act to include Middletown. DEP OLISP has proposed extension of the "coastal area", (not the "coastal boundary" -- terms as defined in CGS 22a-94), to include all towns that front on the Connecticut River (as well as Derby on the Naugatuck River). Inclusion of Middletown under the CAM Act will afford additional protections to Maromas as a consequence of efforts to protect the Connecticut River as the receiving body for waters from the uplands.

Mary-beth Hart, OLISP, elaborated on the proposal, as follows: These towns are already subject to the DEP's permitting authority pursuant to the Structures, Dredging, and Fill Act. Expansion of the coastal area will ensure that state permits issued in coastal area towns will incorporate consideration of coastal management policy issues like water quality and public access as warranted. Also, the coastal management act requires that any activity proposed within the coastal area needing a permit from other units within the DEP must be consistent with coastal management policies. So expanding the coastal area will ensure that coastal management considerations are also incorporated into other DEP regulatory programs as warranted. The towns on the river(s) are also a part of the State's coastal nonpoint source pollution control program, so including those riverfront towns in the coastal area will complement our coastal NPS efforts as well. In addition, from time to time our office has grant money available for coastal towns to undertake coastal planning activities, but upper Connecticut River towns are not currently eligible to receive those funds. Expanding the coastal area will pull upper River towns into that grant program (as long as money is available). Expansion of the coastal area will also bolster eligibility for those new towns to submit proposals for the Long Island Sound License Plate fund. We want to make it clear that expansion of the coastal area will NOT result in additional site plan review mandates for upper River towns. The primary impact of the coastal area expansion will be on the DEP in terms of reviewing additional projects, and on other state agencies like DOT in terms of preparing coastal consistency worksheets for projects that are not currently subject to such review. But no additional mandates will be placed on municipal land use authorities. It is hoped this change will lead to a revitalized and strengthened Connecticut River Assembly. This will require legislation to be introduced in the next session, starting January 2005.

AMP, CC, MLT, MAS, TNC, CFPA, HMA, PZC, IWWC

Connecticut River Assembly

-Monitor records and Minutes of the Assembly.

AMP

-Write Assembly members regarding applications referred for review stating position relative to an application proposal.

AMP, CC, MLT, MAS

-Monitor Connecticut River Assembly's mandated review of revisions to the POCD. Write to Assembly in the interim period expressing views. Ensure referral was forwarded by PZC to CRA. Review CRA response.

AMP

-Lobby State of CT to acquire scenic easements along Connecticut River as provided for in the "Upper Connecticut River Conservation Zone" statutes. (See Appendix VV for statute regarding area and authority.)

AMP, CC, MLT, MAS, TNC, CFPA, HMA, PZC, IWWC

Plan of Conservation and Development

-Testify at upcoming Draft POCD hearing relative to issues raised in this report. Secure inclusion of priority areas for preservation in the Open Space, Natural Resources, and Land Use sections of the proposed Draft POCD. (PZC Workshops for the latter will be held from now through the Fall.)

CC, AMP, MLT, MAS

-Secure inclusion of the preservation priority areas which AMP desires to see preserved as open space land in the new POCD and on a revised Open Space Map to be adopted, as is required to meet eligibility guidelines for State acquisition funding and for City funding requirements as well. (City of Middletown Ordinance No. 09-02, "An Ordinance Appropriating \$3,000,000 for the Acquisition of Land for Open Space and Other Recreational Purposes", included as Appendix AAA, cites two kinds of land indicated as eligible for acquisition:

"1) an open space parcel to be acquired needs to be so indicated on an adopted POCD.¹⁵, and,

2) land for parks and other recreational purposes and their improvements ((to be acquired)) with no POCD or Recreation Plan stipulated").

CC, AMP, MAS, PZC

¹⁵ The Ordinance cites CGS Sec. 7-131b. Acquisition of open space land and easements. Revaluation of property subject to easement. (a) Any municipality may, by vote of its legislative body, by purchase, condemnation, gift, devise, lease or otherwise, acquire any land in any area designated as an area of open space land on any plan of development of a municipality adopted by its planning commission or any easements, interest or rights therein and enter into covenants and agreements with owners of such open space land or interests therein to maintain, improve, protect, limit the future use of or otherwise conserve such open space land.

-Amend POCD to incorporate a policy of commitment to biodiversity.

PZC

-Monitor Connecticut River Assembly's mandated review of revisions to the POCD. Write to Assembly in the interim period expressing views. Ensure referral was forwarded by PZC to CRA. Review CRA response.

CC, AMP

-Revise new Draft POCD to correct figure for committed open space relative to CVH acreage and City properties not being "committed".

CC, PZC

-Revise new Draft POCD to stipulate a proposed use for recent acquisition of 295-acre Long Lane property by City and an accurate depiction of acreage on POCD map.

CC, PZC

-Adopt a host of preservation/protection policies into POCD, as enumerated within this report. This would entail revision to Draft POCD prior to adoption of POCD or, alternatively, a subsequent amendment to the POCD.

PZC

-Testify at POCD hearing regarding need to incorporate in the new POCD all the topics indicated in the action items above, (including CAM extension), plus those in the "Open Space Plan" action items that follow.

AMP, CC

Open Space Plan

-Revise and adopt an updated City of Middletown Open Space Plan reflecting Conservation Commission thinking since its last revision in 1993 and incorporating points raised in this report.

CC

-Revise "Open Space Plan" to update Plan to jive with new Draft POCD's new City open space goal of 20%. This is problematic as new POCD incorporates the 1993 Open Space Plan as its open space plan component but the 1993 proposed open space goal was 35%. This should be rectified.

CC

-Propose a different open space goal figure. In the process of formulating a revised open space goal proposal, check City's calculations on land categorized as existing open space.

CC

-Incorporate "Linear Corridor" concept into the "Open Space Plan". While the name and the concept, "Linear Corridor", is commonly discussed, the term itself does not appear in recent plan documents.

CC

-Revise "Open Space Plan" to correct figure for committed open space relative to CVH not being "committed".

CC

-Revise "Open Space Plan" to stipulate a proposed use for recent acquisition of 295-acre Long Lane property by City and any other new acquisitions in Maromas by the City.

CC

-Revise "Open Space Plan" to depict existing and potential trails and greenways (see below, under "B. Non-Regulatory/Policy Approaches"), and State-owned properties, including Dart Island.

CC

-Adopt the "Natural Resources Inventory" for the City of Middletown as part of the Open Space Plan. (See below, under "B. Non-Regulatory/Policy Approaches")

CC

Land Use Regulation-Related Matters (Zoning, Subdivision, Wetlands)

-Adopt a "payment of fee-in-lieu-of open space" provision. Enabled in the statutes, many municipalities adopted such a regulation and are using the funds to purchase high priority open space properties or easements. (Note that such a provision was submitted to the PZC for its consideration and withdrawn, 8/13/03.)

PZC

-Adopt a conservation area overlay district for Maromas. (See Section V. in text for discussion.)

PZC

-Adopt conservation-oriented design regulations. The City's current open space subdivision regulations would need to be revamped to incorporate conservation design ideas, such as those advocated by site planner, Randall Arendt.

PZC

-Advocate for requisite open space subdivision development provision in Maromas with conventional subdivision by Special Exception.

CC, AMP

-Exercise right to impose conservation restrictions on proposed development site plans where warranted to protect sensitive natural resources.

PZC, IWWC

-Revise minimum lot area requirements to reflect current thinking restricting usage of steep slopes, wetlands and floodplains to calculate base lot area.

PZC

-Adopt ridgetop protection provision for Maromas, the need for which is advocated in three documents: the 2002 Buckhurst *POCD*; the "*Lamentation Mountain Tri-Town Plan*"; and the "*Metacomet Ridge Conservation Compact*", (signed by the City of Middletown and 15 other communities in 1996). Current subdivision regulations do contain language relative to ridgetop protection in cluster subdivision design. See the Town of Woodbury, CT subdivision regulation for viewshed provision which pertains to development design on ridgelines, **Appendix WW**.

AMP and CC

-Revise requisite minimum lot size provision within the CVH public water supply watershed to 2 acres (as is recommended in the CVH Water Supply Plan) as a protection step for land not owned by the State.

PZC

-Adopt provision for consideration of use of package treatment plants for use in cluster development (and corresponding City Water Pollution Control Authority legislation.)

PZC

-Review City's proposed Phase II stormwater management program (completed in compliance with US EPA directive) for incorporation of low-impact stormwater provisions, zero-increase in runoff provision, and other management and regulatory practices to insure maintenance of surface water quality in Maromas. Follow the approval process for regulatory changes resulting from the Phase II stormwater program.

AMP, CC

-Adopt provision for maintenance of biodiversity in the City of Middletown (see below under "Biodiversity Preservation").

PZC

-Revise Inland Wetlands and Watercourses Regulations regarding "50-foot setback area" to "100-foot setback area" to address importance of riparian corridor.

IWWC

Biodiversity Preservation

-Amend POCD to incorporate a policy of commitment to biodiversity preservation.

PZC, CC

-Adopt a provision in all land use regulations to require pre-application meeting with environmental planner regarding land use activities on properties identified as containing/abutting a NDDB location with corresponding requisite referral to DEP.

PZC, IWWC, CC

-Adopt a provision in land use regulations to require identification of presence of state-listed species, and if present, require applicants to provide information that insures best effort to plan for and protect natural resources has been addressed.

Under Connecticut's "Endangered Species Act", development projects undertaken by state agencies or funded with state monies would be required to consider protection of state-listed species. However, private development is not currently regulated under this Act unless the developer needs state environmental permits, in which case the granting of the permit is considered a state action and is covered by the Act.

Because many imperiled species or habitats occur within wetland soil types, the IWWC should address best management practices for those locations indicated on the "State of Connecticut DEP Natural Heritage Program State and Federally Listed Species and Significant Natural Communities Map" that contain wetland areas proposed for land use activities.

PZC, IWWC, CC

-Adopt a provision requiring the completion of a biological survey for all proposed land developments over 10 acres in Maromas.

PZC, CC

Agricultural Lands

-Adopt provisions to encourage viability of farmland in Middletown accommodating new approaches in diversification of farming business as discussed in Section II, "Assets of the Study Area", above. (Also, see below, under "B. Non-Regulatory/Policy Approaches" for recommended actions.)

PZC

-Resolve issue of public access requirement regarding agricultural land development rights purchased by the City, (e.g., access can be restricted to a trail or a small area) to promote the use of the Purchase of Development Rights tool by the City.

CC, MLT

Water Supply Lands

-Promote DEP placement of a conservation easement on CVH watershed property and the property's inclusion as part of the Cockaponset State Forest.

CC, AMP, MLT, TNC

-Review Water Supply Plan for CT Valley Hospital to determine anticipated plans for the watershed properties. An update of the Water Supply Plan is mandated to be completed in 2006. (See above under Section II, "Assets of the Study Area", for discussion of issues.)

AMP, CC

-Revise requisite minimum lot size provision within the CVH public water supply watershed to 2 acres (as is recommended in the CVH Water Supply Plan) as a protection step for land not owned by the State.

PZC

Scenic Resources Protection

-Adopt a City Scenic Road Ordinance. See Appendix XX, for "Ordinance for Designation of Scenic Roads", Town of Old Saybrook, CT.

MCC

-Lobby private property owners in Maromas once a Scenic Road Ordinance is in place, to secure scenic road designation for their town road. Bear Hill Road, Brooks Road, Cedar Lane, and Training Hill Road (unpaved portion), in particular, are exceptionally scenic roadway corridors warranting protection and these roads would qualify under the statutes for local scenic road designation.

CC, AMP

-Adopt scenic resource protection provisions for all natural scenic resources as listed in Section II., "Assets" above. Refer to provisions in Appendix UU, "Scenic Resource Protection Methodologies", Erin O'Hare, AICP, Erin O'Hare Land Use Planning, August, 2004.

PZC, CC, AMP

-Adopt tree-cutting standards in zoning regulations. The Gateway Commission and Bill Warner, Director of Planning, City of Middletown, have developed proposed tree cutting provisions.

PZC

-Adopt scenic preservation policy for Department of Public Works relative to practices within City-owned road Rights of Way.

CMC

-Adopt design standards for the residentially-zoned land along the Connecticut River similar to the Gateway Commission's "Conservation District" along the Lower Connecticut River.

PZC

Taxing District Funds

-Pursue City's allocation of tax revenues to be collected from the Kleen Energy taxing district (estimated at approximately \$6 million/yr.) into the acquisition of additional open space in Maromas.

MCC

Public Act 490 Preferential Tax Program

-Encourage property owners not currently under the P.A. 490 program who may not be aware of the benefits of this program to take advantage of the tax saving offered by the program thus forestalling possible plans to divest land due to tax concerns. (See Appendix II for a listing of Maromas properties currently enrolled under this program.)
AMP, CC

Sewer Extensions

-Research status of septic system failure in Maromas and keep tabs on development proposals that may require sewers such as an Active Adult community complex. Follow proposed Capitol Improvement Plans and Common Council agendas relative to proposed sewer extensions.

AMP

-Contact CFE if a proposal involves the I-3 zone.

AMP

State Plan

-Review (Recommended) Draft Connecticut State Plan of Conservation and Development (2005-2009) (available on the web) and assess accord with City Sewer Service Area (SSA) and AMP open space priorities. Follow next Legislative Session adoption proceedings for new Plan.

AMP, CC

**B. NON-REGULATORY/POLICY APPROACHES TO LAND PRESERVATION/
PROTECTION**

Subsection B. is organized in the following subject categories:

**Open Space Planning
Biodiversity Preservation Planning
Agricultural Preservation Planning
Scenic Protection Planning**

Open Space Planning

-Call for another Referendum for the bonding of additional open space acquisition funding. In addition to fee simple purchase, this should incorporate funding for acquisition of trail access, scenic easements, and conservation easements as well.

AMP, CC, MLT, MAS

-Encourage City to pursue state funding for land acquisition in Maromas. In addition to fee simple purchase, this should incorporate funding for acquisition of trail access, scenic easements, and conservation easements as well.

CC, AMP

-Adopt criteria for prioritizing Middletown's open space land in general. Current criteria for prioritization of land for preservation which was developed by the Conservation Commission need to be updated (see discussion above, under Section IV., "Criteria").

CC

-Nominate Greenways for designation under State of Connecticut Greenways Program. Currently, there are no State of Connecticut designated Greenways in the City or along the Connecticut River, (as per Leslie Lewis, DEP Greenways Program). Potential greenways are yet to be determined (probably the Blue Trail and the Connecticut River, and possibly other rivers). Several of the following types of areas found in Maromas are also deemed eligible for Greenways by DEP: corridors serving as wildlife migration routes or abandoned railroad rights-of-way, ridgelines, stream belts (i.e., Hubbard Brook corridor). According to Ms. Lewis, Conservation Commissions are typically the nominating party.

CC

-Complete a "Natural Resources Inventory"(NRI) for the City of Middletown (using data in this document as a start) to be adopted as part of the "Open Space Plan". Utilize City GIS facilities and staff in completion of map data set for the NRI. See other CT municipal NRIs, such as Guilford, Washington, Woodstock, Branford.

CC

-Secure open space linkages. Secure additional public access from upland Maromas to CT River and secure linkages between Blue Trail and COS and other trails. See Town of Haddam Conservation Commission's recently adopted "*Open Space Plan and Natural Resources Inventory*" for potential areas of intermunicipal connection. Explore linkages with land in Haddam, CT through trails and trail easements, through purchase of abutting land for open space designation or augmentation to existing open space properties -- for the purpose of preserving existing wildlife corridors, preserving large unfragmented forest tracts, preserving intact ecological systems, and/or enhancing recreational opportunities.

CC, MLT, CFPA, MAS

-Work with Haddam's Conservation Commission regarding its new Open Space Plan and Natural Resources Inventory. Pursue possibilities for intermunicipal planning relative to connectivity of possible future open space and potential trail linkages and identification of important ecological areas on or near the border.

CC, CFPA, AMP

-Implement the preservation and land use recommendations found throughout the Harbor Plan. "*The City of Middletown On the Connecticut River Harbor Management Plan*", Harbor Improvement Agency, adopted 12/2003, is an excellent document (200 pp+), full of useful natural resource data and maps. The document addresses upland areas and potential impacts of alteration of uplands on receiving water bodies as well as addressing Connecticut River shoreline issues.

AMP, CC, PZC, CRWA

-Prepare management plans for City-owned open space in Maromas, including waterfront open space (as recommended in the *City Harbor Management Plan*.)

CC

-Promote the protection of Mattebesett Trail on private properties by easements and stewardship through public awareness and outreach.

CFPA

-Support the proposed designation of the National Scenic Trail proposal for the Mattebesett Trail as part of the Metacomet/Mattebessett/Monadnock Trail.

CC, MLT, MAS, CFPA

-Work cooperatively with the Trust for Public Land (TPL) on its new Connecticut River Watershed Program initiative to preserve land within the Watershed (see Appendix TT). TPL will complete due diligence on properties, assist in land transaction negotiations and work with municipalities and land trusts to raise money and apply for grants. The applicable goal is to preserve land that provides access to the Connecticut River, farms and open spaces in urban areas.

AMP, CC, MLT, MAS

-Work with PZC to incorporate the concept of "context analysis", whereby design decisions and requisite open space decisions are considered within the context of an area

larger than the subject development property; e.g., relative to watersheds, functioning of ecological systems on or near the site, committed open space nearby, etc..

PZC, CC, AMP

-Select a local drainage basin of interest and complete a watershed management plan for the basin, (e.g., install "stream-crossing signs" by stormwater drains, etc.). See the "Mattabesset River Watershed Management Plan" for a model of possible approaches.

CC, MAS, CRWA, IWWC

-Promote the enhancement and restoration of Sumner Brook's riparian ecosystem and fisheries habitat and assess status of this effort. See City Harbor Management Plan for discussion of this specific recommendation.

CC, IWWC, HMA

-Contact the Greater Middletown Preservation Trust for documentation of archeological data in the Study Area and compile the data for use in educational promotions and in the event of a development proposal.

AMP, CC

-Explore idea of locating telecommunication towers on City property with the City. Some towns invite location of tower facilities on town-owned land and designate the lease monies specifically for open space acquisition. (This may already be done in the City.)

CC, AMP

-Maintain vigilance regarding properties coming on the market.

CC, AMP

Biodiversity Preservation Planning

-Organize a "Bioblitz Day" for Maromas. A Bioblitz is a 24-hour marathon biological survey of an area or a municipality. It raises public awareness about value of biodiversity; may perhaps result in the "discovery" of new species for the area, documents state listed species for the DEP Natural Diversity Data Base, and allows experts access to sites. In some communities, the local chapter of the Audubon Society has taken on the role of organizing and collating and publicizing the Bioblitz, and so the Mattabesset Audubon Society may be the lead agency for the Maromas area. Some towns have elected to actively involve the public in the event. Findings are submitted to the DEP Natural Heritage Program. To date, at least five communities have held a Bioblitz event in CT (Guilford, Branford, Madison, Hartford, Danbury).

MAS, MLT, CC, AMP

-Advocate for and conduct a native specimen tree survey for Maromas. Similar to the cataloguing effort of the CT Notable Trees Program, which catalogues the most outstanding representatives on the statewide level, this effort would catalogue Maromas' outstanding trees. The public relations spin-off from the effort would be of value in addition to advocacy for preservation of the specimen trees. Schools could get involved.

Improvement of the City's policy/ordinance on Rights of Way maintenance relative to tree preservation would be encouraged as part of this effort as well.

CC, UFC, CFPA, MLT

-Complete an inventory of wildlife corridors in the Study Area (data was not available). Wildlife corridor protection is a typical element in conservation planning efforts.

CC, MAS

-Retain a biological conservationist (such as Dr. Michael Klemens, of the Metropolitan Conservation Alliance), to complete a Biodiversity Conservation survey and a plan for a selected area.

CC, MLT, MAS

-Encourage education on planning for imperiled species protection. The Connecticut Bureau of Water Management provides ongoing but optional training to local inland wetlands commission members. Some of the training sessions include the study and interpretation of the Natural Diversity Data Base maps. Alternatively, the DEP could be invited to present to a group of agencies/NGOs in the region.

IWWC, MAS, AMP, MLT

-Promote idea for the institution of a "Certification of Natural Heritage Program" for private property owners in the City. "Certificates of Natural Heritage" would be awarded by the CC for private property owners whose land contains a natural resource feature of distinction. The certificate instills pride and recognition of the habitat's value and thereby contributes to the likelihood of preservation of the habitat in its natural condition by the land owner.

CC, MLT, MAS, AMP

-Attend Connecticut Invasive Plant Working Group Symposium, "The Silent Invaders: Identification & Management of Invasive Plants", October 7, 2004.

CC, MLT, MAS, AMP

-Organize an effort to eradicate invasive plants in Maromas.

CC, MLT, MAS

-Obtain, on an annual basis, the latest updated version of the "State of Connecticut DEP Natural Heritage Program's State and Federally Listed Species and Significant Natural Communities, for the City of Middletown, CT", issued annually to the City Planning Department.

CC, AMP, MLT, MAS

-Host a "Planning for Nature: Integrating Biodiversity into Local Land Use Decisions" workshop, by the Metropolitan Conservation Alliance (MCA), similar to the 2003 series co-sponsored across the state by MCA and the Soil and Water Conservation Districts.

CC, MAS, MLT, CFPA, TNC

Agricultural Preservation Planning

-Promote inclusion of all agricultural land use types within City's stated farmland preservation policy.

PZC, CC, AMP

-Prioritize criteria for agricultural land preservation working with the City of Middletown and other groups such as Working Lands Alliance and the Connecticut Farm Bureau. While the City and conservation organizations agree on the goal of preserving farmland, there remains the need for study relative to prioritization of agricultural land based on criteria developed relative to farmlands many benefits to the City (or, separately, to Maromas). The City has no policy handle of this complex subject.

The study could assess the viability of hay farming based on local/regional demand for hay (there are numerous hay fields in Maromas). The study could look at farmland from the multiple resource protection perspective where land in agricultural use is evaluated for qualities other than/or in addition to farm productivity -- its scenic resources, trail access, grassland habitat value, etc., -- with an eye toward town acquisition of development rights, scenic easements, or agricultural easement. Economic spin-offs to the City in terms of agri-tourism and heritage tourism could be assessed. The Qroe Farm approach to conservation development of farmland which maintains the working farm as an integral part of the development could be explored. (See Section II. "Assets", above, for further discussion.)

AMP, CC, MLT, CFPA

-Preserve farmland utilizing various methods of preservation as itemized in Appendix YY, "Preservation Mechanisms and Technical Assistance Programs for Farmland and Managed Forestland", by Erin O'Hare, AICP, Erin O'Hare Land Use Planning, 8/2004.

CC, AMP, MLT

-Host a "Farm Day". Work with local agricultural organizations and societies.

CC, AMP, MLT

-Encourage the City to use Purchase of Development Rights in Maromas. Recently, the City purchased the development rights (PRD) of two farms under the USDA Farmland Protection Program (not in Maromas). PRD is economical method of land protection in that rights can be acquired for 50-60% of the fee simple cost of the land. The land can be sold, or leased under certain restrictions, but it can never be subdivided nor are improvements permitted. Public access may or may not be included, but is required if state funding is utilized. Public access does not have to be full access; it can be trail access or access to a portion of the property. The City has several applications in to USDA but none of the subject farmland properties are located in Maromas.

CC, TPL, AMP

-Work with the Trust for Public Land to preserve/acquire farmland (see Appendix TT for TPL new Connecticut River watershed initiative)

CC, AMP, MLT, MAS, CRWA, TNC

-Inform farmers, directly, in person, of alternative options available to them, including the technical assistance available, as detailed in "Preservation Mechanisms and Technical Assistance Programs for Farmland and Managed Forestland", by Erin O'Hare, AICP, Erin O'Hare Land Use Planning, included as **Appendix YY**, and as detailed in the State of Connecticut Department of Agriculture's "Agricultural Resources Directory": <http://www.ct.gov/doag/cwp/view.asp?a=1366&q=258966>
CC, AMP

-Inform farmers directly, in person, of BMPs that will help maintain the quality of Maromas' water resources.
CC, AMP, CRWA

Scenic Protection Planning

-Complete a scenic roads survey of Maromas roads using the standards in the state scenic road statute for designation criteria for local scenic roads. (See **Appendix FF** for a listing of Maromas street names to assist in this task. Also see "A. *Regulatory Approaches*", above, under "Scenic Roads".)
AMP, CC

-Complete a scenic resources inventory starting with a wind-shield survey to identify scenic views from roads and from other public vantage points. Once scenic resources are identified, an overall scenic resource protection plan can be completed.
CC, AMP

-Complete a Connecticut River Views Survey to identify and document upland visual access points of the views of the River.
AMP, CC, CRWA

-Review the recently released document, "Protecting the Character of the Lower Connecticut River – The Gateway Commission's Vision"; 2004, for approaches applicable to Maromas.
CC, AMP

-Initiate a "Big Tree Survey" as part of an effort to maintain and protect Maromas' scenic road corridors by celebrating the scenic mature native trees in the area. "Biggest Tree Contests" have been conducted in Newtown, Orange, Milford, and other Connecticut communities, often involving the school system. There are "America, the Beautiful" grants for such surveys.
CC, MLT, MAS

C. ACTION RELATIVE TO POSSIBLE DEVELOPMENT PROPOSALS

Subsection C. is organized in the following two parts:

Proactive, Constructive Early Actions Adverse Actions

Proactive, Constructive Early Actions

-Monitor records of City Agencies to get an advance on development proposals. Periodically review the Minutes of Common Council, PZC, and Harbor Management Agency (HMA), records of which are publicly available in City Hall.
AMP, CC

-Review applications against a checklist comprised of the assets identified in this report and then determine possible impacts to each asset.
CC, AMP

-Work cooperatively with PZC to identify preferred open space in proposed development applications as open space setbacks in a conventional subdivision, open space subdivision (cluster), and in a "Large Lot Environmentally Sensitive Subdivision Development", based on the regulatory standards for criteria provided for designation of open space. (See Section III. "Specific Land Use and Policy Issues Areas Considered", under Subdivision Regulations Relative to Open Space for discussion.)
CC, PZC, AMP

-Review PZC applications for off-site and downstream impacts.
CC, IWWC, HMA, PZC

-Assess proposed wetland activity permits in the context of local drainage basin regarding potential area and downstream impacts.
IWWC, HMA

-Suggest alternative site design to conserve resources in the larger context -- within the basin -- within the neighborhood -- within the scenic corridor, etc..
CC, PZC, IWWC

-Suggest incorporation of Low-Impact Development design into development design in early planning phase designed to minimize impervious areas, recharge groundwater in the area, and to mitigate non-point source pollution contributed downstream and in Connecticut River, the receiving body. (See UCONN's Low-Impact Development Pilot Study for Jordan Cove, Waterford, Connecticut.)
CC, PZC, IWWC

-Advocate incorporation of best development practices early in proposed development design phase for conservation of vernal pool populations if development site contains

vernal pools. Refer to "*Spring 2000 Vernal Pool Inventory*", completed by the Middlesex County Soil and Water Conservation District, **Appendices S and T**; and the "*Habitat Management Guidelines for Vernal Pool Wildlife*", Wildlife Conservation Society/Metropolitan Conservation Alliance (WCS/MCA) Technical Paper No. 6, 2004, and "*Best Development Practices (BDPs): Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States*"; WCS/MCA Technical Paper No. 5, 2002; and see under Section II. "Assets" above.

CC, PZC, IWWC

-Advise the Harbor Management Agency, via correspondence, relative to impacts of development proposals that may present adverse impacts to the area in the Harbor Management Area, which encompasses the City's municipal jurisdiction on the tidally influenced waters of the Connecticut, Mattabesset, and Coginchaug Rivers.

HMA, AMP, CC

-Request Environmental Review Team (ERT) review on the pertinent development property and, if the property owner refuses access, an alternative ERT can be performed on the local drainage area with general comments on the impact of the development on the overall basin. ERTs are a group of environmental professionals drawn together from a variety of federal, state, regional, and local agencies to form multidisciplinary environmental teams to assist municipalities in review of sites proposed for development or preservation. The ERT program operates from a state grant, which for Middletown, is under the guidance of the King's Mark Resources Conservation & Development Area. Obtain application form from the Connecticut River Conservation District. The Mayor or the chairman of any of the agencies listed below can request the ERT.

CC, PZC, IWWC

-Contact the State Archeologist directly relative to possible archeological and historical remains on land proposed for development, or request Jim Sipperly, City Environmental Planner, to do so.

CC

-Monitor applications in the I-3 zone. Specifically review proposals with regard to applicant provision of stipulated buffer abutting Residentially-zoned land; impact to forest block, watershed, and streams which may be located in part in Study Area; and impacts to views.

CC, AMP, PZC, IWWC

-Monitor for proposed applications for location approval for telecommunications towers and act proactively for alternate locations. This issue is especially relevant for Maromas due to its topography, bird migration pathway, and potential for far-reaching visual impact should a tower facility be erected.

Communications towers, such as those that support TV and radio stations, and cell phone services, are responsible for the deaths of at least 5 million, and as many as 40 million, birds each year. More than 90% of these birds are neotropical migratory birds that migrate mostly at night. The Federal Communications Commission (FCC), the agency responsible for regulating interstate and international communications by radio,

television, wire, satellite and cable, has the information and ability to significantly reduce these unnecessary deaths, but thus far they have failed to act. Research the efforts of Audubon CT and National Audubon Society, who, together with other partners in conservation, are working to encourage the FCC to significantly and seriously address this problem by implementing a bird-saving program.

Telecommunication carriers approach private landowners of properties with targeted topography. The more public consciousness is raised in Maromas regarding the overall unique status of the area through various approaches (as enumerated in this report), the more receptive the residents will be to decline offers and to rally together to suggest alternative siting locations to the carrier applicant. Although currently the authority for location approval rests with the CT Siting Council (CSC), parties can attend CSC hearings and provide testimony regarding unique conditions warranting CSC consideration of alternative locations. Periodically, regulations regarding authority for siting change and changes should be monitored (e.g., until recently, municipal PZC permitted locational approval).

CC, AMP, MLT, MAS, CRWA, HMA, PZC

Adverse Actions

-File an intervention pleading, as provided for in CGS 22a-19, to become a party to the proceedings and have testimony entered into the record as an intervener on any eligible application that requires a hearing. The contested proposed development action must have, " ... or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." This legal action can be taken without counsel although counsel is recommended for a successful outcome.

MLT, MAS, CFE, AMP, CC, TNC, CRWA

-File an appeal within appeal period of application approval (15 days in most situations). This may entail approaching impacted neighbors to join in the appeal and defray expenses. To file an appeal, party has to own the subject property or be an abutting property owner (within 100 feet) or have intervener status under CGS 22a-19 relative to the development.

CFE, AMP, MLT, MAS, CC, TNC, CRWA

**D. PUBLIC OUTREACH, PROMOTION OF PUBLIC AWARENESS OF
MAROMAS' ASSETS, AND DEVELOPMENT OF A TOWN-WIDE
ENVIRONMENTAL ETHIC**

-Utilize the Referendum record and the 1999 Survey of residents to document local support for further open space acquisition.

CC, AMP

-Promote public education on the facts regarding correlation between increased real estate values for properties with abutting or nearby preserved open space land.

CC, MLT, AMP

-Promote public education on the facts regarding fiscal benefits to City regarding land acquired for preservation verses land developed for residential development.

CC, AMP

-Promote the concept of the "public trust" to foster the public's interest in all protection efforts that have an impact on the Connecticut River. Obtain and use the CRWC's "Connecticut River Fact Sheet".

CC, MAS, MLT, AMP, CRWA

-Promote awareness of the need for stewardship on private land regarding issues such as:

- eradication of invasive species
- best management practices for forest clearing with regard to water quality and forest nesting birds
- best management practices for horses with regard to water quality off-site
- best management practices for farming with regard to water quality
- best management practices for farming with regard to potential grassland birds habitat management
- best management practices for vernal pools
- habitat protection for imperiled species

AMP, CC, MLT, MAS

-Promote Forest Stewardship by private property owners by encouraging property owners to develop a Forest Stewardship Plan, which is a document developed jointly by the owner (of 10-acres or more) and a certified forester. The Plan includes information on plant species occurring in each plant community, their age, health, history, and how they are changing over time; where high quality wildlife habitats are and where opportunities exist to make habitat better; stream and wetland resources information, including vernal pools or fish habitats; unique plant communities, potential scenic vistas or trail sites, and timberland potential. See Appendix YY, "Preservation Mechanisms and Technical Assistance Programs for Farmland and Managed Forestland" under "Forest Stewardship Plan", and, see <http://www.canr.uconn.edu/ces/forest/steward.htm>.

CC, AMP, CFPA, UFC

-Work with the local realtors association to organize a conservation development seminar such as one recently co-sponsored by TNC,¹⁶ to cultivate knowledge and interest in methods of conservation development options, conservation design, and advocate the means to attract conservation buyers to the Maromas area. Conservation buyers include those looking for a "kingdom lot" (a large tract with or without an existing conservation easement), those looking to purchase a large tract and place a conservation easement on their new land for tax purposes, or a developer looking to develop a conservation subdivision or working farm conservation development. (See Qroe Farm, a development group, for an example of the latter).

CC, MAS, MLT, TNC, CFPA

-Encourage private property owners in Study Area to enroll in the City's Public Act 490 Land Classification Program as forestland, farmland, or open space -- if not currently enrolled -- by applying to the City Assessor for classification. As can be discerned from **Appendix II**, there are many property owners who have not taken advantage of this program which serves to preserve land from development by deferring taxes.

CC, AMP

-Outreach to Private Property owners with select Topic Area Programs. Host a workshop for owners of large tracts, key tracts, and tracts with identified focus natural resources -- regarding the bigger picture (relative to the ecological importance of their land) and land management techniques and availability of technical assistance programs, e.g., similar to the Dec. 4, 2003 workshop held by Rockfall Foundation, MLT, MAS and CFPA at deKoven House; and the Town of Cheshire's program held for owners of land over 25 acres in size within 200 feet of a water body where the topic was maintenance of water quality. Target property owners by letters of invitation.

AMP, CC, MLT, MAS, CFPA, TNC

-Host a program on vernal pools. Target property owners by letters of invitation. Include the IWWC members.

CC, AMP, MLT, MAS, CFPA, TNC

-Launch a Maromas P.R. Campaign, the purpose of which is to demonstrate that Maromas' residents care deeply about preserving Maromas, (e.g., Conversing with Bill Corvo and Geoff Colegrove, Midstate RPA, consultant learned they had never heard of "AMP", per se).

AMP

-Promote Maromas as "a chunk of Vermont". (See **Appendix A**, "Phase I Progress Report", under III, B., therein, completed by consultant, for more on this topic.)

CC, AMP

¹⁶ "Conservation Development Options: Finding a Balance That Works", a seminar sponsored by the Green Valley Institute and the Nature Conservancy, Norwich, CT, May 12, 2004.

-Utilize the "Value of Open Space" video the City completed in public education and awareness campaign.

CC, MLT, MAS, AMP

-Invite the public to a "Bioblitz Day". (See above under "B. Non-Regulatory/Policy Approaches" for details.)

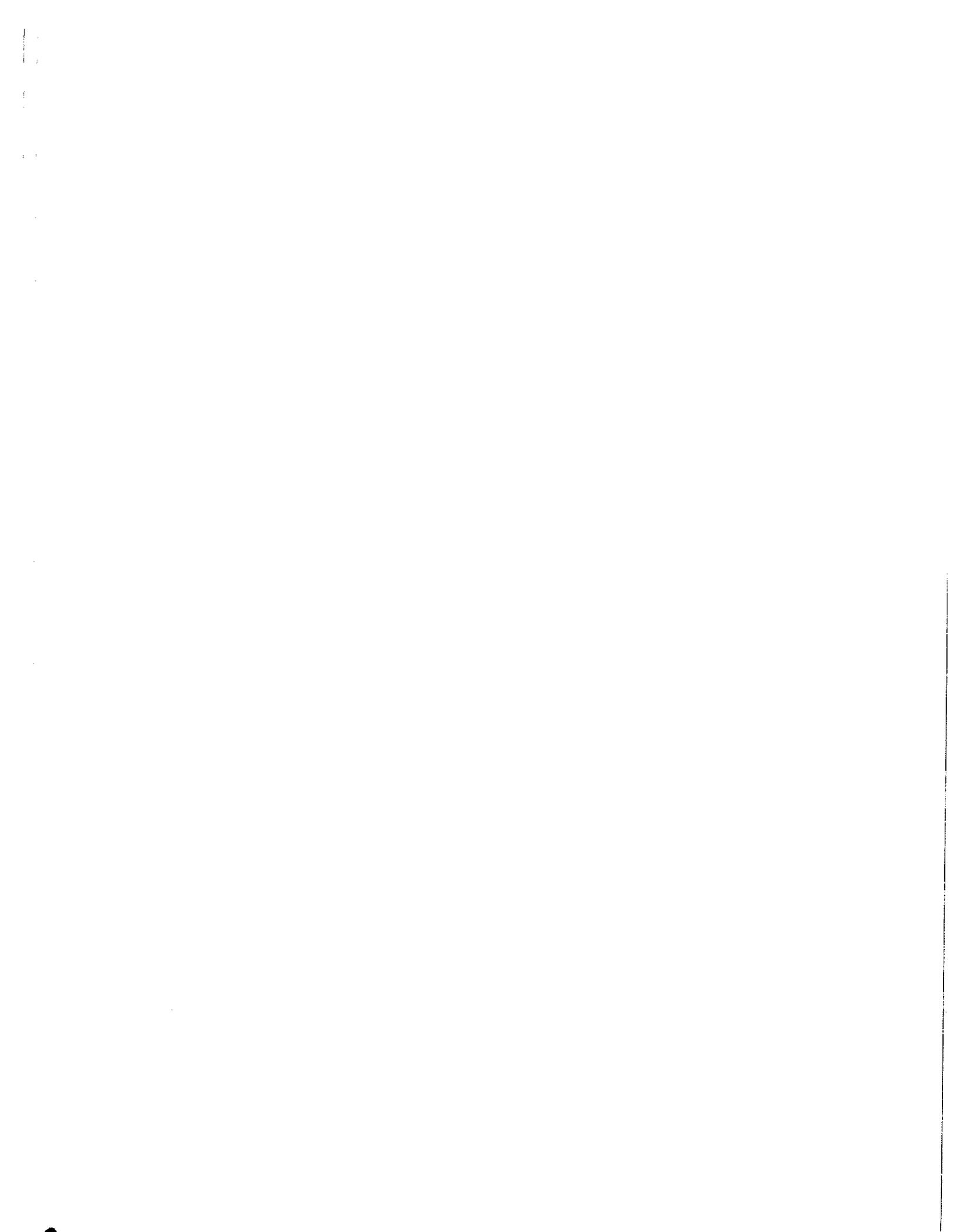
CC, MAS, MLT

-Promote anti-pollution efforts to help maintain environmental quality in Maromas. Institute a tool employed in several other municipalities wherein a flier is distributed, such as the Town of Westport's "Blow the Whistle on Pollution" flier (copy included as Appendix ZZ) which, in very simple terms, gives the different agency contact phone numbers for citizens to report oil & chemical spills, dumping in wetlands, discharges into streams, litter in parks, dumping on roads, septic systems leaks.

CC, MAS

-Distribute widely the Conservation Commission's "Middletown Trail Guide" as soon as it is published.

CC, AMP



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