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

APPENDICES

Prepared for Advocates for a Maromas Plan

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August 17, 2004

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

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Cover credits: Cover photo was taken by AMP member David Bauer between the twin CVH reservoirs.

Appendix A

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Memorandum

To: ADVOCATES FOR A MAROMAS PLAN
From: Erin O'Hare, AICP
Date: December 16, 2003
Re: Meeting on Phase One Progress Report and Selection of "Plan of Work" for Phase Two

The purpose of tonight's meeting is to review work done to date , to consider Plan of Work alternatives, and to select a Plan of Work –which entails work to be executed by both the Consultant and AMP.

The report below follows the format of the Contract: PHASE ONE: I. Resource Compilation: II. Resource Assessment; III. Report on Plan of Work Alternatives; and, IV Selection of Plan of Work.

PHASE ONE --PROGRESS REPORT

I. RESOURCE COMPILATION

Available data was compiled under Phase One of the Contract to inform the status of resource planning for the Maromas area. Data assists in determination of areas of possible work for Phase Two.

Data compiled between commencement of work, July 2003, to the present, is itemized below. Included are personal communications, resource documents and data as provided by AMP members, resource documents and data as obtained by consultant, and resource documents and data as reviewed by consultant but not obtained.

It is acknowledged that not all data gathered under Phase One will be pertinent or useful to Phase Two's Plan of Work, but has general interest value and may have application to AMP endeavors down the road. These documents will submitted for AMP's file at the close of the contract.

Individuals Contacted Regarding Resource Data

Julia Victoria, State of Connecticut DEP Wildlife Division
Patrick Comins, Audubon Connecticut
David Blatt, State of Connecticut DEP OLISP
Marcie Balint, State of Connecticut DEP OLISP, Middletown agent
Guy Russo, Director, City of Middletown Water & Sewer
Personnel, Engineering Dept
James Sipperly, Environmental Planner, City of Middletown
Bill Warner, City Planner, City of Middletown
Marie Norwood, Administrative Assistant, City Council
BillCorvo, Armetta
Geoffrey Colegrove, Executive Director, Midstate RPA
Karl Schlicker, GIS technician, Midstate RPA
Denise Rusicka, Director, State of Connecticut DEP Bureaus of Water Resources
Jeff Kaiola, State of Connecticut DEP, Stream Channel Encroachment Program
Curt Johnson, Senior Attorney, CFE
Roger Reynolds, Attorney, CFE
Patty Prendergast, Connecticut Forest & Park Association
David Titus, Ex-President, Mattebessett Audubon Society
Katherine Winslow, Staff, Middlesex Land Trust
Suzanne_____, President Mattebessett Audubon
Katchen Coley, Middletown Conservation Commission
Larry _____ Pratt &Whitney and AMP member
Tim Woolsey, State of Connecticut DEP Forester, Haddam Conservation Commission
Emory Gluck, State of Connecticut DEP Forestry Division, Cockaponset State Forest
Raoul diBrigard, Land Manager, Northeast Utilities
Dawn McKay, Biologist, Natural Diversity Database Program, State of Connecticut DEP
Several AMP members affiliated with Wesleyan University (regarding student work)

Documents
(Only new documents--those AMP obtained for consultant are not listed herein)

- "Priority Rating System for Selection of Open Space Parcels for Preservation Through Acquisition or Other Means", Conservation Commission, 9/13/1990, rev.10/1990, (copy from Sipperly)

- "State Listed Species in the Maromas Area of Middletown, CT", (chart), Natural Diversity Database Program, Environmental & Geographic Information Center, DEP, dated Dec 1, 2003.

- "Proposed Criteria for Evaluating Parcels", City of Middletown Conservation Commission, 3/33/00, revised, 3/7/00--(copy from Sipperly)

- *Harbor Management Plan-City of Middletown on the Connecticut River*; Middletown Harbor Improvement Agency, City of Middletown, CT; June 2003; Geoffrey Steadman, consultant, (copy from Sipperly)

- *CL&P and UI Joint Filing to CT Siting Council: 345kV Electric Transmission Line Between Scovill Rock Switching Station in Middletown and Norwalk Substation in Norwalk*, October 9, 2003, (copy from Sipperly)

- Resolution #12-03 Re: Water Development Projects Between City and Kleen Energy; passed by Common Council, 2/3/03

- Minutes of Special Common Council Meeting Workshop on Kleen Energy-Water Development; 2/3/03

- Ordinance No. 09-1.1. Modification of approved CT River Interceptor Sewer Service Area, (amended 11-13-2002), (copy obtained from CFE)

- Ordinance No. 09-02, "An Ordinance Appropriating $3,000,000 for the Acquisition of Land for Open Space and Other Recreational Purposes, etc."

- Minutes-PZC Special Meeting, 7/22/03 approved 8-24 for joint venture water supply project and for Phase 2B C.R.I.S.P.

- Historical Sketch of Maromas Section of the City, City of Middletown, Middlesex County, Connecticut; 1937; by Jessie M. Alsop (obtained from Midstate RPA)

- Natural Diversity Database map, State of CT DEP (dated May 2003-from City file)

- GIS maps (3 maps with at least 3 different data layers each), produced in collaboration with Midstate RPA

- NU submittal to City of Middletown, dated Novemeber10, 2003, regarding NU property disposition

- Watershed Boundaries:-copy-of City Engineering grid map with basin boundaries and names.

- CT River Sewer Interceptor Project, Middletown, Ct-Figure 3(L-3 Development Analysis Map)—with Bill Warner's drawing on same)

- Report of the I-3 industrial Zone Study Committee-January 31, 2001 (copy from Bill Warner)

- *Archeological Survey Data for Middletown, CT.*, (Chart), from *Archeology of Connecticut*, by Keenan

Other Resources Available (copies reviewed but not obtained)

"Topographic Maps of the City of Middletown", 1inch/100 feet

"Comprehensive Drainage Study", City of Middletown, by Purcell Associates, July 1982 (depicts topo, 1/100 and 100-yr flood, and "environmentally sensitive areas"(esa).

"Wetlands Analysis & Mapping", Final Report, Purcell Associates-some, not all wetlands, are depicted as esa and profiled herein as to soil type, function and some wildlife. Sipperly said only some have been field-checked.

"Water Utility Comprehensive Water Supply Plan"-CVH-1996 (at Midstate RPA)

Stream Channel Encroachment Line Maps for Middletown along CT River (currently unavailable in City Hall file: DEP has copy for a fee)

American Heritage River: The Connecticut River"; Connecticut Estuary Regional Planning Agency and Midstate Regional Planning Agency

*Documents listed in Consultant's "Requested Resource Document List", attachment to Contract, as collected by AMP prior to 9/11/03and provided to Consultant.

Recent Events of Note

2/3/03 - Common Council passes Resolution #12-03 Re: "Water Development Projects Between City and Kleen Energy"

8/13/03 - PZC hearing on "net lot" and "payment in lieu of open space".(submittal withdrawn)

8/27/03 - PZC Workshop with Randall Arendt, Conservation Design Planner

10/22/03 - PZC approved Special Exception to construct raw water storage tanks and treatment facility to include an access road at Kleen Energy

11/10/03 - Northeast Utilities submits letter and maps to City of Middletown Mayor, Planning Office and Conservation Commission regarding NU Property Disposition requesting feedback within 60 days.

12/1/03-City Council adopted Harbor Management Plan (with a stipulated list of edits to be completed asap by the consultant); effective Jan. 1, 2004

12/2/03 - City responds to above request indicating NU-designated properties of interest to the City and adding 7 additional properties of interest. Denise Bradley, Secretary, Planning Office is currently completing a descriptive profile of these properties.

12/4/03 - "Managing Open Space" Workshop, co-sponsored by The Rockfall Foundation and CFPA (Community Forestry, Public Recreation/Private Land by NU, Managing Land Trust Open Space by Middlesex Land Trust

12/15/03 - IWWC's Wetland Revision Committee is still discussing strengthening of regulations including an increase in the regulated area to 100 feet.

1/20/04 – DEP hearing on Aquifer Protection Regulations. Promulgation of. Aquifer Protection Regulations.

2/04 – CT Siting Council hearing on NU 345 kV Transmission Line application submittal

II. RESOURCE ASSESSMENT

Preparatory to developing an understanding for appropriate alternative work scenarios for the Plan of Work, the available resource data was assessed. The following is a partial outline of the research completed, presented by subject area, included to give AMP an idea of the breadth of data reviewed and current status:

The Maromas area itself

(see *Historical Sketch of Maromas Section of the City*, City of Middletown, Middlesex County, Connecticut; 1937; by Jessie M. Alsop)

Maromas in the context of the City of Middletown as a whole, and in the region (if applicable):

"Tree City USA"
Metacomet compact
American heritage designation
TNC designation,
Audubon designation as migration pathway
Eagles
(From City Park and Rec)*Middletown is one of Connecticut's largest municipalities in terms of its area, natural resources, and publicly accessible open space areas. Its 42.32 square miles include a range of development from a highly urbanized CBD through suburban settlements to rural prime farmland and completely undeveloped open spaces. Natural resources range from an eight-mile frontage on the Connecticut river on the east, along several smaller rivers and streams to the trap-rock ridges on the west. A portion of Connecticut's blue-blazed trails traverse Middletown and the City has proactively purchased over 3,500 acres to preserve as public open space in the past seven years at a*

cost of nearly six million dollars. The recreational opportunities offered by the rivers, the ridges, the farmlands, and trails are a major component of Middletown's fine quality of life.

natural resources inventory:

unfragmented forest –

important for wildlife
critical migratory path --See Comins testimony, Bolton Range corridor (jpg) –

See L. Bowers data
Bald Eagle habitat --Combination of unfragmented (untraveled) and river

NDDB (got from Sipperly) –need to call Murray about further info and update since may (–how often updated?)
Drainage basins—
how about a water resource chart for AMP -see USGS
Water Classifications

NEGATIVE FACTORS: deer, invasives

Geology-Can we make the case that Maromas's geology is a formidable constraint to any development---see Surficial Geo, etc

Historical/archeological resource inventory:
Jim Sipperly indicated the City has no historical/archeological data. Data collection is completed associated with a development application submittal on site by site basis if indicated.

Existing open space planning data

DPOCD has lots of data

Peterson Oil Co. parcel-Nov 3, City Council approved authorization of the Mayor
To sign agreement on behalf of the City with the State of CT under the Open Space and watershed Land Acquisition Program for financial assistance for the purchase.

Dart Island –people camp there unmanaged.

Farmland Protection Program-USDA-Kip, NRCS --City has 2 PDR applications in

Fabulous Marsh (as per Warner)—accessible from RxR tracks"
-Trail Guide by CC-due out Dec.-will only depict existing trails on Town-owned parcels-not Blue Trails—due to private property issues. Blue Trail –goes from River down Linear Corridor to Haddam.

Waterfront Park---2-acre acquisition using Open Space and Watershed Land Acquisition Grant Program funds-acquires an oil company property that sits between Harborpark and the City's sewerage treatment plant. Relocation of the 12-acre plant will allow expansion of the H. Park (check 12 vs. 2 issue)

American Heritage Rivers-designated whole river—"feds. have no $"

NDDB map-(Jim--check for data available and updates to

Urban Forestry Mgt Plan-(for Downtown.)

Potential open space properties

Bill says CC should complete a prioritization for all o.s. not just react to properties presented to buy.

City Golf Course—300 acre "gift" from the State-But due to Westfield Golf Course's 5-yr clause that City will not to have another G.C.

-City's bond rating is good because City does good job with econ. Dev. (will use Kleen Energy $ for acquisition)

-City not Distressed, now a target community.

"Linear Corridor-(check to see if present concept differs from 1993 OS Plan) Bill wants to get CL&P to preserve whole corridor they own as part of Linear Corridor concept

Farm Protection Program-USDA-PDR to 2 farms got.

CL&P have an agreement with City—disposition goes offer to City-to Land Trust –to private

- Middletown is a" targeted investment community" and therefore is subject to preferential standing with regard to award of open space and watershed land acquisition grants.

from: SB 5883---for dumped water co area or city o.s. in Maromas
The commissioner may make a grant under the protected open space and watershed land acquisition grant program to a distressed municipality or a targeted investment community, as defined in section 32-9p, for restoration or protection of natural features or habitats on open space already owned by the municipality, including, but not limited to, wetland or wildlife or plant habitat restoration or restoration of other sites to a more natural condition, or replacement of vegetation, provided the total amount of grants to such municipalities for such purposes may not exceed twenty per cent of the total amount of grants made in any fiscal year.

Ordinance No. 09-02, "An Ordinance Appropriating $3,000,000 for the Acquisition of Land for Open Space and Other Recreational Purposes, etc." cites two kinds of land indicated as eligible, as follows:

1) Document cites statute below, and so open space parcel to be acquired needs to be so indicated on an adopted POCD: **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., and

2) land for parks and other recreational purposes and their improvements (with no POCD or Recreation Plan stipulated)

Property ownership

RxR—CONNDOT owns RxR to P&W area then DEP owns rest—whole thing is inactive (Warner)
Peterson Oil Co. land to City

Watershed data

See CRISP local basin mapping

Maromas contains the following local watersheds (as per City map):

- Connecticut River Tributaries Basin (entirely within Maromas)
- Bible Rock Brook Basin
- Sumner Brook Basin
- Reservoir Brook Basin (entirely within Maromas)
- Indian Hill Brook Basin (entirely within Maromas)

Water supply data

-CVH has no official watershed maps—but Thomas Ford, Plant facility Engineer II, CVH gave Sipperly a sketch (which I found later in the WUC)
-Proposed Diversion-City will sell water to Kleen Energy now and later on to P&W.
-AQUIFER PROTECTION REGULATIONS
A public hearing was held on the land use regulations back in June of 2000. The regulations have been revised in response to the extensive public comment received. The revised regulations have now been submitted to the Attorney General for formal review, and we anticipate submitting them to the Legislative Regulations Review Committee on December 2. They'll hold a public hearing and formally consider the proposed regulations on January 20, 2004. They can accept them, reject them, or ask for changes. If all goes well, the regulations would be filed with the Secretary of State and published in the Law Journal in February.

Corinne R. Fitting, Environmental Analyst
DEP Water Management
79 Elm Street
Hartford, CT 06232(860) 424-3724

Existing land use

PZC Chair hated Draft 2000 POCD and refused to hold hearings, so it sat.

Kleen Energy-PILOT->$6 million/yr. with an additional $1 million to be give to City as soon as KE completes its financing. It's a "Taxing District" so City is allowed to earmark the $ for specific use, i.e. Riverfront Development, CL&P (land?).

RxR—CONNDOT owns RxR to P&W area then DEP owns rest—whole thing is inactive (Warner)

Ind. Zoned area-SW of that-In 1992 re-zone from residential to I-3—protests due to Hurd State park across River but Bill says only issue would be visual disturbance,.

its 300 acres of CVH land and its part of a 1999 public act could search at state web page

Bill said: ..NRG as an international company is in bankruptcy as is this plant....eventually it will be sold....3 turbines are gas fired...my guess it will either be shut down or converted to all gas to run more efficiently depends on who buys it out of bankruptcy.

Proposed land use

Joint-venture Diversion project:
4 permits involved: Army Corps, Structures and Dredging (for well installation)-OLISP; Stream Channel Encroachment lines; Diversion (see City's response to DEP review & most recent communication(Denise Ruzicka) 860-4243853

POCD

POCD in force is 1990 POD. Buckhurst & Fish's Draft POCD April 2002 was not adopted and will be shelved. Awaiting Warner's new POCD. Check used 1993 O.S. Plan map—Have CC comment on POCD that criteria be in there or amended.—check CVH land use.

Kleen Energy

The following synopsis is a blend of Warner and Corvo quotes: For his grandchildren, Armetta made sure the Plant will have "the cleanest plant emissions in the US." Much of the Kleen Energy 650-acre site has development constraints. It slopes steeply to the River so is unbuildable there. 250 acres of site is "development area" (aka former feldspar mining area). 137 acre Upper Campus was formerly mined. At David Titus's

suggestion the power plant location was moved to the most disturbed site, which happens to be in a depression which serves to mitigate visual impact. Plant stack ends up only 10 feet higher than NRG's stack. Federal security laws require fencing of 30 acre area for plant and switchyard. and gating of access road.

Feldspar spent $250,000 to stabilize area only to have it ripped up by mountain bikers. Currently, 60,000 cu. yds of siltation material runs from the upland into the CT River from Maromas and there is a visible silt trail in the River. River Road collapsed in areas due to silt causing water to pond up.

The exact location of an elective 50-acre open space setaside "preserve", with pond, offered for tax break reasons, has not been finalized. The general location is south of the access road, abutting Bow Lane, and includes the land formerly approved for a 3-lot subdivision. Exact location is contingent upon final cut and fill limits for the access road development and sol stabilization, "due to difficulty of the terrain." Due to erosion potential, access will be by permit. It has been decided that a management plan is not necessary but a forestry plan will be pursued. (Corvo was interested in my suggestion to use YSF for a study of reclamation and the forestry plan).

Originally Developer wanted to create a Consortium, under a non-profit organization status, to discuss the plan for the preserve (Sipperly),

2 laydown areas

"Linear Corridor"---Bill wants to get CL&P to preserve whole corridor they own as part of Linear Corridor concept.
"Laurel wetland—the strip wetland that is not in Linear but its ok due to undevelopable " PILOT >$6 million/yr with an additional $1 million if KE does its financing soon. Its in a Taxing District so City is allowed to earmark the $ for specific uses i.e. Riverfront Devel, CL&P .

- -Harbor Improvement Agency-"Water Improvement and Harbor Management Project Areas" by Geoff Staedman, 2000 (shows 2 NU properties-which is odd)-on web as pdf-won't print out
- Harbor Management Plan-City of Middletown on the Connecticut River; Middletown Harbor Improvement Agency, City of Middletown, CT; June 2003; Geoffrey Steadman, consultant
  -omitted mention and mapping of regulatory Stream Channel Encroachment Lines

approved by DEP March 5, 2003, and Army Corps; effective upon adoption by Council, Dec. 1, 2003

-"South Cove Waterfront Development" Final Conceptual Land Use Map, by Planimetrics-Bill said "Picking a developer soon"-TPA?

American Heritage Rivers-designated whole river—"feds. Have no $"

City Golf Course—300 acre "gift" from the State-But due to Westfield Golf Course's 5-yr clause that City will not to have another G.C.

NU Feldspar Property

I-3 Zone does not permit corporate office parks, but sewering has changed the possibilities—see Jan 1 Report.—recommends amending regs to allow this (so will this get into Summary POCD?)

Trail Guide-will depict only existing trails on town-owned land, NOT blue Trails.

CVH Reservoir Land-800 acres-source protection is an issue. Bill wants Cons. Easements to DEP over some of it, and made part of Cockaponset State Park, (but Bill did not quantify.) and add to that NU's Rocky Realty land (600-700 ac) as open space.(or was this addition to the Linear park concept not DEP) CVH "has no watershed map" but manager sketched one on map for Jim (he gave to me)

Long Lane Property-300acres-State gave to City—unknown planned use, as Westfield Golf Course has a agreement with City for 5 yrs no GC.

"CT River Interceptor Sewer Project, Middletown, Ct—Figure 3 "Development Analysis" map (Bill marked it up)(shows M. Trail)

City does good job on econ. Dev. and so helps bond rating. "distressed" designation changed to "Target Community"

P&W-present plant on lower plateau, had old Maromas Dock, was a granite mine.
Upper plateau is future devel.

CL&P have an agreement with City—disposition goes offer to City-to Land Trust –to private
CRISP study –compared Maromas/I-3/buildable Ind. zoned land
STPs-3 discharging here w/o tertiary treatment (CVH, old Middletown, P&W) so DEP happy to allocate $8 million to resolve issue in violation of State plan.
SSA-is official as per OPM. City petitioned OPM to modify the State Plan to allow SSA. April 21, 03 approved by "Legislative Committee on State Plan of P&D"
"Report of I-3 Ind Zoned Land"-endorsed by PZC.

Summary-Draft to PZC on Sept 25 Wed. PH after elections.
Summary will have the 1993 Open Space Plan. ((see for seven Fall State Park)
(Me: make sure long-range o.s. goal is in there.-"Goal for 2010 is to acquire 100 ac of open space and have an open space ratio /household of 0.25 (currently 0.22 (4,000 ac /18,000 households). Will state if land or trails are adjacent to the Corridor

Randall Arendt 3 weeks prior (see Minutes—report—local examples?)

RXR-ConnDOT owns to P&W, DEP from there south.(re: trails)

Diversion—new City water will sell to Kleen Energy now and to P&W later on.(???) According to Guy Russo, Director, City Water & Sewer Dept., diversion is part of the Water Supply Plan and provides an additional source of potable waster for 50 years in the future. Supply may be used to service Town Of Durham (Main Street has 2 superfund sites and 3 petroleum ruptures) and Town of Berlin (wholesale purchase agreement), for maromas and for rest of City.

Harbor Mgt Plan-Ordinance will establish a new Harbor Mgt Commission who will have jurisdiction **over whole river.** -omitted mention and mapping of regulatory Stream Channel Encroachment Lines

Future development

Corvo stated : *future development in Maromas is restricted to existing disturbed areas : Feldspar and portion of CL&P property that is ripped up, and redevelopment, such as NRG. NRG's demise is financial and environmentally based. Its not clean and not efficient. Competitive bid into the ISO Grid that control New England. NRG, Filthy Five or Sooty Six, is rated 770 megawatts and burns bunker oil and #4 fuel oil. NRG's 65-acre campus has value for revamped use for electrical dispatch use to existing switchyards there. NRG is in bankruptcy, but coming out og it and will sell its assets off. NRG originally designed as a coal-burning plant (it is possible to burn coal cleanly).*

Sewering -

CFE's effort

345 kV Transmission Line-"Middletown to Norwalk Project":

Proposed 345 kV line is located within the existing 345 kV line ROW that runs along Middletown's southern border and crosses the CT River here. . The area of AMP interest is a portion of "Segment 1", which is the 2.5 mile length of ROW 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.)

A synopsis of the proposal in Maromas is as follows: The proposal entails widening the legal ROW from existing 250 foot ROW to 335foot ROW and the clearing of additional vegetation within that ROW 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, blasting where needed. To achieve the width and alignment of ROW 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 ROW.

Data was compiled for the Project in an area much larger than the ROW and so the following 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 archeologic data as listed in Vol.1, Table 1
- Volume 4-Amphibian Breeding Survey
- Volume 2-Wetlands and Watercourses Description Report

Warner indicated Project was not an issue.

Zoning

Industrial zoning of Maromas is historic. 1964 was zoned for "Future Atomic Generating Plant and use above was Atomic generation at and CL&P (now P&W site); realistically, ownership determines zoning (me)-No sewer and water though

Randall Arendt 3 weeks prior(see Minutes—report—local examples?/??)

Other agency jurisdiction-

Legislative initiative to extend the CAM zone up the CT River—call David Blatt early Jan, to see if has legs.

Idea to strengthen through legislation the power of the CT River Assembly by amending CGS 477C, "Upper CT River Conservation Zone" (extends from MA/CT border to Haddam.)

Harbor Mgt Commission-Whole river is to managed under harbor Mgt Plan under jurisdiction of new Harbor Mgt Commission through the adoption of new Ordinance.

III. REPORT ON PLAN OF WORK ALTERNATIVES

Upon evaluation of the issues facing Maromas and assessment of the physical resource factors, the Consultant was to complete a preliminary report laying out several alternative scenarios for a Plan of Work keyed to grant objectives. Below are four proposed alternatives for AMP's review. Keep in mind that the alternatives not selected for the Contract work can be undertaken by AMP at a later date or by AMP members in their other civic roles.

Alternative Scenarios

A. Consultant to Provide Assistance Relative to Testimony/Correspondence

Consultant to provide assistance relative to AMP testimony and correspondence regarding issues of concern to AMP, such issues as those itemized below. Note: if date has passed since original preparation of this document, it is noted:

1) Assist AMP in preparation of testimony for public hearing on New POCD and /or testify. My review of the Conservation Commission 2002 testimony indicated the several items not included in CC critique for testimony that should have been and can be included in testimony on New POCD (to be released Jan. 2004 at the very earliest, as per Bill Warner, with hearing to follow). Issue of Warner's intent to include the 1993 Open Space Plan (map) with only revision to be a few parcels that have been recently acquired by City (I noted that Jim Sipperly surprised by Warner's statement to that effect). In particular, review the revised Open Space Map in New POCD and comment.

2) Assist AMP in preparation of testimony for City hearings regarding acquisition of land for open space and for recreation and assist in efforts relative to disposition of NU lands.

4) Assist AMP in preparation of testimony for NU 345 kV transmission line hearing anticipated to be held in February 2004. (I have reviewed NU application document).

5) Assist AMP in preparation of letter to Council regarding adoption of proposed Harbor Management Plan and adoption of Ordinance creating a new Harbor Mgt Commission (presently it is a Harbor Improvement Agency). **(date passed--The former was adopted Dec. 1, 2003, effective Jan. 1 2004.)**

6) Pursue and research the allocation of funds for the Taxing District funds collected from Kleen Energy relative to the PILOT, greater than $6 million/yr with an additional $1 million if Kleen Energy does its financing soon. Its in a Taxing District so City is allowed to earmark the funds for specific uses, i.e., Riverfront development, CL&P land. Investigate process, timeline, and prepare AMP letter regarding potential use of funds.

B. <u>Consultant to Work With AMP to Create Succinct Natural Resource-based Profile of Maromas</u>

Consultant would complete a natural resource-based profile of Maromas, i.e., "Portrait of Maromas", geared for the lay-reader to be used in the public awareness campaign laying groundwork for all future acquisition and protection and intervention endeavors. The centerpiece of this effort would be the promotion of the public relations platform "Maromas—Middletown's Chunk of Vermont", with the theme that this is unique and must be saved for the future to provide a legacy of a taste of wilderness for our grandchildren. Include return of the eagles theme. Include idea of CT River as extension of Maromas—viewshed as ours for free. Include CT River waters as public trust concept.

Envisioned as a small booklet with illustrations, such as photos, diagrams, maps. Areas of concern would be highlighted as well as action that can be taken to help preserve the qualities of the area.

C. <u>Consultant to Create Strategic Plan for Preservation/Protection of a Designated Area Within Maromas</u>

A strategic plan for the preservation/protection of an area of concern to AMP would be completed. Given the size of Maromas and the complexity of the many political and environmental issues involved, a selected area within Maromas is recommended for the focus of AMP's effort.

The focus area would be delineated based upon the assessment of issues and resource factors that was completed in Phase One of contract. The Strategic Plan for Preservation/Protection would delineate recommended Action Items for implementation by various responsible agencies/organizations (CFE, CRWA, TNC, MLT, MAS, CFPA, City of Middletown CC, Urban Forest Council, Harbor Improvement Agency, PZC, IWWC.).

The following is a sampling of possible Action Items for AMP to put forward. (Note; these action items have applicability through the City and can be warehoused for later use in different arenas.):

1) CC to nominate Greenways for designation under State of CT Greenways Program(potential greenways to be determined - probably Blue Trail, CT River, possibly other rivers). (Currently, there are no State of CT designated Greenways none in the City or along the CT River—as per Leslie Lewis, DEP Greenways Program.)

2) CC to get IWWC and PZC to impose conservation restrictions as part of application approvals.

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

4) AMP to push for extention of Gateway Commission area northward up the CT River. The existing CT River Assembly (CRA) is a much weaker version of the Gateway. David Blatt, Attorney, DEP OLISP, is currently working with the CRA and the Capitol Region Conference of Governments (CRCOG) to host a similar "River Forum" series upstream that was held recently in Gateway area. He hopes that it will lead to a revitalized and strengthened CRA.

5) AMP and CC to push for implementation of ridgetop protection for Maromas (as spelled out in Buckhurst *POCD* and in the "*Lamentation Mountain Tri-Town Plan*" and in Metacomet Ridge Compact (signed by the City of Middletown and 15 other communities in 1996).

6) AMP and/or CC to host 24 hour-Bioblitz - a marathon cataloguing of biota in a municipality. To my knowledge, 5 communities have held a Bioblitz event to date in CT. Its value lies in the new biological data collected and in the biodiversity education value to the public. Some towns have elected to actively involve the public in the event.

7) CC to adopt criteria for prioritizing open space in general. (Current criteria-see Documents obtained-- are not up to standard.)

8) AMP to launch a PR 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, I learned they had never heard of AMP)-

9) Action items that address stewardship issues.

10) Action items addressing the "Harmonious Plan" for Maromas (as requested by DEP in the CRISP issue) - that integrates POCD, zoning, the State of CT Plan of Conservation and Development.

11) Promotion of the various methods of agricultural lands preservation for the 2 farms in Maromas (if they fall within designated area).

12) . Action items to address the following if applicable to the selected area:

- State of CT Cockaponset Forest Management Plan (includes burning)
- State Fisheries ? stocking, ladders & CT River
- Natural Diversity Database
- Migratory Path along Maromas (as per Patrick Comins, Audubon CT)
- Mattebessett Trail- protection of trail on private property and National Scenic Trail proposal.

13) CC to work with Haddam's CC on its new Natural Resources Inventory relative to connectivity of future open space and trails.

14) Advocate a native specimen tree survey be conducted by CC or Urban Forestry Council. 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 interest in addition to advocacy for preservation of the specimen trees. Schools could get involved. Improvement of the City's policy/ordinance on Right of Way maintenance relative to tree preservation would be stipulated.

15) Outreach to Private Property owners- AMP to host a workshop for owners of large tracts, key tracts, and tracts with water resources-- regarding the bigger picture (relative to the ecological importance of their land) and land management techniques and availability of technical assistance programs (similar to the Dec. 4,2003 workshop held by Rockfall Foundation and CFPA at deKoven House.)

16) Institute a "Certificate of Natural Heritage Program" under the auspices of CC for private property owners natural resource feature of distinction on their land. The certificate instills pride and recognition of the habitat's value and thereby contributes to the likelihood of preservation by the land owner.

17) Action items (to be formulated) that address the following for Maromas: zoning, regulatory layers, the City's proposed Phase II stormwater management program (in compliance with EPA directive).

D. <u>Consultant to Complete Environmental Impact/Watershed–based Plan Focusing on Key Properties</u>

Present to AMP an environmental impact/watershed-based for Maromas that can be used by AMP to facilitate its responses to particular development proposals and, secondarily, can be used by AMP to work pro-actively with owners of private property of ecological significance.

The two subjects of the Plan are as follows:

1). <u>Properties which are the subject of possible Development/Land Use Activity Scenarios in the works for Maromas:</u>

A synopsis of proposed development plans and possible development scenarios will be presented along with possible environmental impact from them and proactive approaches to influence outcome (i.e., conservation easements, low impact stormwater BMPs, erosion and sedimentation control BMPs, programs AMP can access/advocate for technical assistance—such as Environmental Review Team, etc.). Summarize, with

maps, with emphasis on water resources in area, and local basins, and importance of water quality to CT River and biota. Biological data would be addressed.

Development issues to be addressed include:

- Reservoir disposition
- Sewer Service Area
- City's 300-acre former CVH property (possible golf course development use)
- Kleen Energy's 50-acre set-aside
- Proposal for upgrade of existing 345 kV transmission line within existing ROW (February 2004 Hearing)
- City's Stormwater Phase II Plan for area
- New City park at old electric plant site
- NRG plans
- Joint diversion issue (City/Kleen Energy)
- National Scenic Trail Designation for Mattebessett Trail
- Harbor Management Plan (adopted December 2003)

2) Large tracts of privately-held land, especially those parcels with water resources and/or ecological significance:

A list of key subject properties will be compiled from analysis of resource data with emphasis on water resources. A synopsis of possible land use activities (including possible land development) and possible environmental impacts that could be expected to result from them will be presented along with proactive approaches to influence outcome (i.e., conservation easements, low impact stormwater BMPs, erosion and sedimentation control BMPs, etc.). Areas of concern will be presented on a map with local drainage basins delineated and water resources highlighted. Summary of the study will emphasize the relationship between upland land use activities and the water quality to Connecticut River.

This portion of the Plan will advocate outreach to private property owners. The Plan will include an outline for a workshop for owners of large tracts, key tracts, and tracts with water resources to be hosted by AMP. The Workshop will address the bigger picture (relative to the ecological importance of these properties), resources located on or near the properties, land management techniques, and availability of technical assistance programs geared to the private property owner of conservation land.

IV. SELECTION OF PLAN OF WORK

Factors influencing selection of a Plan of Work

- AMP objectives and message are met in final work product.
- Satisfaction of Grant requirements (Rivers Alliance grant and New England Grassroots grant), "Does it meet stipulated requirements?"

- Timeliness of final work product to Middletown, "Is this the best Plan for use by AMP in Middletown in 2004?"

- Utility and effectiveness of final work product, "Will it make a difference?"

- Feasibility of execution/implementation of final work product by AMP members. The Plan should not sit on a shelf. "Does AMP have the manpower, skills, structure, and commitment to execute the preferred Plan?"

- Budget constraints (see below). "How will AMP best use the $2,000 remaining grant monies?"

- Complimentary implementation/execution of Plan by AMP, "What is the best way to implement the preferred Plan?"

Budget considerations

Plan of Work must be feasible within the Contract budget. A considerable amount of Consultant time was spent reviewing resource materials and current policy status vis a vis Maromas. This task was complicated by the changing status of events and by the difficulty presented by "obscured" data and uncooperative sources. (Approximately $_____ contract monies remain for completion of the Plan of Work.)

Keep in mind that the funds do have to be expended by AMP with a certain time frame to meet the terms of the grant. That portion of the grant money that was retained for use by AMP, $2,000, could be utilized for implementation of these work products by AMP, for AMP's expenses (such as reproduction costs if needed) relative to the plan of work chosen, or could be used to augment the Contract.

AMP's work

In selecting a Plan of Work, AMP must make a commitment to the disposition of the $2,000 remainder (see above.) Margaret Miner has indicated to Chris Joyell that public participation and public education are important grant components. Which ever Alternative for Plan of Work is selected, AMP needs to formulate an action plan for AMP to implement/execute the Plan of Work. This action plan must include the public participation and public education components stipulated.

Erin O'Hare, AICP
Land Use Planning
510 Great Hill Road, Guilford, Connecticut 06437
203-457-1444 fax 203-457-9768
erinplan@aol.com

MEMORANDUM

To: Chris Joyell, Linda Bowers
From: Erin O'Hare
Date: 7/29/04
Re: Draft Phase II Work

This memo accompanies the Draft of Phase II Work.

The description of the work chosen by AMP in December and commentary of AMP members to refine the task forwarded in May is included below for their usefulness in today's discussion regarding the scope of work, members' perception of the nature of the assignment, and possible minor modifications to the work done to best suit AMP's current needs.

Given the limits of the contract, it was not possible to complete a thorough assessment of the Study Area relative to its natural resource assets and establishment of appropriate preservation priorities, but it is hoped the work completed will afford a useful frame of reference for future AMP endeavors to preserve key areas of Maromas.

AMP SELECTED OPTION "C" FOR PHASE II WORK

Below is Option "C" as it was presented to AMP December, 2003 and later selected by AMP as the most appropriate scheme for Phase II work under the contract.

C. Consultant to Create Strategic Plan for Preservation/Protection of a Designated Area Within Maromas

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A

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E-MAIL COMMENTS FROM AMP MEMBERS AS TO THE PHASE II WORK ASSIGNMENT

These comments were forwarded by several AMP members in May. Comments appear below separated out for discussion purposes:

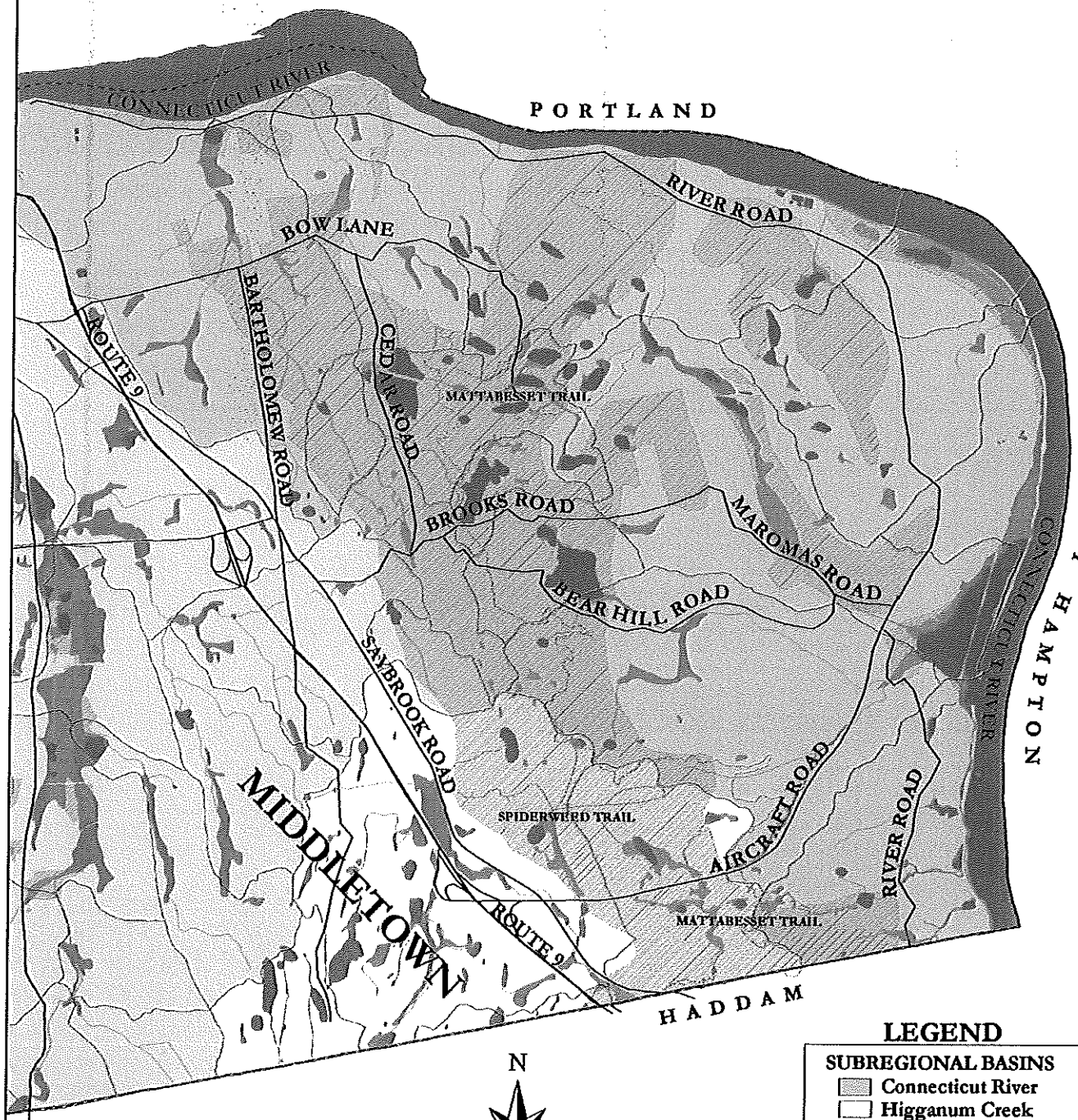
- The proposal would be for Erin to develop a land protection plan for Maromas, excluding the I-3 zone, which is being addressed by CFE.
- Erin would then prioritize parcels within the remaining 2-3000 acres of Maromas' residentially-zoned land.
- This report would prove invaluable to land protection agencies and groups like the Middletown Conservation Commission, Middlesex Land Trust, and Trust for Public Land.
- As a by-product of Erin's work, we would also have plenty of information to craft a public-awareness campaign promoting the values of Maromas. I'm envisioning something like a trail guide pamphlet.
- Which Areas most suitable for preservation and therefore acquisition, But would want to know why parcel A is superior to Parcel B.
- And Lew thinks a brief description of other areas that were not on the priority list.
- Regarding "criteria for acquisition", I would think the State Guidelines for the Acquisition of Open Space could be used as a blueprint.
- Does Erin know of some of which she thinks highly??
- I think that the land protection does include looking at all the natural resources and various means of protection, not just acquisition.
- I don't think that Middletown needs acquisition criteria because both the Conservation Commission and the Land Trust have a set that they each work with. I would be looking for more cutting edge techniques. Perhaps we will end up doing a "right placement analysis" to see which organization or technique is best suited in each situation to make the protection happen. Example:. LT for acquisition, IWWA and P+Z for overlay district, etc.

A

Appendix B

(Large version accompanies report)

Maromas: Water Resources, Local and Subregional Drainage Basins, Committed Open Space, and Trails



N
W E
S

1000 0 1000 2000 3000 4000 5000 Feet

(Scale = 1in : 1000ft)

MIDSTATE REGIONAL PLANNING AGENCY
100 DeKoven Drive, Middletown, CT 06457

LEGEND

SUBREGIONAL BASINS
- Connecticut River
- Higganum Creek
- Sumner Brook

- Local Basins
- Hiking Trails
- Water Bodies, CT River
- Streams
- Wetlands
- Open Space

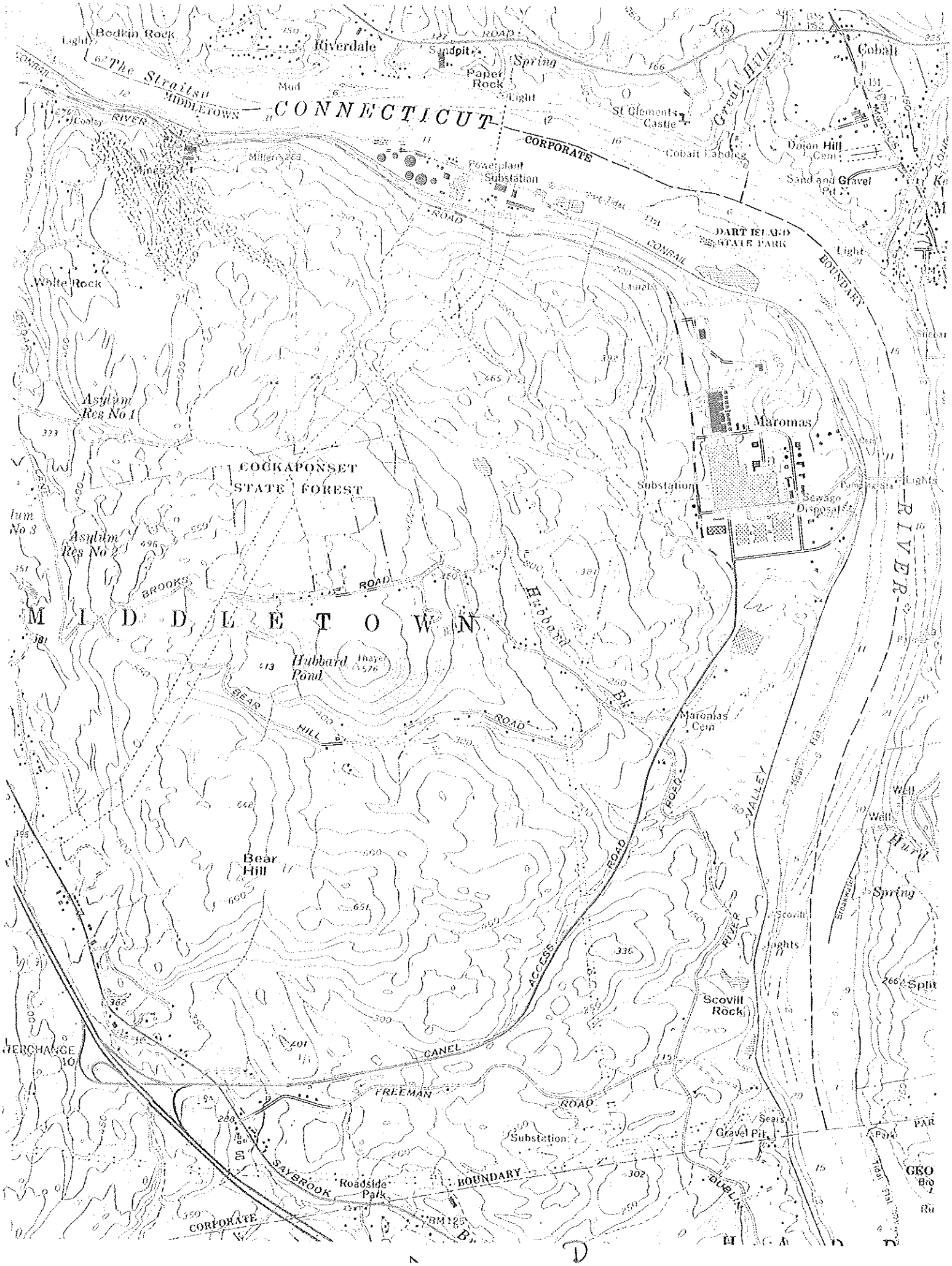
Created: Aug. 5, 2004
Open Space last updated summer 2002

B

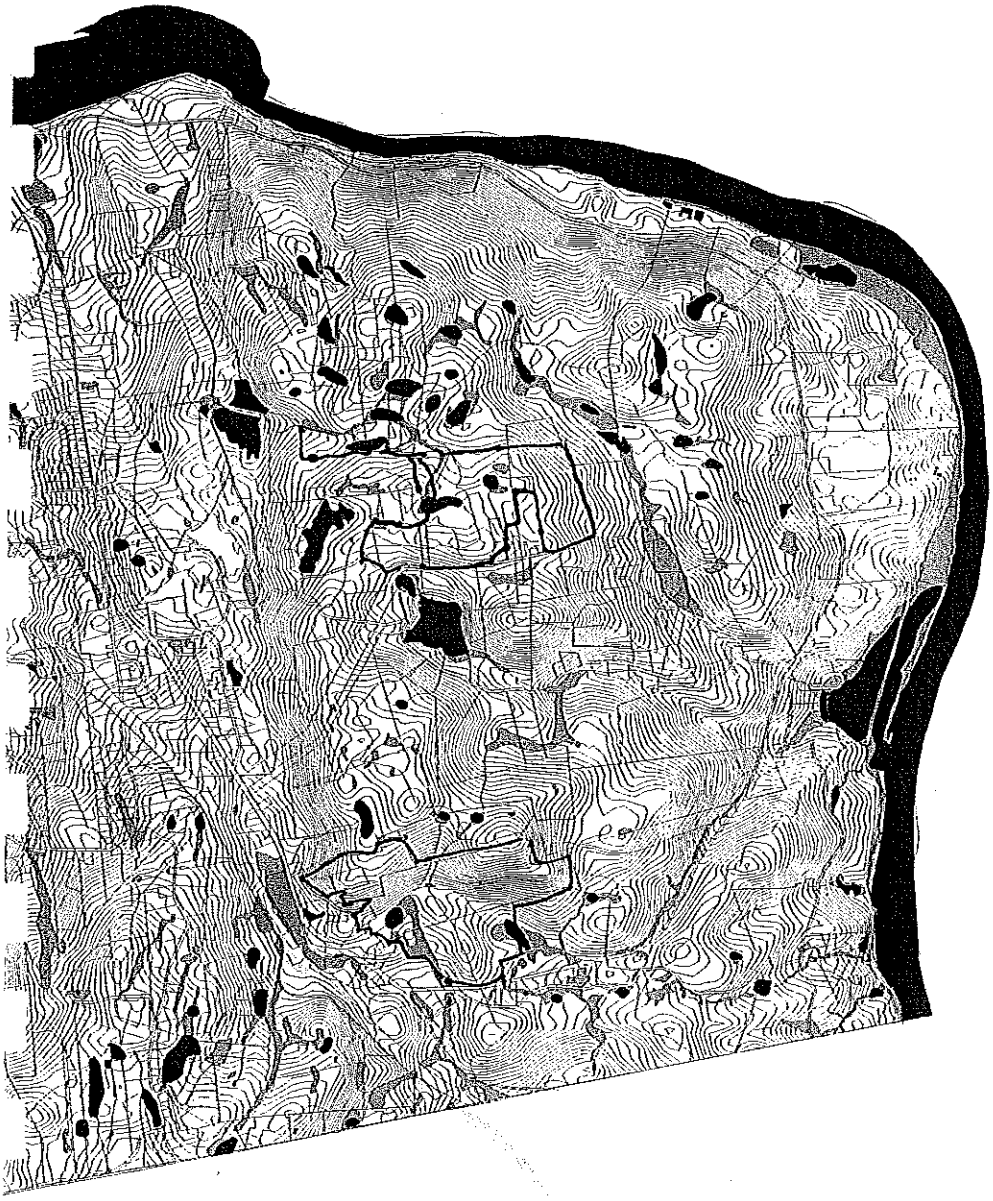
Appendix C

(full-size map accompanies report)

Appendix D


Bodkin Rock
Light
Riverdale
Sandpit
Spring
Paper Rock
Light
The Straits
Mud
MIDDLETOWN
CONNECTICUT
Cobalt
Great Hill
St Clements Castle
Cobalt Laboratory
Union Hill Cem
Sand and Gravel Pit
Powerplant
Substation
CORPORATE
ROAD
DART ISLAND STATE PARK
CONRAIL
BOUNDARY
Light
White Rock
Asylum Res No 1
COCKAPONSET STATE FOREST
Maromas
Substation
Sewage Disposal
Lights
Asylum Res No 2
BROOKS
ROAD
MIDDLETOWN
Hubbard
Hubbard Pond
Maromas Cem
BEAR HILL ROAD
Bear Hill
VALLEY ROAD
Well
Spring
Scovill Rock
Lights
Split
ACCESS ROAD
CANEL
FREEMAN ROAD
Substation
Gravel Pit
Sears
SAYBROOK
Roadside Park
BOUNDARY
CORPORATE
DILBLA
GEO

Appendix D (2)



"Draft Topographical Map of Naromas With Wetlands and Waterbodies and Some Committed Open Space"; Midstate RPA, 10/30/03

Appendix E

3

Rev. 12/29/00
10/10/00

Fall 2000
Maromas Natural Resource Values

A. Forestry

- Northeast Utilities has managed their parcels for many years. Periodic logging has occurred.

Information need: What is the forest managed for, is it for timber value or for wildlife value?

- Analysis by the The Nature Conservancy shows that the Maromas section contains two of the largest unfragmented forest block along the lower Connecticut River Each is 1000-2500 acres and prevent from being a truly large unfragmented block by Bear Hill and Brooks Rds. This area represents a unique environmental asset in an urban setting. Unfragmented forests are a highly valued resource as habitat for a variety of flora and fauna.
- Reclamation the feldspar mine area is important as a grassland for birds and butterflies
- Mountain Laurel abounds in this part of town. Hiking the Blue Blaze trail is one of the best ways to see it.

B. Fisheries

- Anadromous fish are found in the Connecticut River. These are species considered rare, endangered or threatened. Erosion, sedimentation and polluted runoff from potential development in Maromas is a serious threat to the water quality that supports fish in the river.
- There is a large freshwater? tidal wetland in the southern section of Maromas. These environments are valuable as a fish nursery. Polluted runoff could ruin this wetland habitat.
- Recreational fishing is occurring in the CVH Reservoirs along Cedar Lane.

C. Wildlife Value

- significant wildlife habitat due to the unfragmentation of the forest block. Enhanced by the inclusion of the grasslands. Maromas includes many rocky outcrops, streams, wetlands and vernal pools. The variety of habitats supports a diverse wildlife population.
- Documentation of the wildlife exists through hunters, birders, vernal pool study. Hundreds of bird species have been counted in spring, summer and winter.
- Otter, muskrat, coyote, fox , weasel and deer have been seen.
- High quality natural community example in an urban area, others in state are already protected
- Left intact site has potential to support populations of over 100 species of birds

D. Existing Drinking Water Supply

- Class I, II lands and CVH Reservoirs

Information need: Level A mapping for River Rd. Wellfield recharge area

E. Water Quality

- If developed, water quality in tributaries/ reservoir and CT river will deteriorate due to runoff from parking lots, etc.
- Area is extremely steep, highly erodable
- Pollution will affect vernal pools and anadromous fish and freshwater tidal marsh

F. Scenic Value

- High scenic value for views from Route 9 into Maromas
- High scenic value for Blue Blaze trail use
- High scenic value for views from the Connecticut River and State parks in East Hampton and Haddam
- High scenic value for town road users

Information need: photos and videos of scenes in Maromas

G. Rare/Endangered plants and animals

- Rattlesnake plantain
- Hognose snakes
- nesting hooded warblers, grouse, sawhet owls, red shouldered owls
- home to other rare species as per natural diversity database at DEP
- CT River and riverbank home to rare species
- vernal pools - Jefferson salamandars, blue spotted salamandar found dead along roadside

H. Recreational Value

- Passive recreation - dog walking, hiking, mountain biking(highly prized for technical difficulty, about 40-6(visitor/ day on a weekday and 60-100 on weekends), birdwatching
- Hunting in wildlife management area
- Fishing
- Has adequate access and parking in various location
- adds to trails at Cockaponsett State Forest and wildlife management area
- Historic/ archaeological/ cultural value

I. Open Space Value

- Augments Cockaponsett State Forest
- adjoins watershed lands
- in green belt anchored by Spiderweed and feldspar quarry
- importance of Blue Blaze trails for variety of uses
- potential connection of trail to CT River
- wildlife habitat for variety of fauna, migratory birds, amphibians and mammals
- buffer protection for Ct River and tributaries
- buffer for CVH Reservoirs.

J. Other Considerations

- High urgency due to extension of sewers and probable sale of NU lands
- geologic features - white rocks quarry and Collins Hills formation of pegmatite. Rare exposure of Lower Till at River Rd.

K. Management Needs

- Exotic, invasives present
- past and potential erosion
- accommodating passive recreation as well as hunting, mountain biking, ATVs
- illegal camping

L. Acquisition Issues

- High cost
- Potential landowner readiness to sell or donate
- could leverage permanent protection of reservoirs
- Potential environmental hazards
- disturbance history

Appendix F

Title: The Position of the Mattabeseck Audubon Society with regards to the Future Development and Preservation of the natural resources of the Maromas.

Biome: Forested Uplands; flood plain; swamp.

Reviewed by: Mattabeseck Audubon Society.

Introduction.

In October 2000 a special I-3 Industrial Zone study committee was established to examine the future of the Maromas. Previous decisions with regards to the future development of the Maromas are as follows:

In May of 1992 the Middletown Planning and Zoning Commission rezoned 400 acres owned by Northeast Utilities in the Maromas section of Middletown from Rural Residential (R-60) to Special Industrial (I-3). Buildings up to 150 feet tall would be allowed in the Industrial zone. Since the zone change also inadvertently applied to sensitive land directly adjacent to the Connecticut River and the southern boundary of property owned by United Technologies Pratt & Whitney Aircraft, Northeast Utilities petitioned the Middletown Planning and Zoning Commission to rezone the river frontage from I-3 to Riverfront Recreation (RF). This petition was approved October 14, 1992. Thus, the entire Maromas riverfront is now zoned Riverfront Recreation including land owned by United Technologies Pratt & Whitney Aircraft.

This land along the river is also designated as the Connecticut River Assembly Preservation Area. The boundary begins at the center line of the Mattabassett River at its junction with RT. 72. It then proceeds south along the center line of the Mattabassett River to where it joins the Conrail track near RT. 9. From this point it goes south along the center line of the Conrail track to where it meets the center line of Northeast Utilities R.O.W. which crosses the Connecticut River near Bodkin Rock. It then proceeds south 200 feet from the center line of the railroad, then easterly and southerly parallel to the Haddam town line.

The significance of the Connecticut River Assembly Preservation Area is to allow for an overview by the Connecticut River Assembly, a Governor-appointed local advisory board, of any development plans that would affect the integrity of the Connecticut River green belt.

The Natural Characteristics of The Maromas.

From 450 to 250 million years ago, during the Paleozoic Era, several crustal plates, including Africa and Eurasia, collided with the North American plate to create the Appalachian Mountains and the supercontinent Pangea. During this collision, Avalonia, a small continent believed to have been part of the African plate, was thrust against the continent of Proto-North America, closing and collapsing the intervening Iapetos Ocean. The collision deformed and metamorphosed both the continental rocks of Proto-North America and Avalonia and the oceanic rocks and sediments of the Iapetos Ocean floor.[1] This process created the schists, gneisses, and granites exposed in the Maromas. The Maromas lies in what geologists refer to as the Eastern Uplands, Iapetos (oceanic) Terrane, ; Bronson Hill Anticlinorium. Anticlinorium refers to the domelike upward warping and folding of the rocks.

[1] The Connecticut Geological & Natural History Survey, Department of Environmental Protection, 1990

Of particular significance is the coarse-grained intrusive igneous rock, Pegmatite, a compound of feldspar, quartz, and micas.

Soils above bedrock were formed primarily by the glaciers, mainly from material that weathered from the gneiss, schist, and granite. There are considerable pockets of organic soil within the Maromas. A section of outwash terrace lies adjacent to the Connecticut River. Alluvial soils are formed in long strips along the river.

Hubbard Brook and other unnamed streams drain into a large swamp that defines the Maromas's southeastern edge. The Maromas reaches to a height of 648 feet above mean sea level near Bear Hill. The upland terrain is primarily wooded, dominated by Red, Black, Chestnut, and White oak, Black birch, American beech, Sugar maple, and Red maple in the wetter pockets. Dominant understory is Witchhazel, Dogwood, Mountain laurel, Viburnum, and High and Low bush blueberry. Vernal pools are interspersed throughout. The dominant trees along the Connecticut River are Silver maple, Eastern cottonwood, and Sycamore. The Maromas is habitat for numerous species of mammals, birds, reptiles, and amphibians including:

The Bald Eagle, a Connecticut-listed endangered species that uses the large trees along the river for winter perching. An individual was observed resting on a pier of the United Technologies Pratt & Whitney dock during one winter census.

The Northern Harrier, a raptor on the endangered species list in Connecticut that hunts in the swamp and low lying areas adjacent to it.

The Northern Parula, a song bird on the Connecticut species of special concern list that feeds in the canopies of flowering trees during spring migration.

The non-venomous Eastern Hognose snake, a species of special concern in Connecticut that breeds in the uplands.

The Box turtle, a species of special concern in Connecticut and a victim of illegal wildlife trade.

Notable among the more than 40 species of birds known to breed within the Maromas are: the Virginia Rail, the Hooded Warbler, and the Pileated Woodpecker.

Conclusions.

The biological diversity of the Maromas is being examined but has not yet been fully explored, including the flood plain areas belonging to United Technologies Pratt & Whitney Aircraft. The natural resources that have been quantified show the area to have excellent potential as a biological storehouse with varied and superb wildlife habitat. The uplands and the flood plain adjacent to the Connecticut River are important water bearing and holding areas, groundwater aquifers vital to health and security. The swamp adjacent to the river has important flood water holding capabilities. The uplands of the Maromas and its riparian habitat afford impressive scenic vistas and have great scenic values, especially important in that much of Northeast Utitilities and United Technologies Pratt & Whitney Aircraft property is visible to visitors of Hurd State Park, situated on the opposite side of the river. The Maromas is one of the largest wooded tracts on the western side of the lower Connecticut River, a signature parcel within the watershed of the Silvio O. Conte Connecticut River National Wildlife Refuge, and a bold pillar complementing the lower river's designation as a Wetland of International Significance (under the Ramsar Convention).

3.

The Riverfront Recreation designation for the Maromas boundary with the Connecticut River is problematical because of the allowed uses in the RF zone:

1. Any non-residential use may be proposed and such proposed development shall be considered as a Special Exception following the procedures of Zoning Code Section 44. (Middletown Planning and Zoning codes page 97).

Other uses specifically allowed in the RF zone include:

1. Utility buildings and structures.
2. Restaurants.
3. Marinas, boatyards for the building, storage, repair, sale, or rental of boats; docks, wharfs, piers for the storage and transport of goods, merchandise and/or people.

Since the Connecticut River Assembly is solely a local advisory body with no regulatory powers, they can review proposals affecting ten acres or more within the river preservation area, but cannot pass binding judgments upon those proposals.

Intense development may cause the ecosystem of the Maromas to spiral into disequilibrium. The threshold response of a system forced into disequilibrium might include erosion, cutting and filling of streams, and severe hydraulic pattern change. Habitat disturbance will reduce the amount and variety of wildlife. Scenic vistas, so vital to tourism, will be adversely compromised.

-Recommendations.

In order to preserve the natural characteristics of the Maromas, including riverfront property owned by Northeast Utilities and United Technologies Pratt & Whitney Aircraft, the Mattabeseck Audubon Society suggests that a Habitat Conservation Plan (HCP) be implemented. One of the keystones of this HCP would be the low-lying area adjacent to the Connecticut River, running north from Scovill Rock to the juncture of land owned by United Technologies Pratt & Whitney Aircraft and Northeast Utilities, just south of the site of the Northeast Utilities powerplant. This keystone parcel would include the entire swamp on both sides of the railroad right of way in the southeast portion of the Maromas. The swamp would have a buffer zone which would include all of the previously I-3 zoned land south of Aircraft Road. This parcel could be protected through a conservation easement where development would be restricted. Present uses of the land that include sustainable forestry, permitted hunting, and tourist attractions such as hiking and biking would be allowed.

Other keystone parcels include land surrounding the blue-blazed Mattabesett Trail and the NU-Maromas Cooperative Area totaling 1400 acres that is presently leased to the State of Connecticut for the purpose of hunting.

An important element of the HCP is to properly catalogue the natural diversity of the Maromas. When this data is in hand, further recommendations may be made as to the conditions and terms of conservation easements. Funds already appropriated for open space by the city of Middletown may be used to buy select parcels. Land acquisition funds from the State of Connecticut may be used to purchase the parcels of land within the NU-Maromas Cooperative area for inclusion into the existing Cockaponset Forest Preserve within the Maromas, or the State may enter into a long term lease to protect the habitat.

Another aspect of the HCP allows for the altering of some habitat for development. The habitat most suitable for development in the Maromas is in the area of the abandoned feldspar quarries. The developer would put an amount of money, negotiated previous to alteration, into escrow for every acre developed. The money would then be used to protect sensitive habitat elsewhere in the Maromas.

4.

A Habitat Conservation Plan is the best option available to protect the Maromas while still allowing some development to proceed. The HCP should be put in place before any infrastructure funds are dedicated to the area. This will ensure that science, not economics or politics, determines the future of the Maromas.

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Appendix G

Excellent Summary

MAINE AUDUBON SOCIETY SPRING 2000

CONSERVING WILDLIFE

in Maine's Developing Landscape

SOUTHERN MAINE'S POPULATION IS GROWING. More importantly, people are moving away from town centers and cities into rural areas. A 1997 State Planning Office study reports that the fastest growing areas in Maine are 10 to 25 miles from metropolitan areas. Two- to ten-acre house lots in fields and forests are common. As people move into these areas, new and wider roads follow and additional services are needed such as sewers, water, and convenience stores. As a result, habitat for some species of wildlife is becoming increasingly fragmented and lost. According to a study by Witham and Hunter (1992), southern Maine and New Hampshire forest area decreased by 7%, agriculture by 9%, and non-forested upland by 12%, while rural residential area increased by 23% and urban/industrial by 4% in a twenty-year period from the mid 1960s to the mid 1980s. When habitat is altered, the numbers and types of wildlife present on the landscape can change dramatically.

Maine Audubon Society believes we should strive to maintain healthy populations of all our native wildlife species and the habitat or plant communities upon which they depend. We recognize that change is inevitable, but believe the land use decisions we make now can minimize impacts to wildlife as development of the rural landscape continues across Maine. With thoughtful planning and management of both developed and open space, people and wildlife can successfully coexist. In Maine, we are in the fortunate situation, if we act now, of being able to avert the types of wildlife and habitat losses often experienced by our neighbors to the south. Over half of all owl, salamander, frog and toad species that breed in Maine are listed as special concern, threatened or endangered in other northeastern states. We have a chance of keeping new species from being added to Maine's list of endangered species and to protect species that are still common but add greatly to our enjoyment of nature.

Open space can help conserve wildlife, provide recreational opportunities, enhance quality of life for residents and provide an economic benefit to the town. In this piece we focus on how landowners, land trusts, and municipalities involved with protecting green space can actively conserve wildlife and wildlife habitat as part of their protection efforts.

Note: ignore underlining

What happens to Wildlife as we develop the landscape?

WE KNOW FROM STUDIES done in the agricultural Midwest and the suburbanized Mideast coast that as human development increases, wildlife habitat is destroyed, and only small habitat fragments remain. Some common wildlife species thrive in this human altered habitat. These animals are opportunistic generalists that can be found in large numbers living near and benefiting from humans, such as house sparrows, grackles, blue jays, skunks and raccoons. Often, species that depend on large contiguous tracts of forest, such as fisher, wood thrush, and American redstart begin to disappear or decline in numbers. These animals are easily disturbed by human activity or fall prey to the more abundant generalists.

Habitat specialists are also vulnerable to habitat loss. Specialists are species that are tied to one or more type of plant community to complete their life cycle. For example, spotted salamanders need vernal pools for breeding and upland forests for feeding and hiding, and piping plovers need frontal dunes for nesting and sand and mud flats for feeding. If either one of these habitat types is lost, the species will no longer thrive.

In addition to the direct loss of usable habitat, small isolated habitat patches can be "population sinks" from a regional landscape perspective. Individuals who can not reproduce successfully in the altered habitat may still use the remaining small patches. The results may be a reduced regional population. A study by Robinson (1989) in central Illinois showed that neo-tropical (long-distance) migrant birds were unsuccessful at breeding in forest tracks because of increased predation in these small habitat patches. A different study by Friesen (1995) in Ontario found fewer neo-tropical migrants in forest tracts adjacent to a high amount of residential housing.

Initially these species become extinct locally, then regionally, and finally a species may become extinct throughout its range. As development increases, regional diversity decreases, leaving us with a subset of animals that thrive in an urban/suburban environment.

What happens to Plant Communities as we develop the landscape?

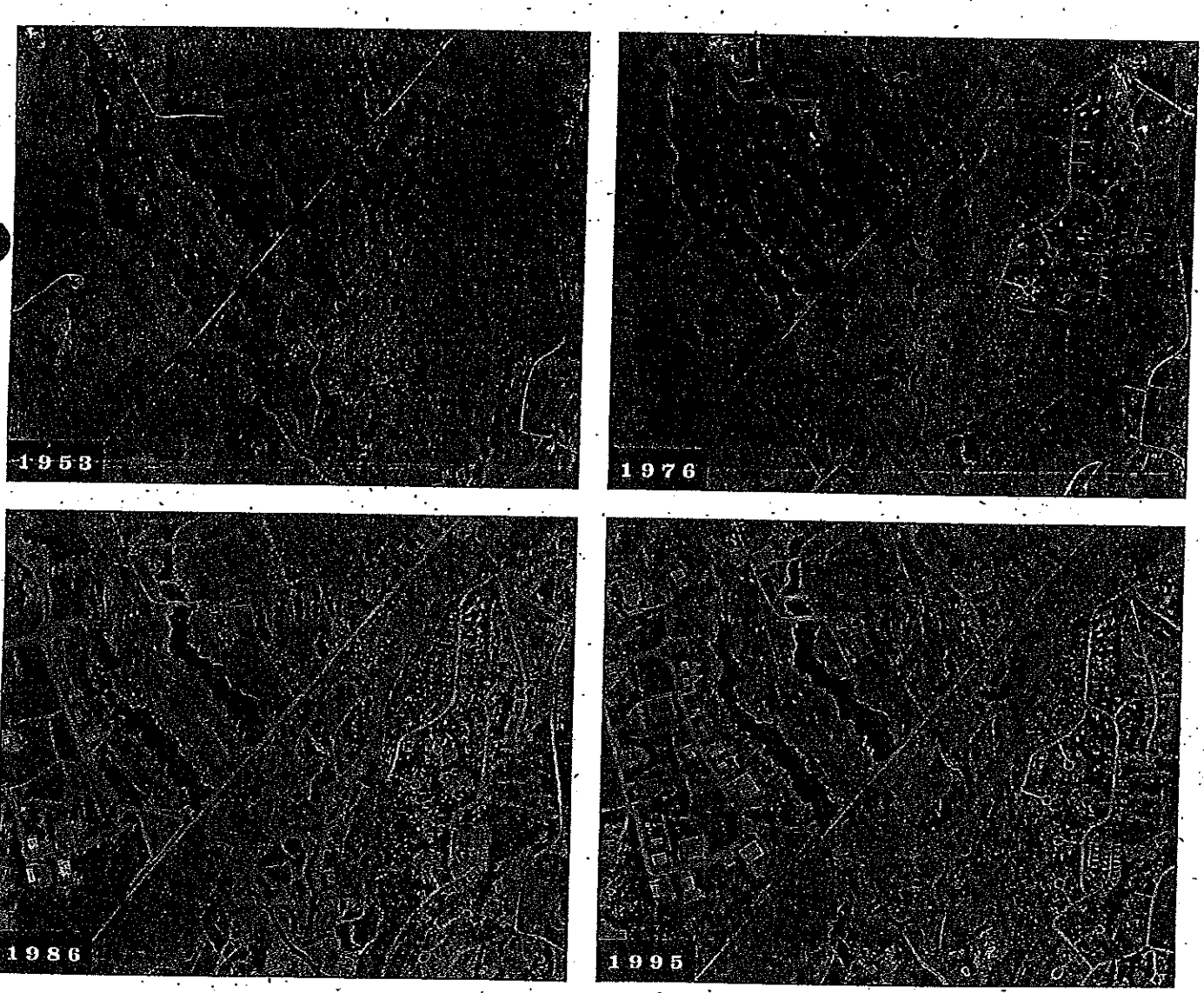
THROUGH SEVERAL MECHANISMS, habitat fragmentation may also have significant impacts on plant communities. First and most importantly, fragmentation reduces available habitat size. Native plants, like animals, need minimum population sizes to remain viable. As habitat patches decrease in size, the amount of suitable microhabitat needed to maintain individual plant populations decreases. The end result is often the reduction of native plant diversity (Carleton and Taylor 1993, Gibson et al. 1988). This is particularly true in Southern Maine, where some of the state's rarer plant communities have been lost or altered due to development.

Secondly, just as fragmentation often favors wildlife generalists at the expense of specialists, the same pattern is true for plants. Roads and fragmentation alter patterns of sunlight and moisture, creating habitat more suitable to generalists. Plants adapted to interior mature forests typically have low dispersal capacities as compared to aggressive "weedy" plants adapted to disturbed areas and younger forests (Harris and Silva-Lopez 1992). Those weedy plants — often non-native — colonize forest edges and may penetrate over 330 feet into the forest interior, altering or eliminating habitat for native plants. With roughly one-third of Maine's flora comprised of non-native plant species (and most of these in the southern part of the state), the linkage between fragmentation and non-native plant species forms a significant threat to native habitats.

Edges and reduced habitat size may also affect plant reproduction through changes in the way seeds are produced and released. Moreover, studies have shown that development and habitat fragmentation may also affect the way plants and animals interact. A proliferation of non-native plants can have a direct negative effect on wildlife species by replacing traditional foods with inedible alternatives. Effected animals would include pollinators (such as bees, moths, beetles and hummingbirds), fruit and seed eaters (such as fox, squirrels, cedar waxwings and bears), and herbivores (such as cottontails, deer and moose).

Could this happen in Maine?

IN SOME AREAS OF MAINE SIGNIFICANT HABITAT loss has already begun, especially in York and Cumberland counties, and it is likely to spread in the foreseeable future. In Maine, it is unclear which of the following issues are causing the most problems for wildlife at this time. Maine is different from many of the states where research on the effects of development on wildlife have been conducted in that we are still primarily a forested landscape rather than an agricultural or suburban landscape dotted with remnant forest blocks. There has been little direct research on these issues in the state. However, as development continues it is likely that all or some of the following issues will become problems for Maine's wildlife sometime in the next 50 years depending on the part of the state.



These aerial photographs show changes in the landscape in Scarborough, Maine.

Photographs courtesy of Greater Portland Council of Governments

LOST HABITAT

The greatest threat to wildlife is the direct loss of habitat. Habitat is each animal's home and provides food, water, shelter, and a place to raise their young. As we convert a field, forest or wetland into a parking lot, store, house, or road, we destroy that habitat, reducing the area available for wild animals to live. When an old field reverts back to a forest, this change benefits species that can use forest habitat, but some species can only survive in an open environment. Many species in Maine that rely on field habitat or early successional habitat are declining, such as the eastern meadowlark, bobolink, American woodcock and New England cottontail. Grassland habitats and the birds associated with them, including the upland sandpiper, northern harrier, short-eared owl, horned lark, vesper sparrow, savannah sparrow, grasshopper sparrow, dickcissel and sedge wren, are particularly at-risk. Wetland habitats are also at risk in Maine, especially those that are not adequately protected by regulations including vernal pools and forested wetlands. Many species depend on wetlands for part or all of their life cycle including frogs, salamanders, American bittern, least bittern, and great-blue heron. In addition, habitat can be changed or lost due to an invasion of exotic species and loss of native plant species, and through degradation from soil erosion, nutrient overload, decreased water quality, and contaminants.

FRAGMENTED HABITAT

Development fragments, or breaks apart, wildlife habitat. Fragmentation occurs when roads, utility corridors, buildings, parking lots, or clearings create breaks in the natural landscape. For some species, the roads, clearings, and corridors act as barriers, preventing animals from using habitat that is nearby for breeding or feeding. Populations become subdivided and eventually animal species are lost from an area as it gets too small to support an isolated population.

HABITAT SIZE

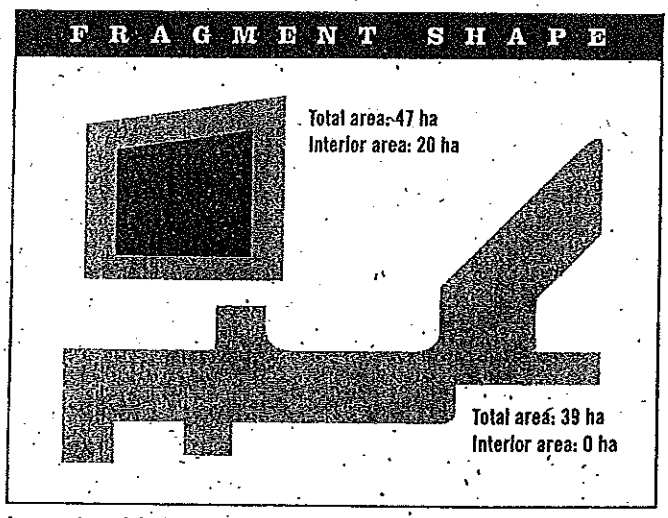
Different types of wildlife need different amounts of habitat to thrive. A mouse needs less than an acre compared to a moose that needs hundreds of acres. When we fragment habitat, the size of the remaining block of habitat limits the type of animals that can live there. As habitat size decreases, bobcat will start disappearing, then moose, osprey, beaver, turtles and so on.

Some species of wildlife, called "area-sensitive species", need large blocks of uninterrupted habitat. They are sensitive to human disturbance and are often predated by species that are found on the edge of two different habitat types. Some area-sensitive birds in Maine include the upland sandpiper, wood thrush, northern parula warbler, rose-breasted grosbeak, and pileated woodpecker. Other wildlife species need access to more than one habitat type in order to maintain a population. For example, Blanding's and spotted turtles need multiple wetlands for feeding and resting and upland areas for breeding. In this case a large block must consist of multiple habitats to be of value.

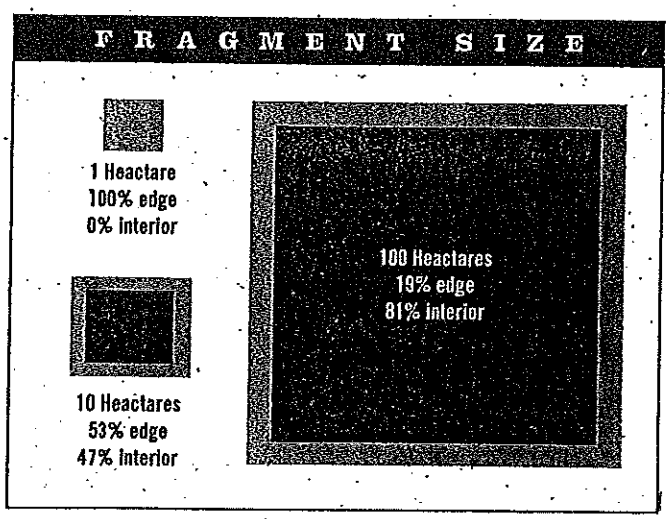
At another scale, enough habitat must be available for the minimum number of individuals of a given species to interbreed and maintain a healthy and genetically diverse population. Animals must be able to travel to habitat nearby if enough habitat is not present within one block. Though few parcels of land will be large enough to support a self-sustaining population of most vertebrates, a well-placed parcel can contribute towards the total amount of habitat needed for the survival of a mobile population.

HABITAT EDGE

'Edge' is the area where two habitat types meet. For example, edge would be the place where a field and forest meet, or where a road corridor ends and a forest begins. It can be a natural transition between two habitat types such as a pond and upland



A comparison of the interior area available in two different shaped blocks of land.
Adapted from Verner et al. *Wildlife 2000* 1986, reprinted by permission of University of Wisconsin Press.



A comparison of the interior area of 3 different size blocks. As fragment size increases, the relative proportion of edge habitat decreases, and interior habitat increases.
Adapted from *Landscape and Urban Planning*, (36) Collinge, pg. 64, 1996, reprinted by permission of Elsevier Science.

Table 1. Area requirements of selected Maine wildlife species.

I. Area-Sensitive+ Forest Birds Found in Maine

Bird Species	May Occur in Blocks <250 Acres	Occur in Blocks 250-500 Acres	Occur in Blocks 500-1000 Acres	Occur in Blocks >1000 Acres
Red-shouldered hawk			X	X
Yellow-billed cuckoo**	X	X	X	X
Downy woodpecker**	X	X	X	X
Hairy woodpecker		X	X	X
Pileated woodpecker*			X	X
Least flycatcher		X	X	X
Great crested flycatcher*	X	X	X	X
Common crow	X	X	X	X
Tufted titmouse*	X	X	X	X
White-breasted nuthatch	X	X	X	X
Brown creeper*			X	X
Blue-gray gnatcatcher				X
Veery		X	X	X
Hermit thrush			X	X
Wood thrush			X	X
Gray catbird**	X	X	X	X
Yellow-throated vireo*	X	X	X	X
Red-eyed vireo*	X	X	X	X
Northern parula				X
Chestnut-sided warbler*		X	X	X
Black-throated blue warbler				X
Black-throated green warbler*			X	X
Black-and-white warbler			X	X
American redstart		X	X	X
Ovenbird			X	X
Northern waterthrush			X	X
Louisiana waterthrush			X	X
Mourning warbler			X	X
Canada warbler				X
Scarlet tanager		X	X	X
Rose-breasted grosbeak*	X	X	X	X
Rufous-sided towhee**		X	X	X

(See bibliography for references)

+ Bird species that are uncommon in smaller forests.

* Some studies did not classify these species as area-sensitive.

** Some studies classified these species as area-sensitive, but most did not. These are more likely not area-sensitive.

II. Area-Sensitive+ Grassland Birds found in Maine

Bird Species	Minimum Block Size	Preferred Block Size
Upland Sandpiper	150 acres	500 acres
Bobolink	5 acres	75 acres
Eastern meadowlark	15 acres	20 acres
Grasshopper sparrow	30 acres	250 acres
Vesper sparrow	30 acres	50 acres
Savannah sparrow	20 acres	40 acres

(Jones & Vickery 1997; Vickery et al. 1997)

+ Bird species that are uncommon in smaller grasslands.

III. Large Mammals Found in Southern and Central Maine

Species	Home Range*
Black Bear	19,200 acres
Bobcat	5760 acres
Fisher	4747-9600 acres
Mink	20-50 acres (females), 1280-2010 acres (males)
Moose	1280-12,800 acres
River Otter	15-30 linear miles

(DeGraaf & Rudis 1986)

IV. Turtles Found in Maine

Species	Home Range*	Additional Distances Traveled *(for nesting, migrating, feeding)*
Snapping Turtle	4.50-22 acres	Up to 5 miles
Common Musk Turtle	2.4 (females) acres 4.4 (males)	Less than 0.5 miles
Spotted Turtle	5-7 acres	Up to 1.25 miles
Wood Turtle	1446 river feet	Up to 6 river miles Up to 0.10 miles over land (500 feet)
Eastern Box Turtle	0.8-3 acres	Up to 0.2 miles
Eastern Painted Turtle	0-2 acres	Up to 1 mile or more
Blanding's Turtle	0-300 acres	Up to 4.20 miles

(DeGraaf & Rudis 1986; Ernst et al. 1994; Hunter, Albright & Arbuckle 1992; McCollough per comm.)

* Home range is the primary area in which an individual animal lives, and includes areas for resting, sleeping, feeding and breeding.

Table 2. Wildlife Species that occur in southern and central Maine likely to decline or whose local populations may be lost due to increased development.

Each species is followed by their Maine State endangered and threatened status (E=endangered, T=threatened, SC=special concern). Bird and mammal species are followed by their area requirements (AS=area-sensitive, LA=requires large area, W=requires water front habitat). In addition, bird species are followed by their United States Fish & Wildlife Service breeding bird survey status (–=declining, +=increasing, blank=not encountered in survey)

Butterflies & Moths

Spicebush Swallowtail ..... SC
Clayton's Copper ..... E
Edwards' Hairstreak ..... E
Olive Hairstreak ..... SC
Hessel's Hairstreak ..... E
Bog Elfin ..... SC
Western Pine Elfin ..... SC
Regal Fritillary ..... SC
Barrens Itame ..... SC
Twilight Moth ..... T
Pine-Devil Moth ..... SC
Inland Barrens Buck Moth ..... SC
Pine Sphinx ..... SC
Huckleberry Sphinx ..... SC
Pine Barrens Zanclognatha ..... T
Oblique Zale ..... SC
Pine Barrens Zale ..... SC
Precious Underwing ..... SC
Similar Underwing ..... SC
Acadian Swordgrass Moth ..... SC
Pine Pinion ..... SC
Thaxter's Pinion ..... SC
Ceromatic Noctuid Moth ..... SC
Red-winged Sallow ..... SC
A Noctuid Moth ..... SC
Trembling Sallow ..... SC
Broad Sallow ..... SC

Damselflies & Dragonflies

Ring Boghaunter ..... E
Pygmy Snaketail ..... T
Harpoon Clubtail ..... SC
Extra-striped Snaketail ..... SC
Zigzag Darner ..... SC
Muskeg Darner ..... SC
Ocellated Darner ..... SC
Ebony Boghaunter ..... SC
Delicate Emerald ..... SC
Warpaint Emerald ..... SC
Black Meadowfly ..... SC
Superb Jewelwing ..... SC
Subartic Bluet ..... SC
New England Bluet ..... SC
Turquoise Bluet ..... SC
Big Bluet ..... SC
Pine Barrens Bluet ..... SC
Citrine Forktail ..... SC
Lilypad Forktail ..... SC
Cyrano Darner ..... SC
Boreal Snaketail ..... SC
Single-striped Clubtail ..... SC
Rapids Clubtail ..... SC
Cobra Clubtail ..... SC
Riverine Clubtail ..... SC
Elusive Clubtail ..... SC

Mollusks

Tidewater Mucket ..... T
Yellow Lampmussel ..... T
Brook Floater ..... SC
Triangle Floater ..... SC
Squawfoot ..... SC

Fish

Swamp Darter ..... T
Redfin Pickerel ..... SC

Amphibians

Northern Leopard Frog ..... SC
Spring Salamander ..... SC
Four-toed Salamander ..... SC

Reptiles

Wood Turtle ..... SC
Common Musk Turtle ..... SC
Ribbon Snake ..... SC
Blanding's Turtle ..... E
Box Turtle ..... E
Black Racer ..... E
Spotted Turtle ..... T

Mammals

Southern Flying Squirrel ..... SC
New England Cottontail ..... SC
Little Brown Bat ..... SC
Eastern Small-footed Myotis ..... SC
Northern Long-eared Bat ..... SC
Silver-haired Bat ..... SC
Eastern Pipistrelle ..... SC
Big Brown Bat ..... SC
Red Bat ..... SC
Hoary Bat ..... SC
Black Bear ..... LA
Fisher ..... LA
River Otter ..... LA
Bobcat ..... LA
Moose ..... LA
Mink ..... W

Birds

Common loon ..... –
Leach's storm-petrel ..... SC
Great blue heron ..... –
Black-crowned night heron ..... SC
Least bittern ..... SC
American bittern ..... –
Northern goshawk ..... SC
Cooper's hawk ..... SC
Red-shouldered hawk ..... AS
Bald eagle ..... T
American kestrel ..... –
Ruffed grouse ..... –
Common gallinule ..... SC
American coot ..... SC
Killdeer ..... –
Piping plover ..... E
Whimbrel ..... SC
Upland sandpiper ..... T
Common snipe ..... –
Laughing gull ..... SC
Common tern ..... SC
Least tern ..... E
Black tern ..... E
Yellow-billed cuckoo** ..... AS
Eastern ..... SC
Reech owl ..... SC
Short-eared owl ..... SC
Chimney swift ..... –
Belted kingfisher ..... –
Yellow-shafted flicker ..... –
Pileated woodpecker* ..... +AS
Hairy woodpecker ..... +AS
Downy woodpecker** ..... +AS
Eastern kingbird ..... –
Great crested flycatcher* ..... +AS
Alder flycatcher ..... –
Least flycatcher ..... –AS
Eastern wood-pewee ..... –
Olive-sided flycatcher ..... SC
Tree swallow ..... –
Bank swallow ..... –
Barn swallow ..... –
American crow ..... +AS
Tufted titmouse* ..... AS
White-breasted nuthatch ..... +AS
Brown creeper* ..... –AS
House wren ..... –
Gray catbird** ..... –AS
Brown thrasher ..... –
American robin ..... –
Wood thrush ..... –AS
Hermit thrush ..... +AS
Swainson's thrush ..... –
Veery ..... –AS
Blue-gray gnatcatcher ..... AS
Ruby-crowned kinglet ..... –
Loggerhead shrike ..... SC
Yellow-throated vireo* ..... AS
Red-eyed vireo* ..... +AS
Black-and-white warbler ..... –AS
Tennessee warbler ..... –
Nashville warbler ..... –
Northern parula ..... –AS
Yellow warbler ..... –
Magnolia warbler ..... –
Cape May warbler ..... –
Black-throated blue warbler ..... +AS
Black-throated green warbler* ..... +AS
Chestnut-sided warbler* ..... –AS
Bay-breasted warbler ..... –
Ovenbird ..... +AS
Northern waterthrush ..... +AS
Louisiana waterthrush ..... AS
Mourning warbler ..... +AS
Common yellowthroat ..... –
Canada warbler ..... –AS
American redstart ..... –AS
House sparrow ..... –
Bobolink ..... –
Eastern meadowlark ..... SC
Red-winged blackbird ..... –
Orchard oriole ..... SC
Baltimore oriole ..... –
Common grackle ..... –
Brown-headed cowbird ..... –
Scarlet tanager ..... +AS
Rose-breasted grosbeak* ..... –AS
Indigo bunting ..... –
Purple finch ..... –
Rufous-sided towhee** ..... –AS
Grasshopper sparrow ..... E
Vesper sparrow ..... SC
Slate-colored junco ..... –
White-throated sparrow ..... –
Song sparrow ..... –

* Some studies classified these species as not area-sensitive

** Some studies classified these species as area-sensitive, but most found that these are more likely not area-sensitive

forest, or a human-made border like a road, backyard, parking lot or utility corridor.

For certain types of animals such as deer and grouse, edge habitat is favored. The animals that are attracted by edge are opportunists, such as crows, blue jays, deer, and raccoons, which can use a variety of habitats. Many of these animals prey on area-sensitive species. Many studies show that neotropical migrant birds that nest in open cups on the ground or in low shrubs are not breeding successfully in edge habitat. This is due to highly elevated rates of parasitism by brown headed cowbirds (currently not a big problem in Maine) or predation by small mammals such as red squirrels and birds such as blue jays.

ROSLYN ALEXANDER

Backyard birdfeeders can increase numbers of these cute and fiesty red squirrels who are serious predators of nesting forest songbirds.

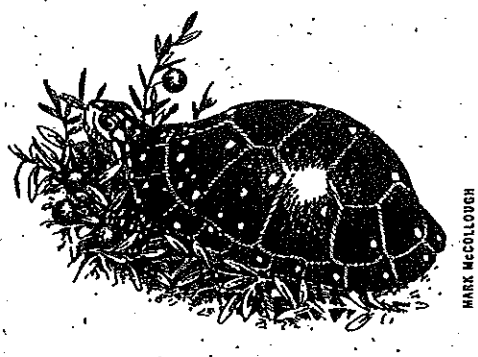
In urban/suburban areas, a study by Matlack (1993) found that human activity could extend up to 270 feet into natural areas on the edge of human development. These activities can reduce the value of the edge habitat for wildlife. Dumps, litter, pruned and hacked trees, cleared understory vegetation, established campsites and extensive firewood gathering, can all reduce the vegetation birds use to nest and cause general disturbance which may keep animals out of the area. In addition, habitat adjacent to residential housing often has elevated numbers of gray squirrels (due to supplemental feeding at bird feeders) and house cats, both of which are effective predators on nesting birds.

ROADS

Roads have many negative effects on wildlife in addition to fragmenting habitat (Andrews 1990). Roads are often a conduit for invasive plant species such as the purple loosestrife and Eurasian milfoil that can degrade wildlife habitat. Roads that go into or through a natural area bring the edge effect into the area, reducing its value for area-sensitive species. Where roads are built, habitat is lost or changed and development often follows along the road. In addition, roads increase human access to natural areas and bring increased human disturbance and poaching. Traffic lights and noise disturb some individual animals and vehicles kill many animals. For example, since many turtle species spend at least some of their life traveling in uplands, either feeding or nesting or both, they inevitably cross roads. Mortality from roads may be enough to wipe out an entire local population over time. In Connecticut, there are no wood turtle populations found within a mile of paved roads (Line 1998).

SUMMARY

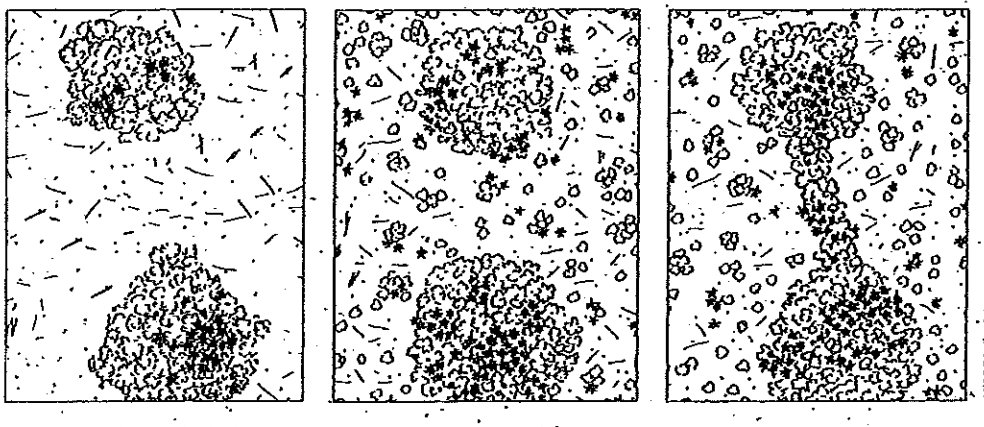
If we act now, we will be able to avert the type of wildlife habitat loss being experienced in so many other parts of the country. Fragmentation of habitat, the edge effect, and habitat destruction are all factors which can cause a decline in wildlife. In some places their cumulative effect has been shown to be devastating to wildlife. In Maine, it is unclear whether all or just one of these elements is affecting wildlife at this time. Based on current research, it is clear that over time, if Maine loses enough habitat to development, fragmentation and edge effect will become serious problems for many of our wildlife species.



MARK McCOLLOUGH

DESIGN CRITERIA:

What to Consider When Conserving Open Space for Wildlife



ANDREA SULZER

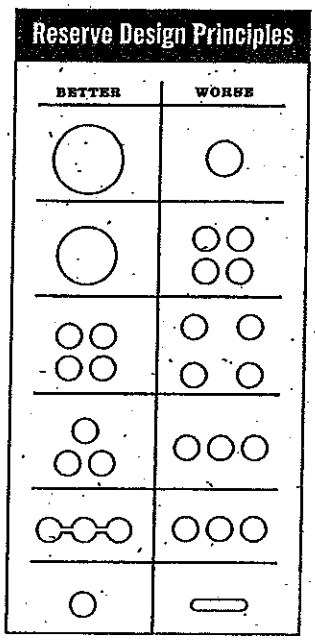
Habitat blocks that are (left) islolated from one another and surrounded by unusable, different or inhospitable habitat are less valuable for wildlife than blocks that are either (center) isolated but surrounded by marginal but still usable habitat or (right) connected by the same type of habitat and surrounded by marginal but still usable habitat.

MOST PARCELS OF LAND CAN CONTRIBUTE to maintaining Maine's diverse wildlife for both local communities and a larger region. To stretch limited conservation dollars, plans to protect open space for aesthetics or recreation can also incorporate some of these principles benefiting wildlife, in addition to achieving the primary goals for the open space. When human recreation and wildlife conservation are both goals for conserving open space, it is important to assess whether there may be any conflicts between the goals. If identified and addressed during the planning process, it is usually possible to provide for and to balance many different uses.

Because resources are limited, it may be best to prioritize protection of the largest parcels first. In addition, lands adjacent to conservation parcels where land-use practices allow dispersal of wildlife between tracts are more valuable than narrow corridors (Wilcove et al. 1986). Looking beyond the boundaries of the parcel to the present and future potential uses of the surrounding land is critical to achieving the original goals of conserving wildlife in a parcel. The following criteria can be used to help evaluate a parcel for its value to wildlife.

SIZE

Larger is better and is usually the most important design criteria. Larger pieces of land provide habitat for more types of animal species, are generally less influenced by the 'edge effect', and may be less influenced by human activities surrounding the open space. Many parcels over 250 acres start to have productive breeding habitat for forest interior nesting bird species. These are birds that nest away from the edge where two habitat types meet (Yahner 1988). Parcels of 30 acres or more will provide valuable habitat for many grassland bird species. Large contiguous tracts of grasslands, from 250 to 500 acres and larger, are needed to support a greater diversity of grassland birds including the grasshopper sparrow and upland sandpiper. "To conserve regional biodiversity, maintenance of habitats for species with large-area needs is essential" (Schroeder 1996).



Reprinted from *Biological Conservation*, (7) Diamond, pg. 143, 1975, with permission of Elsevier Science.

SHAPE

Minimize the amount of edge habitat by designing open space to have a generally circular shape. Assuming edge effects have impacts as far as 650 to 2000 feet into a parcel (Andren 1988 & Yahner 1988), a 7000-acre circular parcel will be comprised of 90% interior habitat (Collinge 1996). Long narrow parcels are often entirely edge and provide no productive habitat for interior species. Open space along waterways needs to be as wide as possible to minimize the amount of edge habitat. Buffers on waterways of 250 feet or less, which is Maine's current shoreland zoning, will function primarily as edge habitat if not adjacent to a larger parcel.

PROXIMITY

Whenever possible, maximize the size of an open space parcel by selecting one adjacent to or in close proximity to existing conservation land or lands likely to remain undeveloped, including certain wetlands, land in conservation easements, tree growth, or open space status. In addition, take into consideration the neighboring land use, such as zoning for rural residential versus urban or commercial. For those parcels less than 250 acres, the smaller parcels adjacent to parcels with compatible land use may be more valuable than larger parcels in highly urban/suburban areas.

BARRIERS

Barriers such as roads, railroads, utility corridors and fences may be difficult or dangerous for some animals to cross. Avoid parcels (especially small parcels) completely surrounded by barriers, particularly major highways.

CORRIDORS

Corridors are sections of habitat that may be used by some wildlife species to travel from one habitat block to another. The value of corridors is not clearly understood and may vary greatly in individual situations. On the positive side, the corridor itself serves as wildlife habitat; may provide travel lanes for wildlife movement; links habitat that was originally interconnected; may minimize pollution by preventing runoff into a body of water; and may provide recreational trails for people. One of the best examples of this would be a buffer along side streams, rivers, ponds, lakes, and wetlands, typically referred to as a riparian area. On the negative side, the corridor may create more edge habitat and be a breeding sink for some wildlife; may not be needed by many bird species; provides travel lanes for predators including domestic predators that already may be found in elevated numbers due to proximity to humans; may increase the transmission of contagious diseases such as rabies; and may take a large amount of funds that could be applied better elsewhere.

HABITAT TYPE

Certain habitats in southern Maine are in decline, including uncultivated (fallow) fields, small wetlands, grasslands, and both early successional and old forests. Consider conserving parcels that include these habitats and be sure to consider what types of management activities would be necessary to maintain these habitats. If ongoing management is necessary (e.g. old field habitat must be maintained by mowing, brush hogging or prescribed burning), it is also important to devise a plan that includes how the management will be paid for over the years.

CONCLUSION

These recommendations are based on the best available information from an evolving body of scientific literature. They are meant to be guidelines and not prescriptive in nature. We have included a listing of related bird, turtle and mammal species home range or area requirements to help emphasize points made in the text regarding fragmentation, size requirements and edge effect. In addition, we have listed all species that are either currently designated as an endangered, threatened or special concern species, in decline, or useful as an umbrella species (one whose protection ensures protection of a host of other species along with it). We hope this information can help guide specific protection efforts.

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An extensive bibliography is available upon request for more detailed and technical information. Another fine resource that complements this piece titled *Integrating Wildlife Habitat Into Local Planning: A Handbook for Maine Communities*, by Sharri Venno and published by the Maine Agricultural Experiment Station of the University of Maine in 1991, should be available at your town office. In addition, all towns should have maps of state significant wildlife habitats and many have National Wetland Inventory maps.

CREDITS & ACKNOWLEDGEMENTS

Researched and written by Barbara Charry

Edited by Sally Stockwell

Plant community section contributed by Andy Cutko

Designed by O'Brien Design

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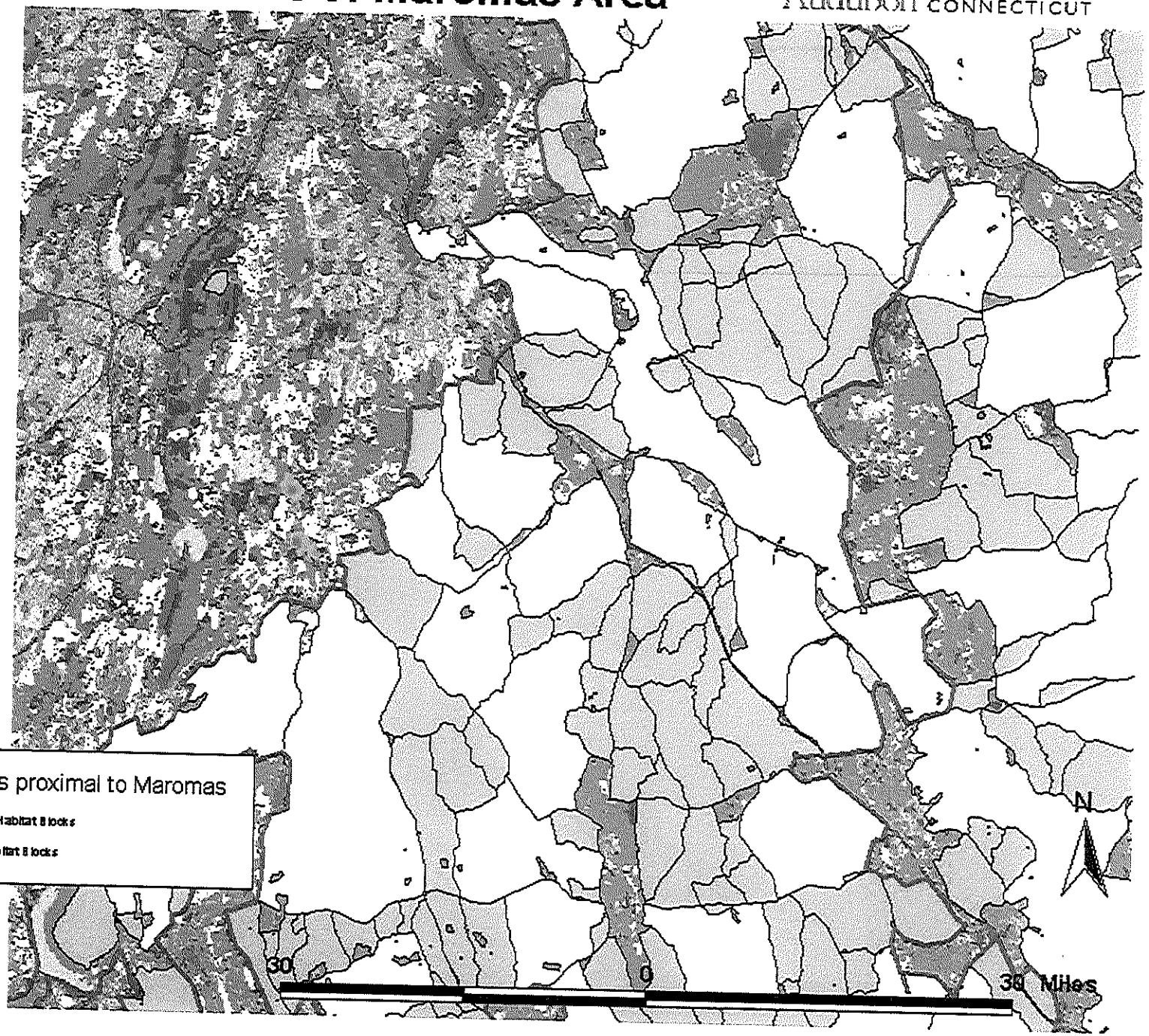
Andy Cutko, Arnold Banner, Barbara Vickery, Bill Krohn, Bos Savage, Debbie Gross, Geoffrey Coombs, George Hyde, Joe Wiley, Keel Kemper, Mark Stadler, Molly Docherty, Nancy Coverstone, Phillip deMaynadier, Sarah Evans

MAINE AUDUBON SOCIETY
20 Gilsand Farm Rd. Falmouth, Maine 04105-6009
(207) 781-2330 www.maineaudubon.org

Appendix H

Land Use of Maromas Area

Audubon CONNECTICUT



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Appendix I

The Nature Conservancy

SAVING THE LAST GREAT PLACES ON EARTH

MIDDLETOWN

Spiderweed
Contiguous Blocks by Size (Acres)
- 0 - 50
- 50 - 200
- 200 - 500
- 500 - 1,000
- 1,000 - 2,500

2000 0 2000 Feet

1:24000

N

c:\gis\landinquiries2\middletown.apr

Map Created by K. Geisler: August 05, 2003

Appendix J

NU-MAROMAS
PERMIT REQUIRED HUNTING AREA

Department of Environmental Protection
79 Elm St.
Hartford, Connecticut 06106
http://dep.state.ct.us

PERMIT REQUIRED
HUNTING AREA
DAILY PERMITS AVAILABLE FROM AGENTS AS LISTED IN CURRENT HUNTING/TRAPPING FIELD GUIDE
STATE OF CONNECTICUT
DEPT. OF ENVIRONMENTAL PROTECTION

LOCATION: Middletown
SYMBOLS: — Approximate Boundary [P] Parking

0 1000 2000 Feet

Permit Required Map # 29a 9/00
Land Parcels may be subject to change. Standard yellow signs indicate areas open to hunting.

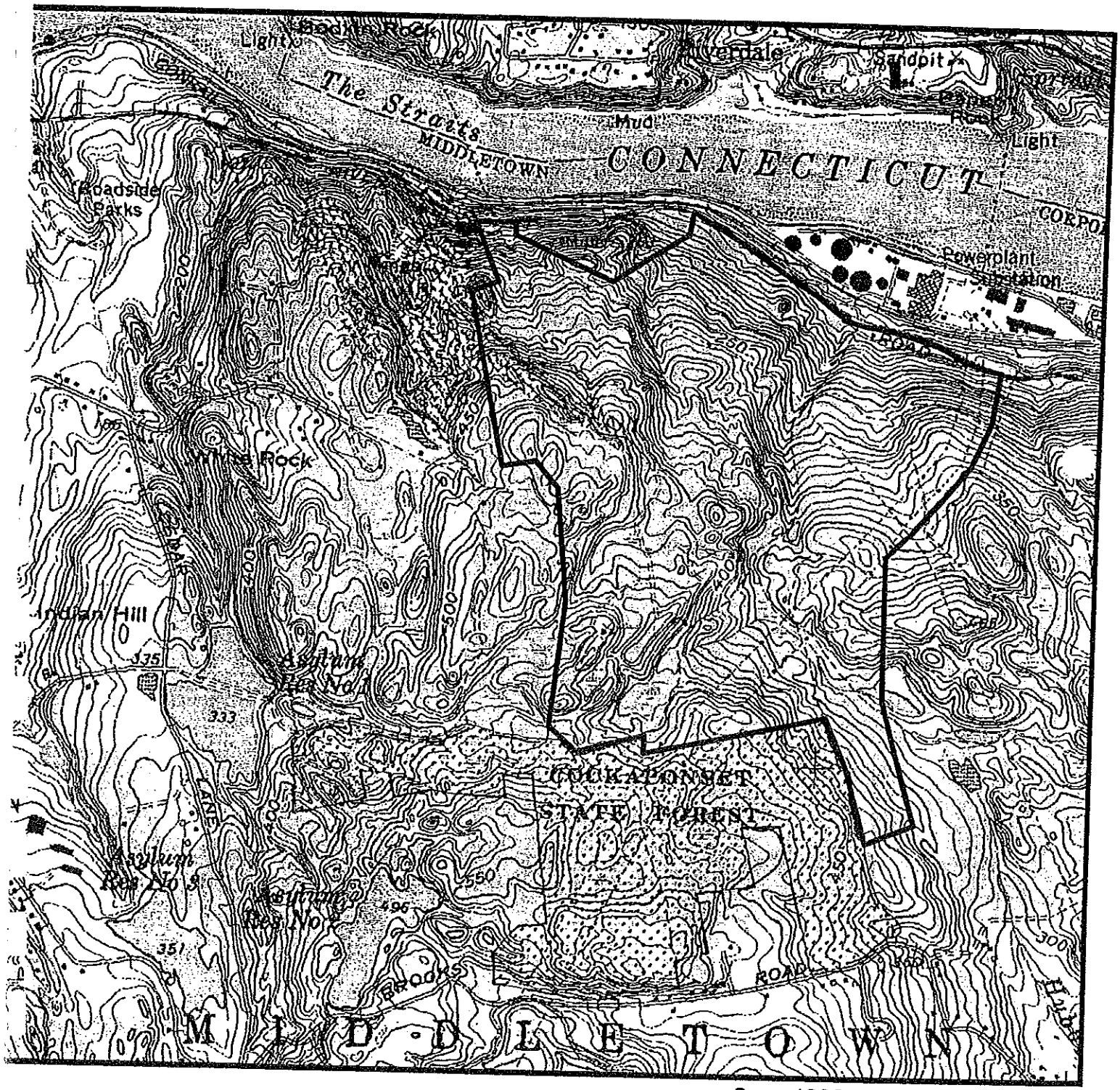
J

NO-MARCHAS
PERMIT REQUIRED HUNTING AREA

Department of Environmental Protection
79 Elm St.
Hartford, Connecticut 06106
http://dep.state.ct.us

PERMIT REQUIRED HUNTING AREA
DAILY PERMITS AVAILABLE FROM AGENTS AS LISTED IN CURRENT HUNTING/TRAPPING FIELD GUIDE
STATE OF CONNECTICUT
DEPT. OF ENVIRONMENTAL PROTECTION

LOCATION: Middletown
SYMBOLS: — Approximate Boundary ▨ Cockaponset State Forest



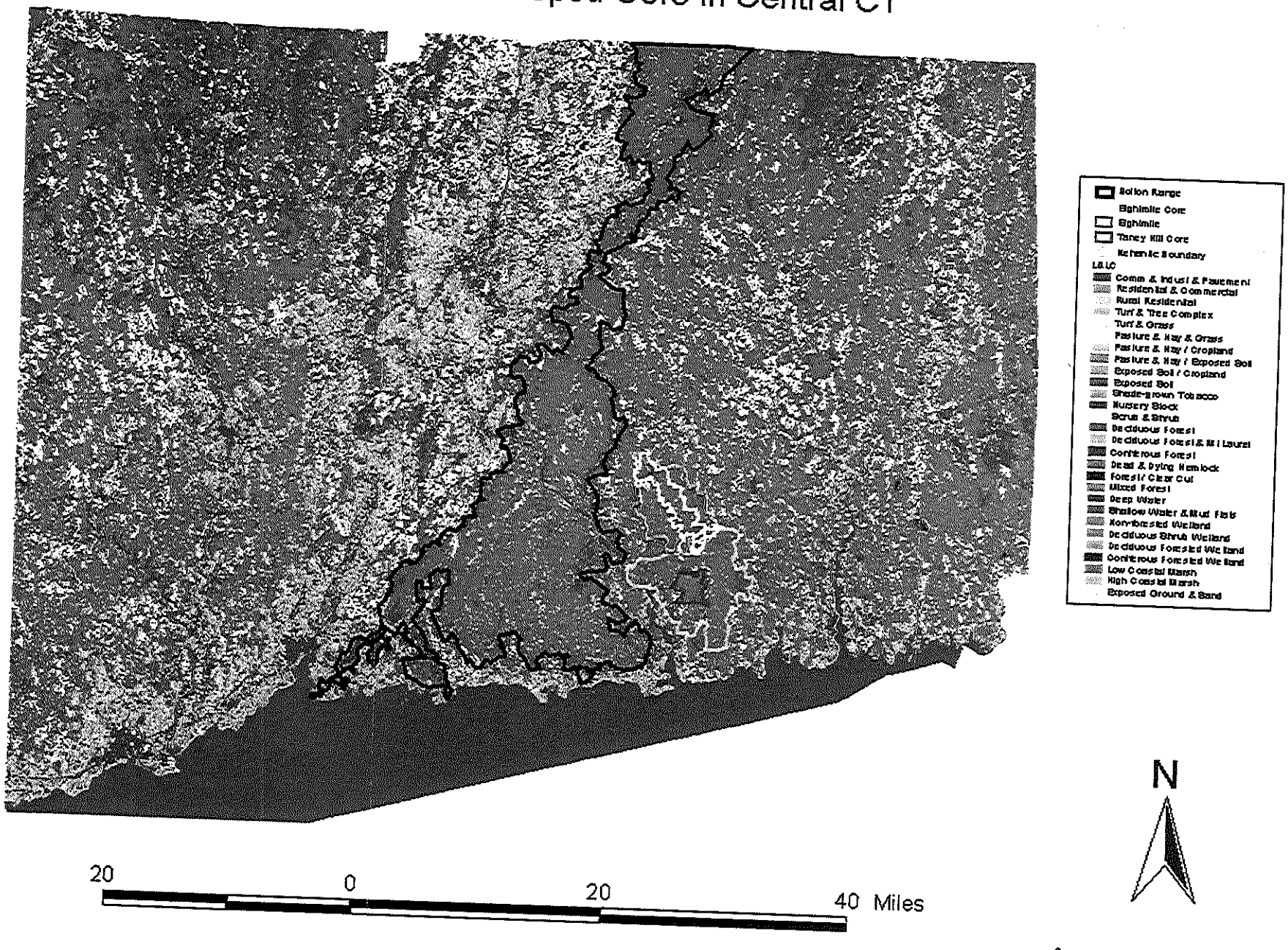
0 1000 2000 Feet

Permit Required Map # 29b 9/00
Land Parcels may be subject to change. Standard yellow signs indicate areas open to hunting.

J

Appendix K

Undeveloped Core in Central CT



K

by Audubon CT
(undated)

Appendix L

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ENVIRONMENTAL & GEOGRAPHIC INFORMATION CENTER
79 Elm Street, Store Level
Hartford, CT 06106
Natural Diversity Data Base

December 1, 2003

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

re: State Listed Species in the "Maromas" Area of Middletown, Connecticut

Dear Ms. O'Hare:

I have reviewed Natural Diversity Data Base maps and files regarding the delineated map you provided for the area known as "Maromas" in Middletown, Connecticut. According to our information, there are many known extant populations of State Endangered, Threatened or Special Concern Species. I have attached of list of species that occur within the area you define as "Maromas". I understand that you are preparing a plan for this area that includes storm water management, watershed planning, biodiversity conservation, recreational opportunities and overall environmental assessment of the "Maromas". I would encourage you to contact the appropriate staff person from the Department of Environmental Protection as the management plan is developed. I have included the appropriate contact person and their phone number on the attached list.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at 424-3592. Thank you for consulting the Natural Diversity Data Base. Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Sincerely,

D M. McKay

Dawn M. McKay
Biologist/Environmental Analyst

Cc: Nancy Murray
Ken Metzler
Julie Victoria
Peter Aarrestad
NDDB File # 12956

	Protection Status	Scientific Name	Common Name	Rank of Occurrence in Area	Contact Person in DEP for more Information
	T	Arenaria glabra	Smooth Mountain Sandwort	A - Excellent estimated viability	Nancy Murray; DEP-EGIC 860-424-3589
	E	Populus heterophylla	Swamp Cottonwood	H - Historical	Nancy Murray; DEP-EGIC 860-424-3589
	T	Salix exigua	Sandbar Willow	E - Verified extant (viability not assessed)	Nancy Murray; DEP-EGIC 860-424-3589
	SC	Stachys tenuifolia	Smooth Hedge-nettle	E - Verified extant (viability not assessed)	Nancy Murray; DEP-EGIC 860-424-3589
	SC	Terrapene carolina	Eastern Box Turtle	E - Verified extant (viability not assessed)	Julie Victoria; DEP-Wildlife Division 860-642-7239
	T	Leptodea ochracea	Tidewater Mucket	E - Verified extant (viability not assessed)	Julie Victoria; DEP-Wildlife Division 860-642-7239
	SC	Potamogeton vaseyi	Vasey's Pondweed	H - Historical	Nancy Murray; DEP-EGIC 860-424-3589
	E	Populus heterophylla	Swamp Cottonwood	H - Historical	Nancy Murray; DEP-EGIC 860-424-3589
	SC	Paronychia fastigiata	Hairy Forked Chickweed	H - Historical	Nancy Murray; DEP-EGIC 860-424-3589
	SC	Gomphus vastus	Cobra Clubtail	E - Verified extant (viability not assessed)	Julie Victoria; DEP-Wildlife Division 860-642-7239
	SC	Stagnicola catascopium	Woodland Pondsnail	E - Verified extant (viability not assessed)	Julie Victoria; DEP-Wildlife Division 860-642-7239
	SC	Linum intercursum	Sandplain Flax	H - Historical	Nancy Murray; DEP-EGIC 860-424-3589
	E	Polygala nuttallii	Nuttall's Milkwort	B - Good estimated viability	Nancy Murray; DEP-EGIC 860-424-3589
	T	Acipenser oxyrinchus	Atlantic Sturgeon	AB - Excellent or good estimated viability	Peter Aarrestad; DEP-Fisheries 860-424-3474
	E	Acipenser brevirostrum	Shortnose Sturgeon	AB - Excellent or good estimated viability	Peter Aarrestad; DEP-Fisheries 860-424-3474
	SC	Silene stellata	Starry Champion	H - Historical	Nancy Murray; DEP-EGIC 860-424-3589
	None	Medium fen	Medium fen	E - Verified extant (viability not assessed)	Ken Metzler; DEP-EGIC 860-424-3585
	E	Stachys hyssopifolia	Hyssop-leaf Hedge-nettle	X - Extirpated	Nancy Murray; DEP-EGIC 860-424-3589
	T	Arenaria glabra	Smooth Mountain Sandwort	H - Historical	Nancy Murray; DEP-EGIC 860-424-3589
	E	Haliaeetus leucocephalus	Bald Eagle	E - Verified extant (viability not assessed)	Julie Victoria; DEP-Wildlife Division 860-642-7239
	SC	Aristida longespica	Needlegrass	H - Historical	Nancy Murray; DEP-EGIC 860-424-3589
	E	Carex davisii	Davis' Sedge	E - Verified extant (viability not assessed)	Nancy Murray; DEP-EGIC 860-424-3589

Appendix M

DEP Natural Diversity Database "Blobs" -
MARCMAS PORTION
of: "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

Hallocks Pd
Connecticut R
Bodkin Rock
Paper Rock
Great Hill Pd Bk
Keighley Pd
Middle Haddam
Connecticut R
Exit 12
Duck Hill
uth Farms
White Rock
Bk
Res Bk
Russells Pd
Exit 12
Tryon Hill
Indian Hill
Res No 3
Res No 1
Res No 4
Rubber Mill Pd
Res No 5
Res No 2
Hubbard Bk
Exit 11
Obscure Pd
Res No 6
Silverman Pd
Pine Bk
Crystal L
Bear Hill
Mollers Pd
Harris Bk Pd
Harris Bk
nd Hill Bk Dam
Sumner Bk Pd
Sumner Bk
Hidden Pd
Exit 10
Pine Bk
Hog Hill
Axelson Bk
Carlson Pd
Hurd Bk
Scovill Rock
Split Rock
White Mountain

Appendix N

A County Report of
Connecticut's Endangered, Threatened and Special Concern Species

Middlesex County

Amphibian

Scientific Name	*Common Name*	*Protection*
Ambystoma jeffersonianum	Jefferson Salamander	SC

Bird

Scientific Name	*Common Name*	*Protection*
Accipiter cooperii	Cooper's Hawk	T
Accipiter striatus	Sharp-Shinned Hawk	E
Ammodramus caudacutus	Sharp-Tailed Sparrow	SC
Ammodramus savannarum	Grasshopper Sparrow	E
Anas discors	Blue-Winged Teal	T
Botaurus lentiginosus	American Bittern	E
Buteo lineatus	Red-Shouldered Hawk	SC
Caprimulgus vociferus	Whip-Poor-Will	SC
Catoptrophorus semipalmatus	Willet	SC
Charadrius melodus	Piping Plover	T
Circus cyaneus	Northern Harrier	E
Egretta caerulea	Little Blue Heron	SC
Egretta thula	Snowy Egret	T
Empidonax alnorum	Alder Flycatcher	SC
Eremophila alpestris	Horned Lark	T
Gavia immer	Common Loon	SC
Haematopus palliatus	American Oystercatcher	SC
Haliaeetus leucocephalus	Bald Eagle	E
Icteria virens	Yellow-Breasted Chat	E
Ixobrychus exilis	Least Bittern	T
Laterallus jamaicensis	Black Rail	E
Melanerpes erythrocephalus	Red-Headed Woodpecker	E
Parula americana	Northern Parula	SC
Passerculus sandwichensis	Savannah Sparrow	SC

N

Passerculus sandwichensis princeps	Ipswich Sparrow	SC
Plegadis falcinellus	Glossy Ibis	SC
Podilymbus podiceps	Pied-Billed Grebe	E
Pooecetes gramineus	Vesper Sparrow	E
Progne subis	Purple Martin	SC
Rallus elegans	King Rail	E
Sterna antillarum	Least Tern	T
Sterna dougallii	Roseate Tern	E
Sterna hirundo	Common Tern	SC
Toxostoma rufum	Brown Thrasher	SC
Tyto alba	Barn Owl	E

Fish

Scientific Name	*Common Name*	*Protection*
Acipenser brevirostrum	Shortnose Sturgeon	E
Acipenser oxyrinchus	Atlantic Sturgeon	T
Enneacanthus obesus	Banded Sunfish	T

Invertebrate

Scientific Name	*Common Name*	*Protection*
Cicindela puritana	Puritan Tiger Beetle	E
Cicindela tranquebarica	A Tiger Beetle	SC
Citheronia regalis	Regal Moth	SC*
Cordulegaster erronea	Tiger Spiketail	T
Eacles imperialis	The Imperial Moth	SC*
Enallagma minusculum	Little Bluet	T
Euphyes bimacula	Two-Spotted Skipper	T
Fossaria rustica	A Snail	SC
Gomphus fraternus	Midland Clubtail	SC
Gomphus vastus	Cobra Clubtail	SC
Leptodea ochracea	Tidewater Mucket	T
Leptophlebia bradleyi	A Mayfly	SC
Ligumia nasuta	Eastern Pondmussel	SC
Lycaena epixanthe	Bog Copper	SC
Lycaena hyllus	Bronze Copper	SC
Merycomyia whitneyi	Tabanid Fly	SC

Paraleptophlebia assimilis	A Mayfly	SC
Pomatiopsis lapidaria	Slender Walker	SC
Speyeria idalia	Regal Fritillary	SC*
Sphodros niger	Purse-Web Spider	SC*
Stagnicola catascopium	Woodland Pondsnail	SC
Stylurus amnicola	Riverine Clubtail	SC
Stylurus spiniceps	Arrow Clubtail	SC
Toxorhynchites rutilus	Elephant Mosquito	SC

Mammal

Scientific Name	*Common Name*	*Protection*
Cryptotis parva	Least Shrew	E
Puma concolor couguar	Eastern Cougar	SC*

Plant

Scientific Name	*Common Name*	*Protection*
Agrimonia parviflora	Small-Flowered Agrimony	SC
Arenaria glabra	Smooth Mountain Sandwort	T
Arenaria macrophylla	Large-Leaved Sandwort	E
Arethusa bulbosa	Arethusa	E
Aristida longespica	Needlegrass	SC
Aristida purpurascens	Arrowfeather	SC*
Aristolochia serpentaria	Virginia Snakeroot	T
Asclepias purpurascens	Purple Milkweed	SC*
Asclepias variegata	White Milkweed	E
Asplenium montanum	Mountain Spleenwort	T
Aster spectabilis	Showy Aster	T
Aster x herveyi	Hervey's Aster	SC
Bidens eatonii	Eaton's Beggar-Ticks	SC
Blephilia hirsuta	Hairy Woodmint	SC*
Calystegia spithamaea	Low Bindweed	SC*
Carex bushii	Sedge	SC
Carex buxbaumii	Brown Bog Sedge	E
Carex collinsii	Collins' Sedge	SC*
Carex davisii	Davis' Sedge	E
Carex exilis	Sedge	E

N

Carex hirsutella	Sedge	SC
Carex lupuliformis	False Hop Sedge	E
Carex polymorpha	Variable Sedge	E
Carex squarrosa	Sedge	SC
Carex typhina	Sedge	SC*
Castilleja coccinea	Indian Paintbrush	E
Chamaelirium luteum	Devil's-Bit	E
Corallorhiza trifida	Early Coralroot	T
Corydalis flavula	Yellow Corydalis	T
Cuphea viscosissima	Blue Waxweed	SC*
Cypripedium parviflorum	Yellow Lady's-Slipper	SC
Deschampsia caespitosa	Tufted Hairgrass	SC
Desmodium glabellum	Dillen Tick-Trefoil	SC*
Draba reptans	Whitlow-Grass	SC
Elymus wiegandii	Wiegand's Wild Rice	SC
Eriocaulon parkeri	Parker's Pipewort	T
Eupatorium aromaticum	Small White Snakeroot	E
Gnaphalium purpureum	Purple Cudweed	SC*
Hemicarpha micrantha	Dwarf Bulrush	E
Honckenya peploides	Sea-Beach Sandwort	SC
Hottonia inflata	Featherfoil	SC
Hudsonia tomentosa	False Beach-Heather	T
Hydrastis canadensis	Golden-Seal	E
Isotria medeoloides	Small Whorled Pogonia	E
Lachnanthes caroliana	Carolina Redroot	E
Liatris scariosa var novae-angliae	Blazing-Star	SC
Lilaeopsis chinensis	Lilaeopsis	SC
Limosella subulata	Mudwort	SC
Linnaea borealis var americana	Twinflower	SC*
Linum intercursum	Sandplain Flax	SC*
Liparis liliifolia	Lily-Leaved Twayblade	E
Liquidambar styraciflua	Sweet Gum	SC
Ludwigia sphaerocarpa	Globe-Fruited False-Loosestrife	E
Lycopus amplectens	Clasping-Leaved Water-Horehound	SC

N

Lygodium palmatum	Climbing Fern	SC
Mimulus alatus	Winged Monkey-Flower	SC
Myriophyllum tenellum	Leafless Water-Milfoil	SC
Najas guadalupensis	Naiad	SC
Nuphar advena	Large Yellow Pond Lily	SC*
Nuphar microphylla	Small Yellow Pond Lily	SC
Onosmodium virginianum	Gravel-Weed	E
Ophioglossum pusillum	Adder's Tongue	T
Opuntia humifusa	Eastern Prickly-Pear	SC
Orontium aquaticum	Golden Club	SC
Oxalis violacea	Violet Wood-Sorrel	SC
Panax quinquefolius	American Ginseng	SC
Panicum amarum	Panic Grass	T
Paronychia fastigiata	Hairy Forked Chickweed	SC*
Paspalum laeve	Field Paspalum	E
Paspalum setaceum var psammophilum	Bead Grass	SC*
Pedicularis lanceolata	Swamp Lousewort	SC
Platanthera blephariglottis	White-Fringe Orchid	E
Platanthera ciliaris	Yellow-Fringe Orchid	T
Platanthera flava	Pale Green Orchid	SC
Platanthera hookeri	Hooker Orchid	SC*
Podostemum ceratophyllum	Threadfoot	SC
Polygala cruciata	Field Milkwort	SC
Polygala nuttallii	Nuttall's Milkwort	E
Polymnia canadensis	Small-Flowered Leafcup	E
Populus heterophylla	Swamp Cottonwood	E
Potamogeton vaseyi	Vasey's Pondweed	SC*
Potentilla arguta	Tall Cinquefoil	SC
Ranunculus ambigens	Water-Plantain Spearwort	E
Ranunculus sceleratus	Cursed Crowfoot	SC
Rhynchospora macrostachya	Beaked Rush	T
Ribes rotundifolium	Wild Currant	SC*
Ribes triste	Swamp Red Currant	E
Rubus cuneifolius	Sand Bramble	SC

N

Appendix O

Folli, Mike

From: David Titus[SMTP:dtitus@mail.wesleyan.edu]
Sent: Friday, September 29, 2000 10:20 AM
To: MFolli@frharris.com
Subject: Fwd: Re: FW: Mattabeseck Audubon Society

MAROMA-1.XLS

>From: MORINJOR@aol.com
>Date: Thu, 28 Sep 2000 17:06:09 EDT
>Subject: Re: FW: Mattabeseck Audubon Society
>To: dtitus@mail.wesleyan.edu
>
>
>
>Attached is an excel list of birds grouped by 4 distinct habitat areas within
>Maromas.
>Patty Pendergast has a copy as well and I have explained to her where and
>what these areas consist of. There are also healthy communities of plants
>there as well including a hillside with Rattlesnake Plaintain (orchid) plus
>other oddities.
>
>If you have trouble downloading this file Patty has it on a disk.
>
>Best of luck
>
>Joe
>
>

Species	Spring				Summer				Winter			
	A	B	C	D	A	B	C	D	A	B	C	D
D. C. Cormorant	X	X				X						
Great Blue Heron	X	X	X		X	X	X			X		
Green back Heron			X			X	X		X	X	X	
Black Cr. Night Heron					X	X						
Mute Swan	X	X	X		X	X	X		X	X		
Canada Goose	X	X	X		X	X	X		X	X	X	
Wood Duck	X	X	X		X	X	X		X			
Green Wing Teal									X			
Black Duck	X	X	X						X	X		
Mallard	X	X	X		X	X	X		X	X	X	
Turkey Vulture	X	X	X	X	X	X	X	X			X	X
Osprey	X				X	X						
Sharp Shinned hawk			X						X	X	X	X
Cooper's hawk	X	X	X	X	X	X	X	X				
Red Shoulder Hawk	X	X	X	X	X	X	X	X	X	X	X	X
Broad-winged Hawk	X	X			X	X						
Red-tailed Hawk	X	X	X	X	X	X	X	X	X	X	X	X
Kestrel			X	X								
Ring Neck Pheasant			X	X			X	X			X	X
Wild Turkey		X	X	X		X	X	X		X	X	X
Virginia Rail	X				X				X			
Common Moorhen	X								X			
Killdeer			X				X					
Spotted Sandpiper	X			X	X			X				
Woodcock		X		X								
Herring Gull	X	X	X		X	X	X		X	X	X	
Ring Billed Gull	X	X	X		X	X	X		X	X	X	
Gr. Black Backed Gull	X	X	X		X	X	X		X	X		
Rock Dove			X				X				X	
Mourning Dove	X	X	X	X	X	X	X	X	X	X	X	X
Black Billed Cukoo		X										
E. Screech Owl	X	X	X	X	X	X	X	X	X	X	X	X
Great Horned Owl	X	X	X	X	X	X	X	X	X	X	X	X
arred Owl	X	X	X	X	X	X	X	X	X	X	X	X
. Saw-whet Owl	X	X	X	X					X	X	X	X
Common Nighthawk			X									
Whip-poor-will	X	X	X	X	X	X	X	X				
Chimney Swift			X	X			X	X				
uby Thr. Hummingbird			X	X			X	X				
elted Kingfisher	X	X	X		X	X	X		X	X		
Red belly Woodpecker	X	X	X	X	X	X	X	X	X	X	X	X

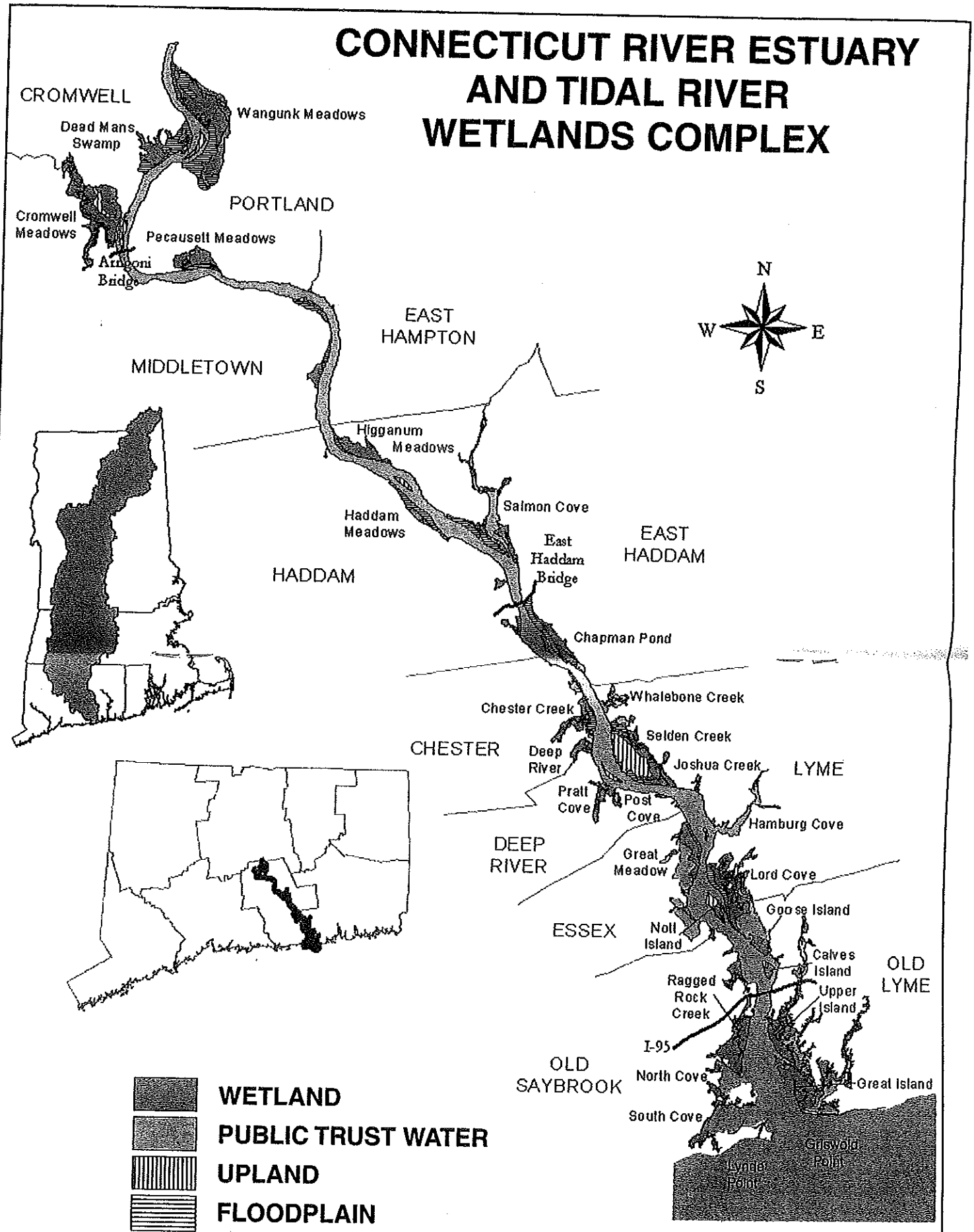
Species	Spring				Summer				Winter			
Downy Woodpecker	X	X	X	X	X	X	X	X	X	X	X	X
Hairy Woodpecker	X	X	X	X	X	X	X	X		X	X	X
Northern Flicker	X	X	X	X	X	X	X	X	X	X	X	X
Pileated Woodpecker		X	X	X		X	X	X		X	X	X
Eastern Wood Peewee	X	X	X	X	X	X	X	X				
Acadian flycatcher		X				X						
Alder Flycatcher		X				X						
Willow Flycatcher		X	X			X	X					
Least Flycatcher	X		X	X	X		X	X				
Eastern Phoebe		X	X	X		X	X	X			X	
Great Crested Flycatcher	X	X	X	X	X	X	X	X				
Eastern Kingbird			X				X					
Purple Martin			X									
Tree Swallow	X	X	X	X	X	X	X	X	X	X		
N. Rough Wing Swallow	X	X	X	X	X	X	X	X				
Bank Swallow	X	X	X	X		X	X	X				
Barn Swallow	X	X	X	X		X	X	X				
Blue Jay	X	X	X	X	X	X	X	X	X	X	X	X
Am. Crow	X	X	X	X	X	X	X	X	X	X	X	X
Fish Crow	X	X										
Chickadee	X	X	X	X	X	X	X	X	X	X	X	X
Tufted Titmouse	X	X	X	X	X	X	X	X	X	X	X	X
R. B. Nuthatch	X	X	X		X	X			X	X	X	X
W.B. Nuthatch	X	X	X	X	X	X	X	X	X	X	X	X
Brown Creeper	X	X	X		X	X	X		X	X	X	
Carolina Wren	X	X	X	X	X	X	X	X	X	X	X	X
House Wren	X	X	X	X	X	X	X	X		X		X
Marsh Wren	X				X							
Blue Gray Gnatcatcher	X	X	X	X	X	X	X	X				
E. Bluebird	X	X	X	X	X	X	X	X	X	X	X	X
Veery	X	X	X	X	X	X	X	X				
Hermit Thrush	X	X	X	X						X		X
Wood Thrush	X	X	X	X	X	X	X	X		X		
Am. Robin	X	X	X	X	X	X	X	X	X	X	X	X
Gray Catbird	X	X	X	X	X	X	X	X			X	X
Northern Mockingbird	X	X	X	X	X	X	X	X				X
Brown Thrasher			X	X			X	X				X
Cedar Waxwing	X	X	X	X	X	X	X	X	X	X	X	X
Starling	X	X	X	X	X	X	X	X			X	X
White eyed Vireo												
Blue headed Vireo		X	X	X								
Yellow Throated Vireo	X	X	X		X	X						
Warbling Vireo	X	X	X		X	X	X					
Red eyed Vireo	X	X	X	X	X	X	X	X				
Blue Winged War.	X	X	X	X	X	X	X	X				

Appendix P

Species	Spring				Summer				Winter			
	A	B	C	D	A	B	C	D	A	B	C	D
Tennessee Warbler		X										
Northern Parula		X		X								
Yellow Warbler	X	X	X	X	X	X	X	X				
Chestnut Sided War.			X	X			X	X				
Black Thr. Blue War.		X										
Yellow Rumped War.	X	X	X	X								
Black Thr. Green War.	X	X	X			X					X	X
Blackburnian Warbler		X	X									
Pine Warbler		X	X			X	X					
Prarie Warbler			X	X			X	X				
Cerulean War.		X										
Black & White Warbler	X	X	X	X	X	X	X	X				
Am. Redstart	X	X	X	X	X	X	X	X				
Worm Eating War.	X	X	X		X	X	X					
Ovenbird	X	X	X		X	X	X					
Louisiana waterthrush		X				X						
Northern Waterthrush		X				X						
Common Yellowthroat	X	X	X	X	X	X	X	X				
Hooded Warbler	X	X			X	X						
Canada Warbler		X		X		X		X				
Scarlet Tanager		X	X	X		X	X					
Northern Cardinal	X	X	X	X	X	X	X	X	X	X	X	X
Rose Breasted Grosbeak	X	X	X	X		X	X					
Indigo Bunting			X	X			X	X				
Rufous Sided Towhee	X	X	X	X	X	X	X	X			X	X
Chipping Sparrow	X	X	X	X	X	X	X	X		X		
Field Sparrow			X	X			X	X			X	X
Song Sparrow	X	X	X	X	X	X	X	X	X	X	X	X
Swamp Sparrow	X			X	X			X	X			
White Thr. Sparrow	X	X	X	X					X	X	X	X
Redwinged Blackbird	X	X	X	X	X	X	X	X	X		X	
E. Meadowlark			X									
Rusty Blackbird	X								X		X	
Common Grackle	X	X	X	X	X	X	X	X	X		X	
Br. Headed Cowbird	X	X	X	X	X	X	X	X				
Orchard Oriole	X	X										
Northern Oriole	X	X	X	X	X	X	X	X				
Purple finch	X	X	X	X								
House Finch	X	X	X	X	X	X	X	X	X	X	X	X
Am. Goldfinch	X	X	X	X	X	X	X	X	X	X	X	X
Pine Siskin			X								X	
House Sparrow			X	X			X	X			X	X

A = the area south of P & W (maromas swamp), B= Powerline at Higganum border north to swamp and west to powerline, C= all other upland locations except D D = powerlines and immediate vicinity. X's represent more than one sighting and more than one year. Red X's in summer are breeding birds confirmed

Appendix P

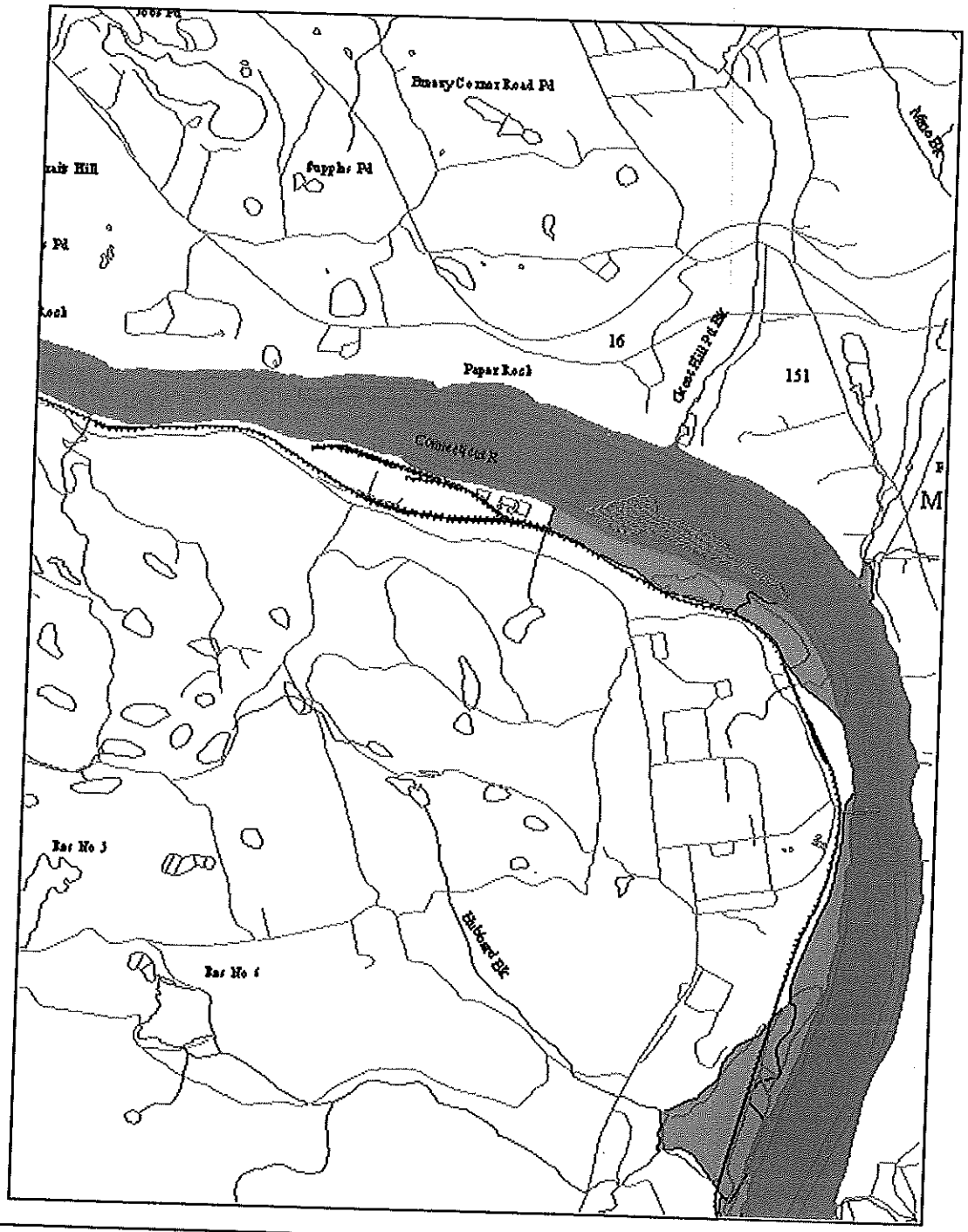

CONNECTICUT RIVER ESTUARY AND TIDAL RIVER WETLANDS COMPLEX
CROMWELL
Wangunk Meadows
Dead Mans Swamp
PORTLAND
Cromwell Meadows
Pecausett Meadows
Arrigoni Bridge
EAST HAMPTON
MIDDLETOWN
N
W
E
S
Higganum Meadows
Salmon Cove
Haddam Meadows
East Haddam Bridge
EAST HADDAM
HADDAM
Chapman Pond
Whalebone Creek
Chester Creek
Selden Creek
CHESTER
Deep River
Joshua Creek
LYME
Pratt Cove
Post Cove
Hamburg Cove
DEEP RIVER
Great Meadow
Lord Cove
Goose Island
ESSEX
Noll Island
Calves Island
OLD LYME
Ragged Rock Creek
Upper Island
I-95
OLD SAYBROOK
North Cove
Great Island
South Cove
Griswold Point
Lynde Point
WETLAND
PUBLIC TRUST WATER
UPLAND
FLOODPLAIN
3 0 3 6 9 12 Kilometers

Appendix Q

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION

CONNECTICUT RIVER RAMSAR PROJECT AREA AND DESIGNATED AREAS

Map Pair 6 (East)



Project Area

Map scale is 1:24,000 when viewed on an 800

Appendix R

CITY OF MIDDLETOWN, CONNECTICUT
Department of Planning, Conservation and Developme
245 DeKoven Drive, Suite 202, Middletown, Connecticut, 06457
(PH) 860-344-3425 (FX) 860-344-3593
William Warner, AICP Department Director

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Urban Forestry
Wetlands and Watercourses
Zoning Board of Appeals
Divisions
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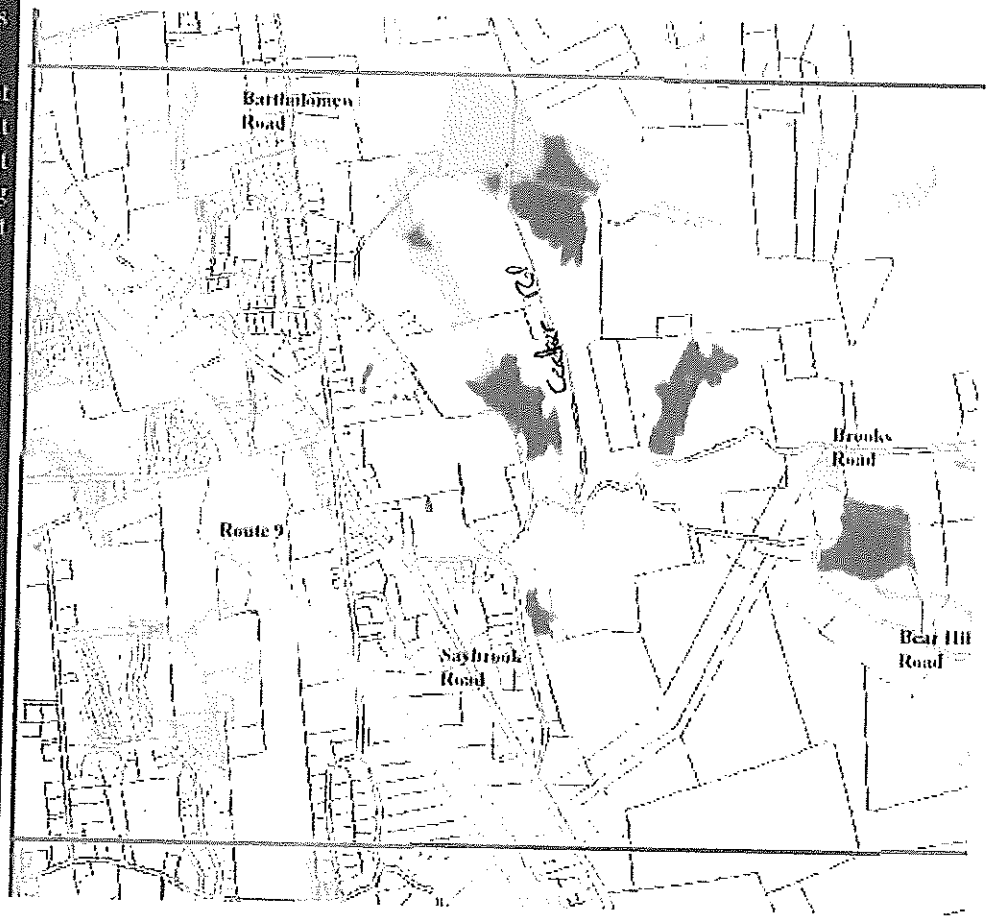
Online version is NOT official, it is only for use as a referen
Official copies can be viewed at the
Department of Planning, Conservation, and Development.

Wetlands Map

NOTE:
(visit site for map sections of rest of Maromas)

KEY

- Yellow areas- Wetland soil
- Blue areas- Bodies of water
- Thick Grey Lines- Roads and Highways
- Thin Grey Lines- Lot lines



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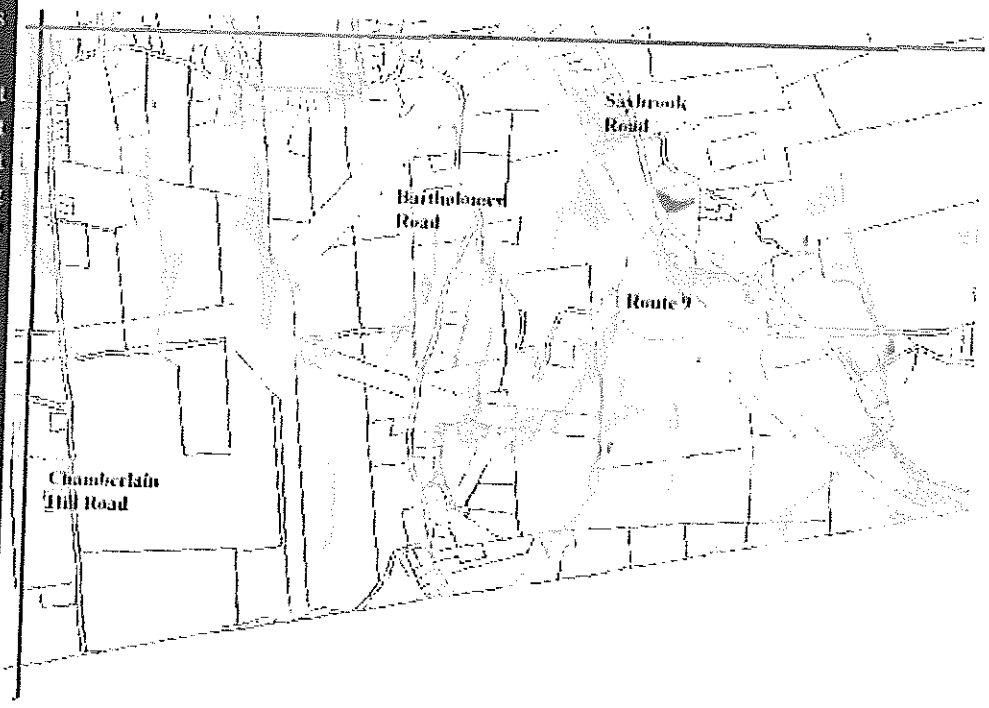
Wetlands Map

KEY

- Yellow areas- Wetland soil
- Blue areas- Bodies of water
- Thick Grey Lines- Roads and Highways
- Thin Grey Lines- Lot lines



Appendix S

APPENDIX S

ERRATA SHEET

This copy of the Appendix S is missing pages 1-20 of the "*Spring 2000 Vernal Pool Inventory*", Middlesex County Soil and Water Conservation District, Spring 2000 and page 2 of the DEP document, "Draft Guidance to Connecticut's Municipal Inland Wetlands and Watercourses Agencies: Vernal Pool Definition/Indicators; February 15, 2000". Missing pages will be provided by AMP.

Appendix Ia. Locations of PVP Sites: Access Granted

PVP #	Aerial Photo	Grid #	Map Block Lot	Owner of Record	Property Street #	Property Street
1	16-44-3225	10c 19a	4 14-2 17	YORK HILL TRAP ROCK QUARRY CO		PRESTON AVE
10	16-44-3222	17a	6 10-3 11	CITY OF MIDDLETOWN		SMITH ST
101	18-51-3577	57b	52 32-2 2	CONN LIGHT & POWER CO		RIVER RD
103	17-50-3565	12d		STATE OF CONN		CEDAR LN
104	17-50-3565	3c		STATE OF CONN		CEDAR LN
105	17-50-3565	12b		STATE OF CONN		CEDAR LN
106	17-50-3567	24a		THE NATURE CONSERVANCY		DRIPPS RD
107	17-50-3567	15a		THE NATURE CONSERVANCY		DRIPPS RD
11	16-44-3220	40a	1 5-1 1	VERNLUND MARTHA S	1087	ATKINS ST
11a	16-44-3220	40a		VERNLUND MARTHA S	1087	ATKINS ST
18	16-45-3238	44b	13 22-1 37-47	CFPA		MERIDEN STREET
19	16-45-3238	35d	13 22-1 37-47	CFPA		MERIDEN STREET
2	16-44-3225	3d 12b	8 20-1 16	CITY OF MIDDLETOWN		MIDDLE ST SOUTH
20	16-45-3240	41a	7 15-1 14	BYSIEWICZ JEAN S(1/3)ETAL(EST) & STANLEY		EAST ST
21	16-44-3225	19b 10d	4 20-1 15-1	THE NATURE CONSERVANCY OF CONN		PRESTON AVE
24	16-45-3240	15b	6 10-5 3	OTT JOHN S & CECILIA S	247	MINER ST
26	16-45-3240	20b	6 10-5 XX	CONN LIGHT & POWER CO		FALLS RD
3	16-44-3225	16c 25a	41 20-1 32-33	CITY OF MIDDLETOWN - WATER SUPPLY		PRESTON AVE (REAR)
32	17-46-3342	4a	15 22-8 2	OPALACZ FRANK J + EDWARD J		BOSTON RD
34	17-46-3342	35d	27 29-1 28	CITY OF MIDDLETOWN		WADSWORTH ST

Appendix Ia. Locations of PVP Sites: Access Granted

PVP #	Aerial Photo	Grid #	Map Block Lot	Owner of Record	Property Street #	Property Street
35	17-46-3342	42c	15 34-1 2	STATE OF CONN COCKAPONSETT PARK		WADSWORTH ST
36	17-46-3342	45a	15 29-2 28	STATE OF CONN		
38	17-46-3341	26c	14 23-6 1C	FERRARA SALVATORE		MIDDLEFIELD ST
39	17-46-3341	36d	15 28-6 127	ARESCO JOHN	329	WEST ST
4	16-44-3225	38bd 39ac	8 20-1 16	CITY OF MIDDLETOWN		MIDDLE ST SOUTH
40	17-46-3339	7b	10 11-1 20	GIONFRIDDO CARMELO V	66	ANNETTE PL
41	17-46-3339	10c	7 11-2 4	MIDDLETOWN BIBLE CHURCH	360	EAST ST
42	17-46-3339	19a	7 11-2 9	DYPA GENEVIEVE MARY+EDWARD JOHN	666	CONGDON ST
43	17-46-3339	25b	11 16-2 24	GROWER SARAH	90	RIDGEWOOD RD
44	17-46-3339	56b	13 22-1 37			
46a	17-46-3337	23cd 32ab	9 7-2 23A	CITY OF MIDDLETOWN		TUTTLE ROAD
46b	17-46-3337	23cd 32ab	9 7-2 23A	CITY OF MIDDLETOWN		TUTTLE ROAD
46c	17-46-3337	23cd 32ab	9 7-2 23A	CITY OF MIDDLETOWN		TUTTLE ROAD
46d	17-46-3337	23cd 32ab	9 7-2 23A	CITY OF MIDDLETOWN		TUTTLE ROAD
47	17-46-3337	24b	9 7-2 23F	CITY OF MIDDLETOWN		TUTTLE ROAD
50	17-46-3337	40c	10 7-2 18B	CONGREGATION ADATH ISRAEL		MILE LA
52a	17-46-3337	60a	10 11-1 24	FRAYNE THOMAS D & LINDA C	116	ASPEN DR
52b	17-46-3337	60a	10 11-1 24	FRAYNE THOMAS D & LINDA C	116	ASPEN DR
53	17-46-3337	60b	10 11-1 24	FRAYNE THOMAS D & LINDA C	116	ASPEN DR
54	17-46-3337	62a	10 11-1 24	FRAYNE THOMAS D & LINDA C	116	ASPEN DR

Appendix Ia. Locations of PVP Sites: Access Granted

PVP #	Aerial Photo	Grid #	Map Block Lot	Owner of Record	Property Street #	Property Street
55	17-47-3349	16a	39 47-2 27	STOANE SHEILA L	435	KELSEY ST
56	17-47-3349	23c	40 47-2 10	CITY OF MIDDLETOWN		ROUND HILL RD
61	17-47-3351	12d	30 35-6 5	CITY OF MIDDLETOWN	1265	SOUTH MAIN ST
62	17-47-3351	50c	31 35-8 14B	JONES ORIN	624	KELSEY ST
63	17-47-3351	50d	31 35-8 14A	GALLITTO DAVID P & DIANE Y	604	KELSEY ST
65	17-48-3456	30c	40 47-2 32	MIDDLESEX CTY COUNCIL		
66	17-48-3456	55b	40 47-2 50C	BALDWIN LINUS C & ANASTASIA	899	ARBUTUS ST
67	17-48-3454	35c	43 36-14 5	MIDDLSEX LAND TRUST		MILLBROOK RD
7	16-44-3222	54a	7 10-5 17	CITY OF MIDDLETOWN		COUNTRY CLUB RD
70	17-49-3460	24b	49 42-1 13	HENRY LUTHER B+NANCY D	52	MOUNT RD
71	17-49-3460	27b	49 37-1 33	BERNSTEIN MATTHEW A ETALS %ALAN BERNSTEIN		SHUNPIKE RD
74a	17-49-3462	7b	43 31-3 1	CONN. VALLEY HINDU TEMPLE		TRAINING HILL RD
74d	17-49-3462	17d	48 31-3 17	FELLOWSHIP BAPTIST CHURCH	20	BROOKS RD
76	17-49-3464	53a	42 31-4 5	SOOBITSKY MOSEY		RESERVOIR RD
77	17-50-3567	50a	49 49-1 13	CONN LIGHT & POWER CO		SHUNPIKE RD & SAYBROO
79	17-50-3565	13c	47 31-6 1	STATE OF CONN		
79a	17-50-3565	13d	47 31-6 1	STATE OF CONN		
79b	17-50-3565	14c	47 31-6 1	STATE OF CONN		
79c	17-50-3565	23a	47 31-6 1	STATE OF CONN		
8	16-44-3222	11d	2 5-1 6E	JDC REALTY LLC	58	BRECHLIN DR

Appendix Ia. Locations of PVP Sites: Access Granted

PVP #	Aerial Photo	Grid #	Map Block Lot	Owner of Record	Property Street #	Property Street
84	17-50-3563	40b	47 25-1 14	OLSON EUGENE R & CAROL P		BOW LN
85	17-50-3563	48b 49a	47 25-1 18	STATE OF CONN. CT VALLEY HOSPITAL		BEAR HILL RD
86	17-50-3563	50b	47 25-1 8	ROBERTS RAYMOND & LOUISE		RESERVOIR RD
87	18-51-3573	13b	53 37-4 21-2	YOUMATZ STEVEN A & STACEY L	290	FREEMAN RD
89	18-51-3573	20d	54 50-1 4	ROCKY RIVER REALTY CO		FREEMAN RD
9	16-44-3222	12a	2 5-1 5	FLANAGAN ROBERTA S & SPLETTSTOESER GERTRUDE E	643	ATKINS ST
90	18-51-3573	29b	54 50-1 58A	CONN LIGHT & POWER CO		SAYBROOK RD
91	18-51-3575	5d 14b	52 32-3 4	PRATT & WHITNEY		RIVER RD
93	18-51-3575	40a	52 -53 37-4 27	BENGTSON RICHARD E		BEAR HILL RD
94	18-51-3575	43d	56 39-1 9	ROCKY RIVER REALTY CO THE		RIVER RD
96	18-51-3575	56c	53 37-4 33	THE ROCKY RIVER REALTY CO		BEAR HILL RD (REAR)
98	18-51-3575	67ab	53 37-4 24	ROCKY RIVER REALTY CO		RIVER RD (REAR)
99	18-51-3577	47a	51 26-4 1	CONN LIGHT & POWER CO		RIVER RD

Appendix Ib. Locations of PVP Sites: Access Denied

PVP #	Aerial Photo #	Grid #	Map Block Lot	Owner of Record	Property Street #	Property Street
13	16-44-3220	57b	2 5-1 2A1	STEEPLEGATE ASSOCIATES LLC		ATKINS ST
14	16-43-3125	17a c	2 9-1 25A	MERIDEN TRUST & SAFE DEPOSIT		ATKINS ST REAR
15	16-45-3238	41c	8 21-3 8	MALESPINI SEBASTIAN SR & MARY	261	SISK ST
16	16-45-3238	23abcd	8 21-2 8	MURPHY J STEPHEN + EVELYN	75	WHITE RD
17	16-45-3238	23cd	8 21-2 8	MURPHY J STEPHEN + EVELYN	75	WHITE RD
22	16-45-3240	53a	7 16-1 128	LYMM PETER & KELLY A	114	WESTWOOD LA
23	16-45-3240	53c	7 16-1 124	CORBETT JOHN W JR & ANNE M	68	WESTWOOD LN
25	16-45-3240	17b	6 7-1 107	CAHILL GAIL F & JAMES T	74	GOODMAN DR
27	16-45-3241	38a	6 10-3 2	BADK LLC C/O KCM INC	400	MIDDLE ST
31	17-46-3344	43a	31 46-1 2	GHQ INC		BRUSH HILL RD
33	17-46-3342	23d	15 28-4 3	OPALACZ FRANCES T		WADSWORTH ST
37a	17-46-3341	24ac	14 22-5 33	COTE LAUREL M & RICHARD W	277	BOSTON RD
37b	17-46-3341	24ac	14 22-5 33	COTE LAUREL M & RICHARD W	277	BOSTON RD
37c	17-46-3341	24ac	14 22-5 31	CYRANOWICZ ROBERT D		BOSTON RD (REAR)
37d	17-46-3341	24ac	14 22-5 33	COTE LAUREL M & RICHARD W	277	BOSTON RD
37e	17-46-3341	24ac	14 22-5 31	CYRANOWICZ ROBERT D		BOSTON RD (REAR)
45	17-46-3337	4d	9 7-2 2	TUTTLE ROAD ASSOCIATES		NEWFIELD ST (REAR)
48	17-46-3337	33b	9 7-2 22	CZAJA JOSEPHINE U (EST) & COLEMAN LUCILL	1041	NEWFIELD ST
49	17-46-3337	33d	9 7-2 22	CZAJA JOSEPHINE U (EST) & COLEMAN LUCILL	1041	NEWFIELD ST
5	16-44-3222	68cd	4 20-1 7	PIERCE LINDA B		COUNTRY CLUB RD

Appendix Ib. Locations of PVP Sites: Access Denied

PVP #	Aerial Photo #	Grid #	Map Block Lot	Owner of Record	Property Street #	Property Street
51	17-46-3337	43d	10 7-2 19	LABBADIA LEWIS R & KATHLEEN J & CARL M	903	NEWFIELD ST
57	17-47-3349	39c	32 47-2 3	WILSON RALPH	2200	SOUTH MAIN ST
58	17-47-3349	39c	32 47-2 3	WILSON RALPH	2200	SOUTH MAIN ST
59	17-47-3349	40d	32 47-2 5AA	RAFFA LUIGI & J TINA		TALCOTT RIDGE DRIVE
60	17-47-3349	48b	32 47-2 134	RIVERA RUBIN & SOBZAK CARMEN	242	ACORN DR
64	17-47-3351	58bd	31 47-1 9AD	GUILMARTIN LILLIAN M	489	COLEMAN RD
72	17-49-3460	38b	45 48-1 2AA	GAWLAK CHARLES J & ANN MARIE	1188	MILLBROOK RD
73	17-49-3462	12a	43 30-24 15	HOULE TODD M & DEBRA S		LEE ST
74b	17-49-3462	8a	43 31-3 9	CARTA PHILIP F JR	506	BARTHOLOMEW RD
74c	17-49-3462	8c	48 31-3 19	COSKEY EVELYN A	179	TRAINING HILL RD
78	17-50-3567	56b	50 49-1 17	PEAR ELIZABETH M & JOEL	1764	BARTHOLOMEW RD
80	17-50-3565	38d	48 37-2 4+5	LEMIEUX DAVID L	81	TOLL GATE RD
92	18-51-3575	19b	52 38-1 2B	HILLS EDWARD III		BROOKS RD
95a	18-51-3575	46ab	53 37-4 30	SCHILKE REALTY ASOC	492	BEAR HILL RD
95b	18-51-3575	46ab	53 37-4 30	SCHILKE REALTY ASOC	492	BEAR HILL RD

Appendix Ic. Locations of PVP Sites: No Response

PVP #	Aerial Photo #	Grid #	Map Block Lot	Owner of Record	Property Street #	Property Street
100	18-51-3577	49b	51 26-4 2			
102	18-51-3577	64d	47 31-6 7			
12	16-44-3220	48c	1 5-1 2	RIZZA MICHAEL C/O JOSEPH RIZZA		ATKINS ST
28	16-45-3242	15cd	5 2-3 6	MIDDLETOWN APARTMENT ASSOC LLC		EAST ST REAR RUSSETT PK
29	16-45-3242	15d	5 2-3 7	WESTLAKE ASSOCIATION INC		EAST ST REAR
30	17-46-3346	16b	32 46-1 14-1	BOSCARINO NANCY TRUSTEE		SOUTH MAIN ST
6	16-44-3222	50a	3 10-2 1B+1A	MANTHAY ROBERT T & LINDA L	268	BELL ST
68	17-48-3454	44b	44 36-16 7D	JACKSON FREDERICK L		WILCOX RD
69	17-48-3452	49b	26 30-1 52A	KINGSBURY ARTHUR F JR ETALS C/O JOSEPH LYNCH	60	SEARS ST
75	17-49-3462	48c	44 36-16 4	FLANAGAN DANIEL P	470	CHAMBERLAIN RD
81	17-50-3565	50d	48 37-4 37X+37XX	HELFANT IRWIN + NANCY		BEAR HILL RD
82	17-50-3563	13d	46 25-1 2+3+25+2	ARMETTA AND ASSOCIATES LLC C/O CADDEN AND IVE	1349	RIVER RD
83	17-50-3563	20ab	46 25-1 24-24A	SEAGRAVE JOHN C	830	BOW LN
88	18-51-3573	16d	53 37-4 23	FLEISCHER DAVID N AS TRUSTEE	3573	RIVER RD

Appendix I d. Example of a Request for Access to a PVP Property in Middletown, CT

March 3, 2000

UNITED AIRCRAFT
400 MAIN ST
EAST HARTFORD, CT

Subject: Possible Vernal Pool at RIVER RD, Middletown, CT
Map/Block/ Lot 52 32-3 4

Dear Landowner,

You may have a valuable natural resource in your own backyard!

As you may have heard, in recent years the worldwide population of certain frogs and salamanders has plummeted due to the scarcity of suitable habitats. Many of these amphibians reproduce only in short-lived ponds called "vernal pools." Vernal pools are small low-lying areas that fill with water during the spring months and lack a permanent fish population.

On behalf of the Middletown Inland Wetlands Commission, the Middlesex County Soil & Water Conservation District has teamed up with students from Wesleyan University to investigate the status of amphibian populations at vernal pools in Middletown. We have determined from town maps and other information that there may be a vernal pool on your property at the above address. Therefore, we would like to ask your permission to enter the property and inspect the area that may contain a vernal pool.

Please indicate your approval on the stamped postcard that is included with this letter and return it to us by March 25, 2000. The "window of opportunity" for this type of study is restricted to the months of March, April, and May, and will not be open again until this time next year.

If you have any questions or concerns, please call me at (860)346-3282.

Sincerely,

Danielle Piraino
Field Resource Specialist
Middlesex County Soil and Water Conservation District

Appendix III. Field Data Sheet: Spring 2000 Vernal Pool Inventory of Middletown, CT

Potential Vernal Pool Inventory Field Sheet

Investigators: _____ Date:_____ Time:_____ _____

Town: _____ Site #:_____ (arrival) (departure)

Present Weather Conditions (circle): sunny partly cloudy cloudy rainy

. POOL CHARACTERISTICS

Parameter	Current Conditions (to edge of standing water)	Max. Extent of Water (to edge of water-stained leaves)
MAX LENGTH (ft)		
MAX WIDTH (ft) (⊥ to length)		
MAX DEPTH (in)		

a) Presence of Fish in Pool? (Y or N)

(b) INLET? (Y or N) Width (ft) _____ Flowing? (Y or N)

c) OUTLET? (Y or N) Width (ft) _____ Flowing? (Y or N)

d) % Canopy Cover above Pool: (circle one: 0 – 25% 25 – 50% 50 – 75% >75%)

. SURROUNDING HABITAT (within ~ 500 ft of pool)

General Description (i.e. shape of water body, substrate, vegetation type, land use, roads, proximity to wetlands or other vernal pools, other interesting features):

_____

_____

_____

_____

_____

Appendix III. Field Data Sheet: Spring 2000 Vernal Pool Inventory of Middletown, CT

3. BIOLOGICAL CHARACTERISTICS

A. Evidence of Breeding of Obligate Species

(1) Egg Masses of Obligate Species

	Wood Frog	Spotted Salamander	Marbled Salamander	Jefferson-blue spotted	Unidentified
#Single Egg Masses					
# Egg Mass Clusters (2 – 10 egg masses)					
# Egg Mass Clusters (11 – 25 egg masses)					
# Egg Mass Clusters (25 – 50 egg masses)					
# Egg Mass Clusters (> 50 egg masses)					

(2) Wood Frog Calls (circle one):* 0 1 2 3

*0 = no calls 1 = individual calls, no overlap 2 = some overlap of calls 3 = continuous chorus, cannot distinguish indiv. calls

B. Evidence of Development of Obligate Species (Larvae/Tadpoles)

Microhabitats Sampled with Dip Net

Microhabitat Type	Shrubs/ Woody Growth	Submerged Plants	Emergents (grasses, sedges, rushes)	Sphagnum hummocks	No vegetation	Other
# Dip Net Sweeps - Shallow (0 – 3 feet from shore)						
# Dip Net Sweeps - Deep (3 – 6 feet from shore)						

Larval Abundance of Obligate Species

Species	Larval /Tadpole Abundance – Shallow[2]	Larval / Tadpole Abundance - Deep[2]	Adults (yes or no)
Wood Frog			Yes No
Spotted salamander			Yes No
Jefferson - blue spotted			Yes No
Marbled salamander			Yes No
Unidentified salamander			Yes No
Invertebrates	Adult Abundance– Shallow	Adult Abundance-Deep	
Fairy Shrimp			

[2] Total # per 7 sweeps of net, 1 m (3.3 ft) in length

C. Presence of Facultative Species / Other Notes[1]

Species	Observations (life stage of organism, habitat use, calls, other activities such as mating)

[1] Includes: Amphibians- four-toed salamander, spotted newt, spring peeper, Eastern spadefoot toad, green frog, pickerel frog, gray treefrog, Eastern American toad Reptiles: snapping turtle, painted turtle, spotted turtle

Appendix III. Field Data Sheet: Spring 2000 Vernal Pool Inventory of Middletown, CT

Potential Vernal Pool Photo Log

Investigators: _____ Date:_____ Town: _____ Site Number:_____

Film Roll #_____

Photograph an example of each piece of evidence collected. Be sure to include:
-several photos of PVP site
-photos of egg masses, larvae, adults of each species observed

Photo #	Time of Day	Description

Potential Vernal Pool GPS Log

Unit Used: GPS III GPS 12

Waypoint Code	Descriptive Location	X Coordinate (NAD 83 Datum)	Y Coordinate (NAD 83 Datum)	Elev. (m)	Error (m)

Appendix III. Field Data Sheet: Spring 2000 Vernal Pool Inventory of Middletown, CT

Sketch of Site

nvestigators: _____ **Date:**_____ **Town:** _____ **Site Number:**_____

Sketch path to vernal pool and vernal pool site. Include:

- major roads
- landmarks
  approximate locations of waypoints (GPS readings)
- general sketch of vernal pool, vegetation, locations of obligate species, egg masses, adults

Appendix IV. Soil Types of Verified Vernal Pools in Middletown, CT

Vp#	Soil Type
10	WETHERSFIELD LOAM
101B	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
103	CHARLTON-CHATFIELD COMPLEX
104	CHARLTON-CHATFIELD COMPLEX
105	CHARLTON-CHATFIELD COMPLEX
106	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
107	CHARLTON-CHATFIELD COMPLEX
11A	LUDLOW SILT LOAM
18	WETHERSFIELD LOAM
19	LUDLOW SILT LOAM
1A	WILBRAHAM AND MENLO SOILS
1C	ADRIAN AND PALMS SOILS
2	CHESHIRE-HOLYOKE COMPLEX
34	WETHERSFIELD LOAM
42	WETHERSFIELD LOAM
42A	WETHERSFIELD LOAM
46A	BERLIN SILT LOAM
46B	BASH SILT LOAM
46C	BASH SILT LOAM
4A	
4B	WILBRAHAM AND MENLO SOILS
4C	
4D	
52A	BERLIN SILT LOAM
52B	BERLIN SILT LOAM
54	BERLIN SILT LOAM
56	CHESHIRE-HOLYOKE COMPLEX
61	WILBRAHAM AND MENLO SOILS
63	LUDLOW SILT LOAM
66	CHESHIRE-HOLYOKE COMPLEX
66A	CHESHIRE-HOLYOKE COMPLEX

Appendix IV. Soil Types of Verified Vernal Pools in Middletown, CT

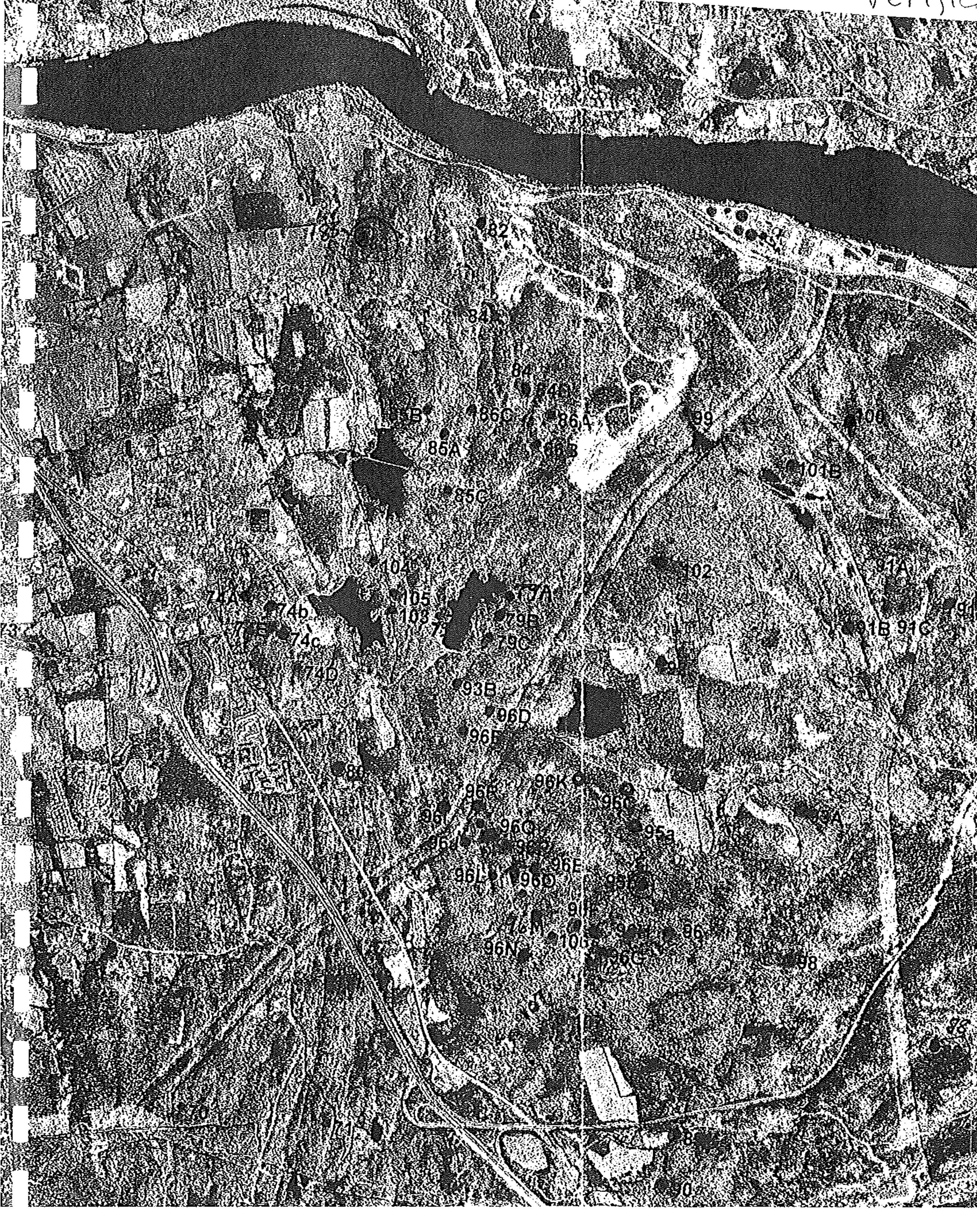
Vp#	Soil Type
66B	CHESHIRE-HOLYOKE COMPLEX
66C	CHESHIRE-HOLYOKE COMPLEX
70	CHARLTON-CHATFIELD COMPLEX
71	CHARLTON-CHATFIELD COMPLEX
74A	CHARLTON-CHATFIELD COMPLEX
74D	CHARLTON-CHATFIELD COMPLEX
74E	CHARLTON-CHATFIELD COMPLEX
79	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
79C	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
84	CHARLTON-CHATFIELD COMPLEX
84A	RIDGEBURY
84B	CHARLTON-CHATFIELD COMPLEX
85A	CHARLTON-CHATFIELD COMPLEX
85B	CHARLTON-CHATFIELD COMPLEX
85C	RIDGEBURY
86A	CHARLTON-CHATFIELD COMPLEX
86B	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
86C	CHARLTON-CHATFIELD COMPLEX
87	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
89	CHARLTON-CHATFIELD COMPLEX
90	CHARLTON-CHATFIELD COMPLEX
91A	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
91B	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
91C	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
93A	CHARLTON-CHATFIELD COMPLEX
93B	CHARLTON-CHATFIELD COMPLEX
94	SACO SILT,LOAM
96	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
96B	ROCK OUTCROP-HOLLIS COMPLEX
96E	CHARLTON-CHATFIELD COMPLEX
96F	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX

Appendix IV. Soil Types of Verified Vernal Pools in Middletown, CT

Vp#	Soil Type
96G	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
96H	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
96J	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
96K	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
96L	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
96O	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
96P	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
96Q	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
98	HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX
99	CHARLTON-CHATFIELD COMPLEX

Appendix T

Verifie



82
84
84
86C
86A
85A
85C
99
100
101B
104
102
105
103
77A
79B
79C
74A
74b
74c
74D
91A
91B
91C
93B
96D
96B
80
96F
96K
96C
96Q
95a
96E
96L
96D
96N
98
90

Appendix U

APPENDIX ITEM

State of CT DEP Fishery Report on Maromas Area

(personal communication- 2004)

Fish Stocking

Eric Schluntz, DEP,writes: *"We stock a few trout in Bible Rock Brook in the "Roadside Park" along Route 154. I think that is the only area we stock on NU-Maromas based on the boundaries shown on the DEP hunting map."*

Anadromous Fishery

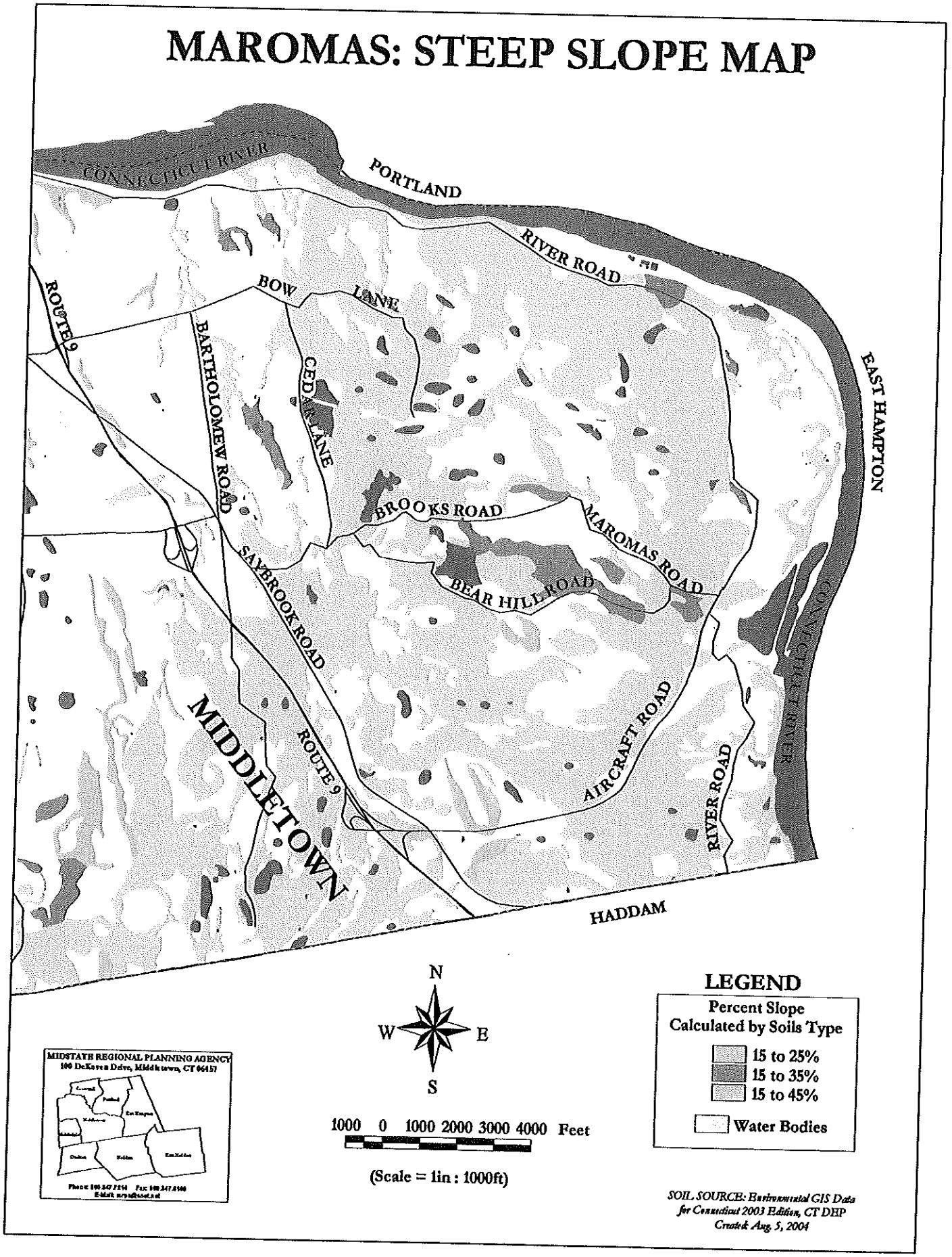
Steve Gephardt, DEP writes: *"The Connecticut River has every species of anadromous fish found in CT swimming past. The area has special importance to shortnose sturgeon as a holding/feeding area but for the rest of the species (Atlantic salmon, sea-run brown trout, American shad, gizzard shad, hickory shad, alewife, blueback herring, striped bass, rainbow smelt, sea lamprey, and white perch), it is just a migratory pathway. There is some commercial fishing for shad with drift nets in the area in season but no other particular opportunities for catching or observing any of these species.*

If one defines Maromas as the area between the Haddam town line and the brook that flows out of the Asylum Reservoir #1, all streams that flow into the Connecticut River in Maromas are small and offer little opportunity for anadromous fish. The slight exception is Hubbard Brook, to the south, where alewives enter to spawn on a few occasions in the spring. They can only access a very short distance of the brook due to the presence of beaver dams. However, even if the beaver dams disappear, the runs would not be able to go much farther due to the steepness of the streams and the railroad culvert on the south branch."

Appendix V

large version (accompanies report)

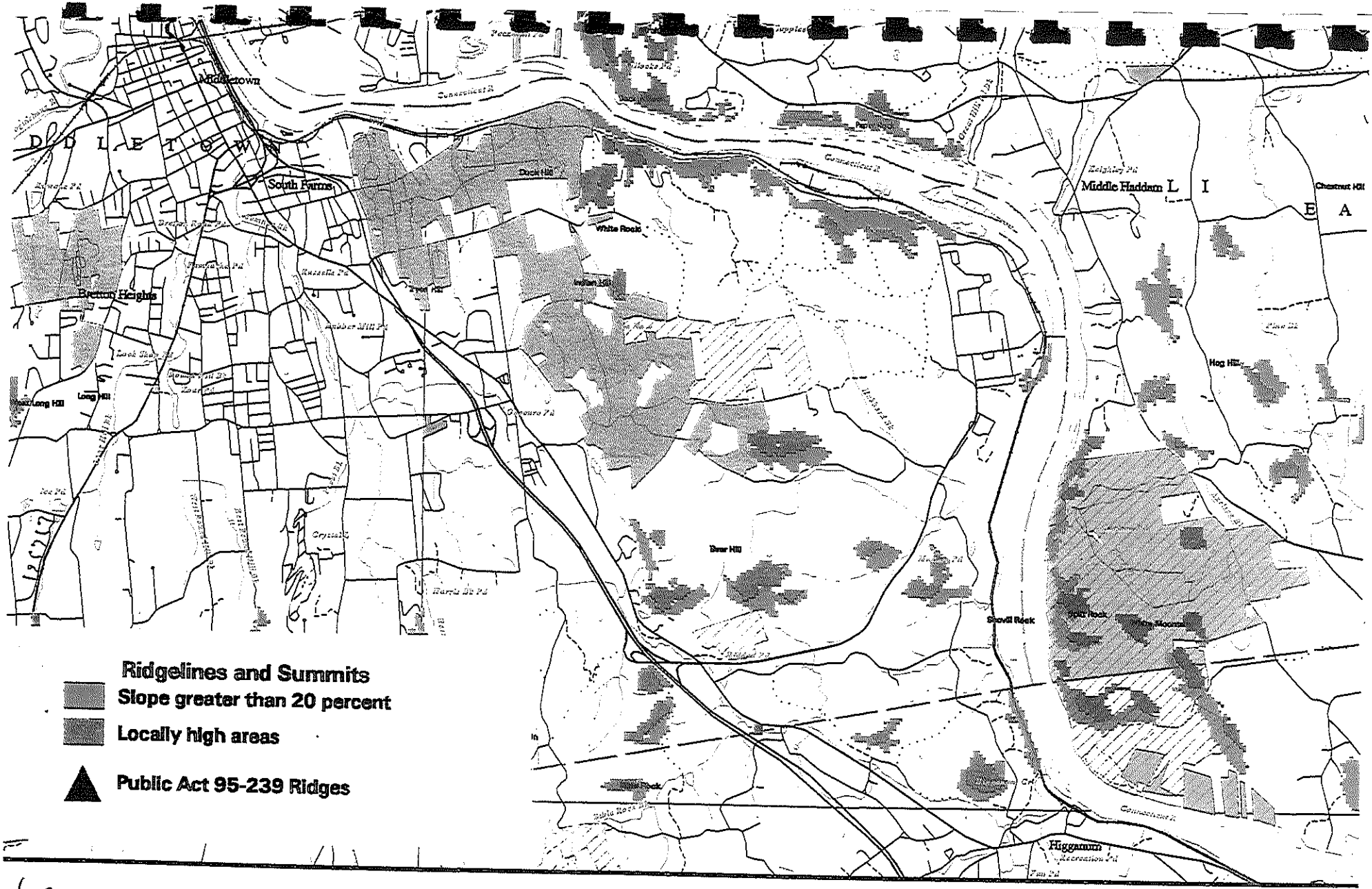
MAROMAS: STEEP SLOPE MAP



SOIL SOURCE: Environmental GIS Data for Connecticut 2003 Edition, CT DEP
Created: Aug. 5, 2004

Appendix V

Appendix W



Hebron

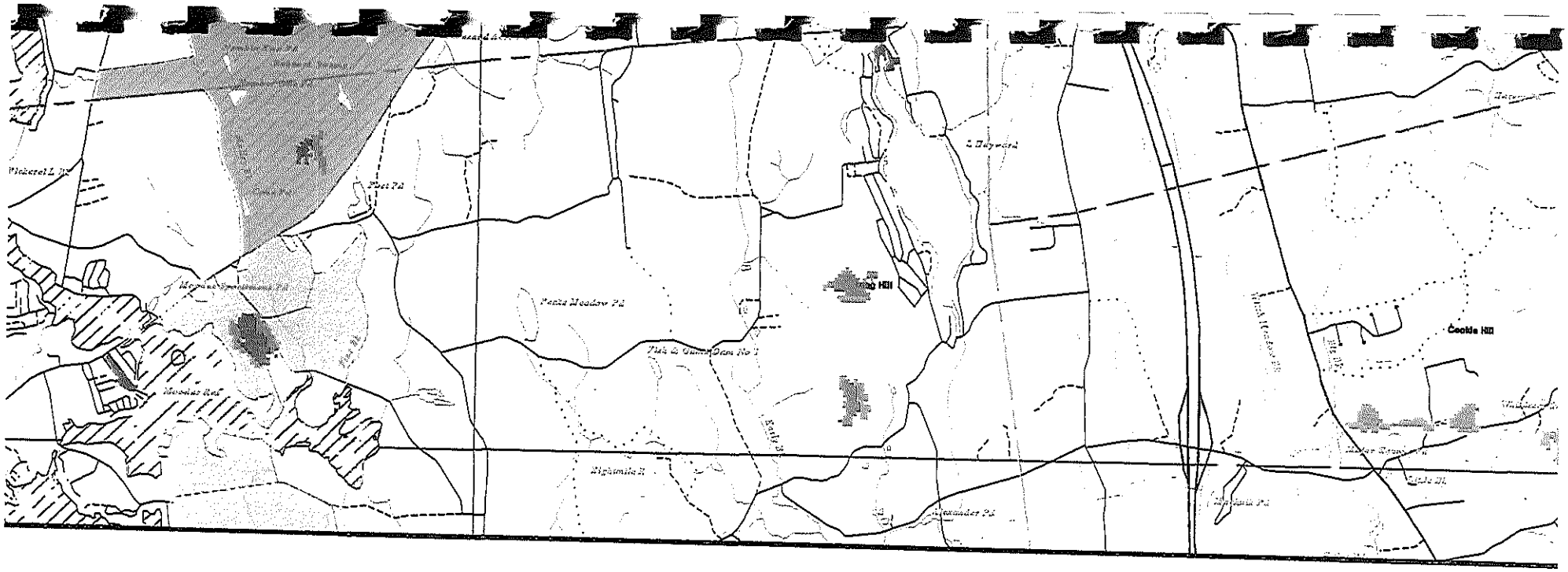
EBRON REGION, CONNECTICUT

lines and Summit Protection Policy Areas

State Land

- FLOOD CONTROL
- WATER ACCESS
- FISH HATCHERY
- DEP OWNED WATERBODY
- DEP OTHER PROPERTY

Appendix W



EXPLANATION

This map identifies areas evaluated for protection under the Ridgeline Protection Policy. Areas were selected based on the following methodology. Areas of slope greater than twenty percent and locally high areas were derived from U.S. Geological Survey digital elevation model(DEM) data. To obtain only those locally high areas associated with steep slopes,selection criteria required that hilltops and summits be within 1500 feet of steep slopes. Built up areas were eliminated by aggregating the Land Use and Land Cover classes and excluding categories representing developed land. The minimum mapping unit for selected area is 10 acres.

The information is not the result of field work or a comprehensive study. The data is appropriately used as a general guide to areas which may warrant further investigation for review under the Ridgeline Protection Policy. The actual extent of the ridgeline or summit must be determined by consulting more detailed topographic mapping and conducting field reviews, as necessary. Areas delineated are not part of any state or local regulatory program. The Department of Environmental Protection does not guarantee the accuracy or completeness of this information.

DATA SOURCES

DIGITAL ELEVATION MODEL(DEM) --DEMs consist of a regular array of elevation values collected by 7.5-minute quadrangle units and stored as profiles of 30 meters (30m x 30m spacing). Terrain features are generalized by being reduced to a regularly spaced horizontal grid limiting the ability to recover accurate values for specific features. Older processing methods introduced systematic errors resulting in the characteristic horizontal banding of some DEMs.

DEP PROPERTY --The most available information in digital form reflecting property owned by the Connecticut Department of Environmental Protection (DEP). Compiled from varied sources and may not be accurate in all cases. Mapped and digitized by DEP at 1:24,000 scale. Periodically updated, with most recent major update occuring in May, 1997.

BASE MAP INFORMATION --Political boundaries, roads, trails, railroads, and hydrography originally derived from 1:24,000 scale 7.5 Minute U.S. Geological Survey Digital Line Graphs and enhanced by the Connecticut Department of Environmental Protection. The data is neither complete nor current and based on 1:24,000 scale Topographic Quadrangle maps published between 1969 and 1984. Annotation derived in part from U.S. Geological Survey Geographic Names Information System and information on file at the Connecticut Department of Environmental Protection.

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Appendix X

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

RIDGELINE AND SUMMIT PROTECTION POLICY

THE POLICY

The protection of ridgelines and summits is a resource management objective of the Department. It is Department policy to minimize adverse impacts on the visual, biological, geological and recreational qualities of ridgelines and summits.

POLICY IMPLEMENTATION

SCOPE:

- Any direct or indirect action by the Department on a ridgeline or summit must consider protection of the qualities of this resource. Direct actions are activities that can cause an immediate consequence to or change in a ridgeline or summit (e.g., vegetation removal, development activities, surface alteration, granting of property rights, etc.) on land within the control of the Department. Another type of direct action is the establishment of land acquisition priorities. Indirect actions involve activities by another party that may promote or cause impacts to the ridgeline or summit and which the Department has some discretionary ability to influence. Examples of these types of activities include extension of public services, project review comments, establishing grant priorities, responding to technical assistance requests, permitting considerations and review of Forest Practice Notifications for the harvesting of forest products.
- This policy is intended to provide a consistent approach to actions initiated and within the existing prerogative of the Department that could impact ridgelines and summits. Also, it is intended to form a basis for making Departmental recommendations regarding actions that are proposed by others. Where non-agency property is involved, the Department shall educate landowners as to the value of ridgelines and summits and assist them in minimizing adverse impacts. The Department will not withhold its approval of any permits solely on the basis of this policy.
- This policy supplements other policies and program guidelines that may exist.
- This policy shall not apply to actions necessary to control fire or other emergency situations.
- The Commissioner may vary this policy to deal with tornados and other natural disasters.

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Appendix X

IDENTIFICATION:

- The traprock ridges identified in Public Act No. 95-239 shall be one category of ridgeline that is afforded consideration under this policy. The name and location of these ridges are contained on the attached list and are also shown on the maps identified in the next item.
- The ridges and summits identified through a statewide screening level analysis and depicted on the GIS generated maps (Ridgelines and Summits) that are on file in the Natural Resources Center shall be another category of resource that is afforded consideration under this policy. The criteria used in developing these maps is explained on the maps's legend. These maps are to be used as a preliminary indicator of ridgelines or summits that may require special consideration during the development or formulation of a proposed action.

PROCEDURES:

- Before any office initiates any action that might affect the targeted resource, it should confirm whether the proposed action is within an identified ridgeline or summit. The colored areas, both steep slopes and locally high areas, that are depicted on the above referenced maps represent potential locations of ridgelines or summits meriting protection. The actual extent of the ridgeline or summit must be determined by consulting more detailed topographic mapping and conducting field reviews, as necessary.
- If the proposed action may reasonably have a negative impact on the visual, biological, geological or recreational values of the ridgeline or summit, the office initiating the action shall forward to the Office of Environmental Review (OER) a brief description of the proposed action, any mitigation measures that have been incorporated into the project, and a map that clearly identifies the location of the project. The sponsoring office should not proceed with the proposed project until a response is received from the OER. The OER will provide timely evaluations and responses. Also, in instances where the first category of ridgeline is involved, the sponsoring office must confirm whether the municipality has adopted any form of development requirements for the ridgeline and whether the proposed action conforms to these requirements.
- The OER's evaluation of whether a proposed action will negatively impact the visual qualities of a ridgeline or summit shall be considered from two perspectives. The first perspective is the view of the resource feature from distant vantage points; the second perspective is the quality of the environs at viewpoints on the ridgeline or summit.

- As necessary, the OER may request assistance from other offices of the Department in reviewing proposed actions.
- The significance of the qualities of a ridgeline or summit will be determined by the OER and the sponsoring office. The extent to which an action is allowed to affect an identified resource will balance the significance of the resource with the resultant impacts and the benefits derived from the proposal.
- When a project has a significant negative effect on the visual, biological, geological or recreational values of a ridgeline or summit, the sponsoring office shall investigate alternate locations for the proposed action.
- In all cases when an action will adversely affect an identified ridgeline or summit, the evaluation and application of reasonable mitigation measures must be considered. Examples of potential mitigation measures are listed below.
    - Restrictions on tree removal for view creation
    - Landscaping requirements to minimize structure visibility
    - Limitations on the size of trees that may be removed
    - Density requirements related to slope gradient
    - Restrictions on structure colors, height and reflectivity of windows and roofs
    - Buffers and setbacks from ridges, slope toe and other features
    - Camouflage of communication towers as trees or other natural objects
    - Shared use of communication towers
    - Restrictions on exterior lighting
    - Clustering to avoid blocking scenic vistas
    - Paralleling roads and walkways to the slope contour
    - Placement of utilities underground
    - Limitations on size and placement of radio and television towers and antennas, chimneys and other vertical projections
    - Maintaining continuity of natural features
    - Avoidance of sensitive biological, geological or recreational resources
- In instances where the protection of a ridgeline and summit can not adequately be accommodated by applying mitigation techniques and the sponsoring office feels that it must proceed with the proposed action, the Commissioner or his designee shall resolve the conflict.

Appendix X

- Forest Practice Notifications submitted to the Forestry Division for commercial forest products harvests on private land need not be forwarded to the OER. In reviewing such notifications, the Forestry Division shall advise those making submissions of the environmental significance of ridgelines and summits, any potential negative impacts caused by timber harvesting and methods to minimize and mitigate such impacts.

Sidney J. Holbrook, Commissioner

14 July 97
Date

This is a discretionary policy document. Its applicability to a given circumstance rests with the discretion of the Commissioner of Environmental Protection or his designee. The policies and procedures in this document are intended solely for the preliminary guidance of employees of the Department. They are not intended to, nor do they, constitute rulemaking for the agency, and they may not be relied upon to create a right or a benefit, substantive or procedural, enforceable at law or in equity, by any person. The Department may take an action that is at variance with the policies or procedures contained in this document if the Commissioner considers it appropriate in a specific case.

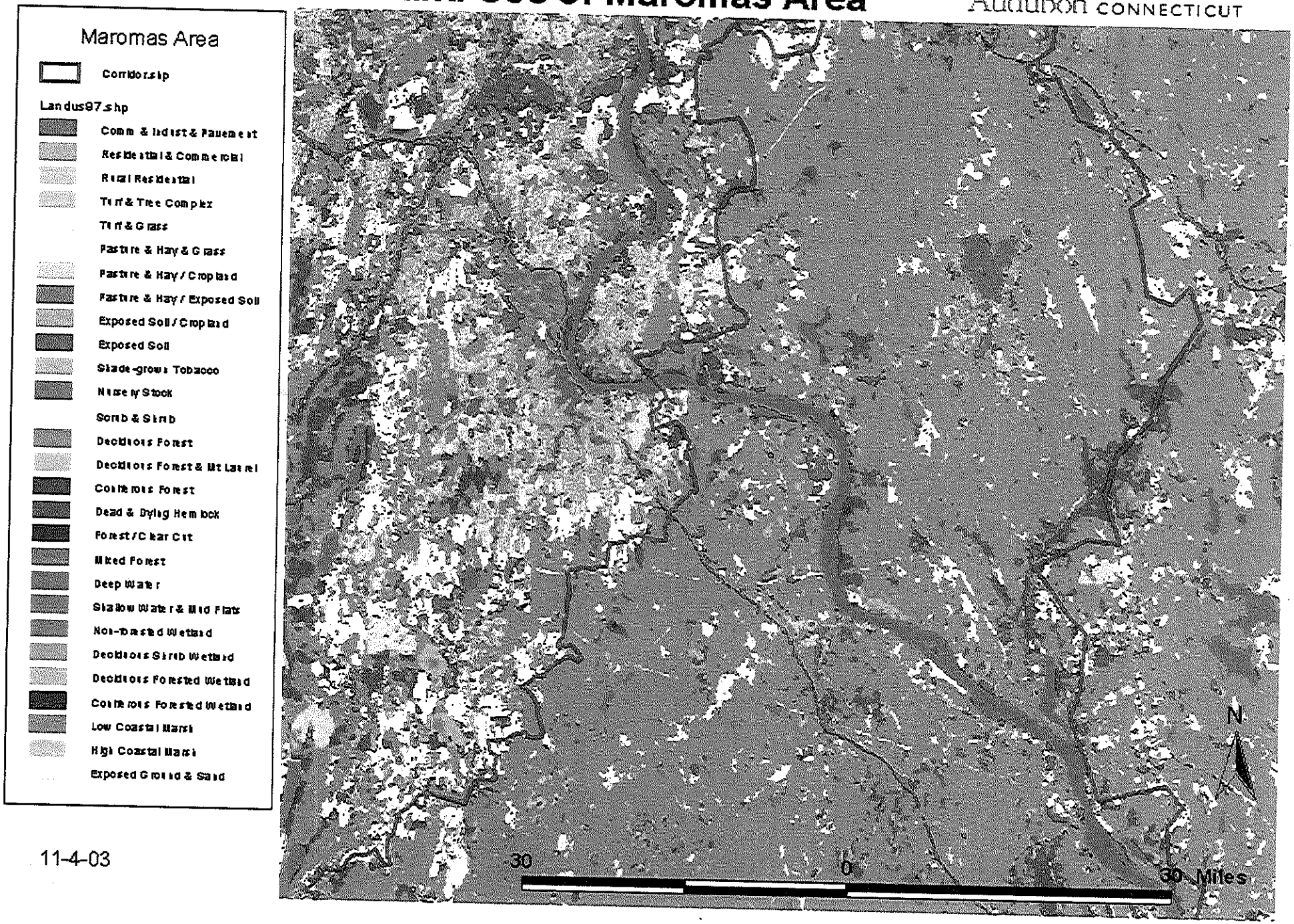
Attch.

Appendix X

Appendix Y

Land Use of Maromas Area

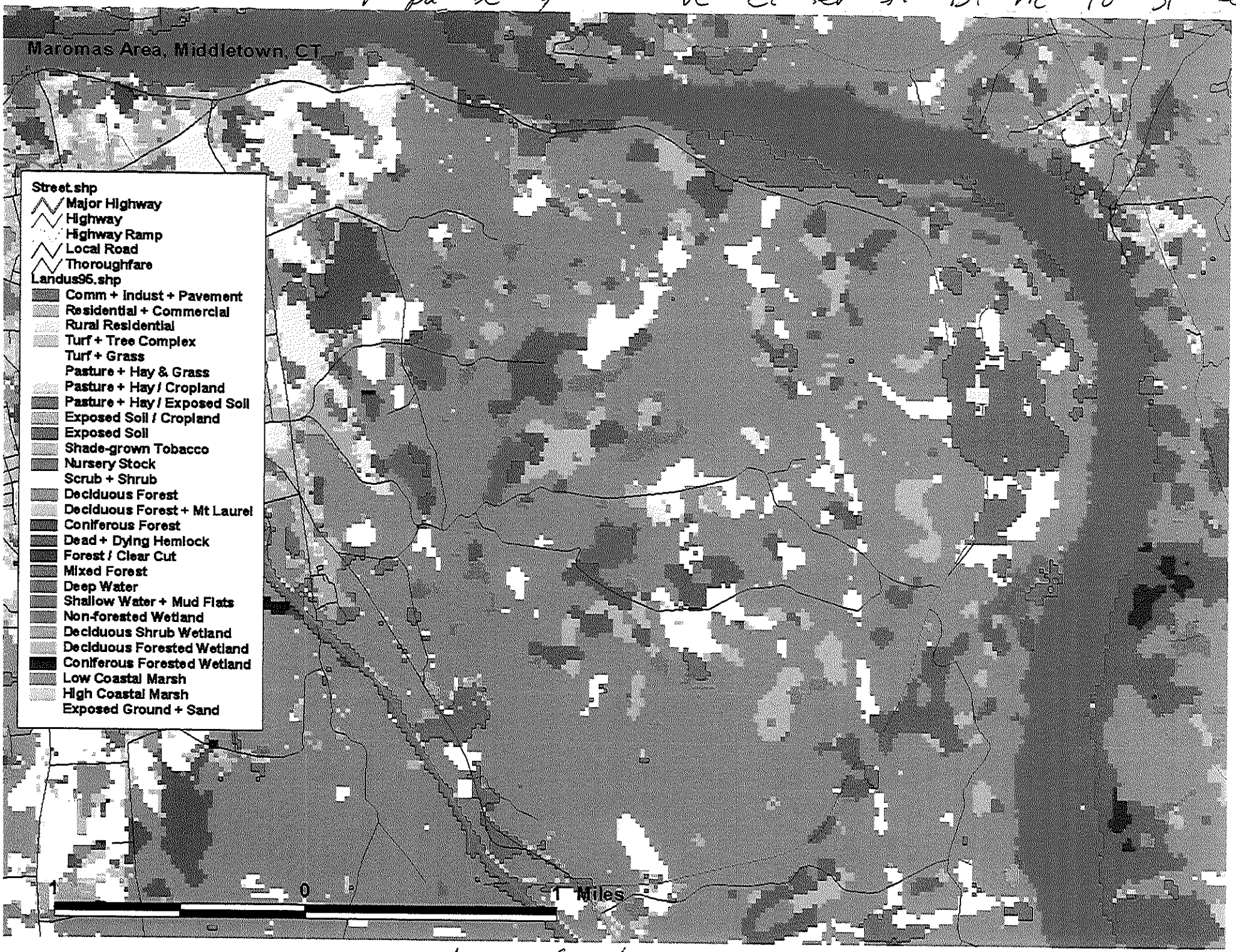
Audubon CONNECTICUT



11-4-03

Appendix Y

Prepared by CT River Conservation District for "Strategic Plan" report, 8/2004



Appendix Y

Note: See DEP 1995 Land Use Categories

Mad Rivers

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION

GIS Data Guide Lookup Table
1995 Landuse Categories

1. COMMERCIAL & INDUSTRIAL & PAVEMENT:

   includes high-density built-up areas which are typically associated with commercial and industrial activities. Highlights primarily inner city commercial and industrial areas, dense town centers, isolated large structures and industrial complexes, and larger transportation routes. These areas will contain a high percentage of land cover types such as concrete and asphalt surfaces, roofs, roads, and other impervious surfaces. Also includes some residential areas, barren areas such as mining operations, exposed bedrock, gravel surfaces; also, possibly includes some bare soil areas

2. COMMERCIAL & RESIDENTIAL:

   includes areas outside of the inner city and which are typically associated with smaller commercial structures, residential neighborhoods, residential streets, house sites with lawns, including patches of vegetation, isolated groups of houses and some farming areas, such as turf & grass or pasture & hay & grass; also includes some areas adjacent to highways and major roads

3. RURAL RESIDENTIAL:

   includes mostly isolated residential structures, residential streets, house sites with lawns; also, possibly includes areas adjacent to residential and commercial areas and some farming areas, such as turf & grass or pasture & hay & grass

4. TURF & TREE COMPLEX:

   associated mostly with residential areas and represents areas covered by cultivated lawns with a tree overstory such as is found in a typical residential neighborhood; also, possibly includes areas adjacent to forest areas

5. TURF & GRASS:

   a compound category of undifferentiated grasses; includes mostly cultivated lawns, turf farms, golf courses, and other grassy areas

6. PASTURE & HAY & GRASS:

   a compound category of undifferentiated grasses; includes mostly agricultural pastures, both improved and unimproved; also, possibly includes large expanses of grass found in urban landscapes

7. PASTURE & HAY/CROPLAND:

   compound seasonal category; includes mostly undifferentiated grasses in the dormant season and some form of agricultural crop, typically silage/sweet corn, in the growing season

8. PASTURE & HAY/EXPOSED SOIL:

   compound seasonal category; includes mostly undifferentiated grasses in the dormant season and bare soil following harvest in the growing season

9. EXPOSED SOIL/CROPLAND:

   compound seasonal category; includes mostly bare soil in the dormant season and some form of agricultural crop, typically silage/sweet corn, in the growing season

10. EXPOSED SOIL:

    includes mostly bare soil areas which are associated with an agricultural context; could possibly include what might be perceived as barren lands or urban lands because of similar spectral reflectance properties

11. SHADE-GROWN TOBACCO:

    represents shade grown tobacco during the growing season

12. NURSERY STOCK:

    represents nursery stock grown as ornamental landscape shrubs

13. SCRUB & SHRUB:

    includes dormant agricultural pastures reverting to forest and utility rights-of-way characterized by patches of small woody vegetation and undifferentiated grasses; also, possibly includes unmaintained and fringe areas within urban landscapes

14. DECIDUOUS FOREST:

    typical southern New England mixed hardwood forests; includes not only large expanses of forest land but inclusion of small patches of trees detectable by the Landsat sensors

15. DECIDUOUS FOREST & MT. LAUREL:

    typical southern New England mixed hardwood forests with a probable understory of Mt. Laurel; also, possibly may include areas of mixed forest

16. CONIFEROUS FOREST:

    typical southern New England mixed softwood forests; includes not only large expanses of forest land but inclusion of small patches of trees detectable by the Landsat sensors

17. DEAD/DYING HEMLOCK:

    includes areas found to contain coniferous areas where the spectral characteristics indicate severe stress on the vegetation present; some of these areas were manually digitized based on the knowledge of the investigator

18. FORESTED/CLEAR CUT:

compound seasonal category; includes areas containing a forest cover in the spring season and an exposed ground cover in the summer season; also, possibly may include areas adjacent to built-up areas

19. MIXED FOREST:

    includes forested areas composed of approximately 50 percent of both deciduous and coniferous vegetation; also, possibly may include areas of deciduous forest with a dense understory of Mt Laurel

20. DEEP WATER:

    open water bodies and watercourses with relatively deep water and large enough to be resolved by the Landsat sensors

21. SHALLOW WATER & MUD FLATS:

    open water bodies and watercourses with relatively shallow water and exposed, wet soil areas adjacent to water bodies large enough to be resolved by the Landsat sensors; also, possibly could include some non-forested wetland habitats, such as marshes with a significantly high water table

22. NON-FORESTED WETLAND:

    Palustrine, emergent wetland (PEME) in the U.S. Fish and Wildlife Service wetland and deep water habitat classification system; includes areas depicted as being predominately wet in both seasons with a detectable vegetative cover

23. SHRUB WETLAND:

    Palustrine, deciduous shrub swamp (PSS1) in the U.S. Fish and Wildlife Service wetland and deep water habitat classification system; includes those areas covered by small woody vegetation and found to contain more water during the summer season then areas classified as forested wetland; possibly could include some severely shadowed areas in terrain of high topographic relief and/or adjacent to tall features; also, possibly could include the edges of coniferous forest stands, which often appear spectrally similar to wetlands

24. DECIDUOUS FORESTED WETLAND:

    Palustrine, deciduous forested wetland (PFO1) in the U.S. Fish and Wildlife Service wetland and deep water habitat classification system; includes areas depicted as wetland in the spring season and deciduous forest in the summer season; possibly could include some severely shadowed areas in terrain of high topographic relief and/or adjacent to tall features; also, possibly could include the edges of coniferous forest stands, which often appear spectrally similar to wetlands

25. CONIFEROUS FORESTED WETLAND:

    Palustrine, coniferous forested wetland (PFO4) in the U.S. Fish and Wildlife Service wetland and deep water habitat classification system; includes areas containing coniferous forest but having a detectable ground cover of water; possibly could include some severely shadowed areas in terrain of high topographic relief and/or adjacent to tall features; also, possibly will include portions of coniferous forest stands

26. LOW COASTAL MARSH:

    Estuarine, emergent wetland (EME) in the U.S. Fish and Wildlife Service wetland and deep water habitat classification system, dominated perhaps by Spartina alterniflora (tall form)

27. HIGH COASTAL MARSH:

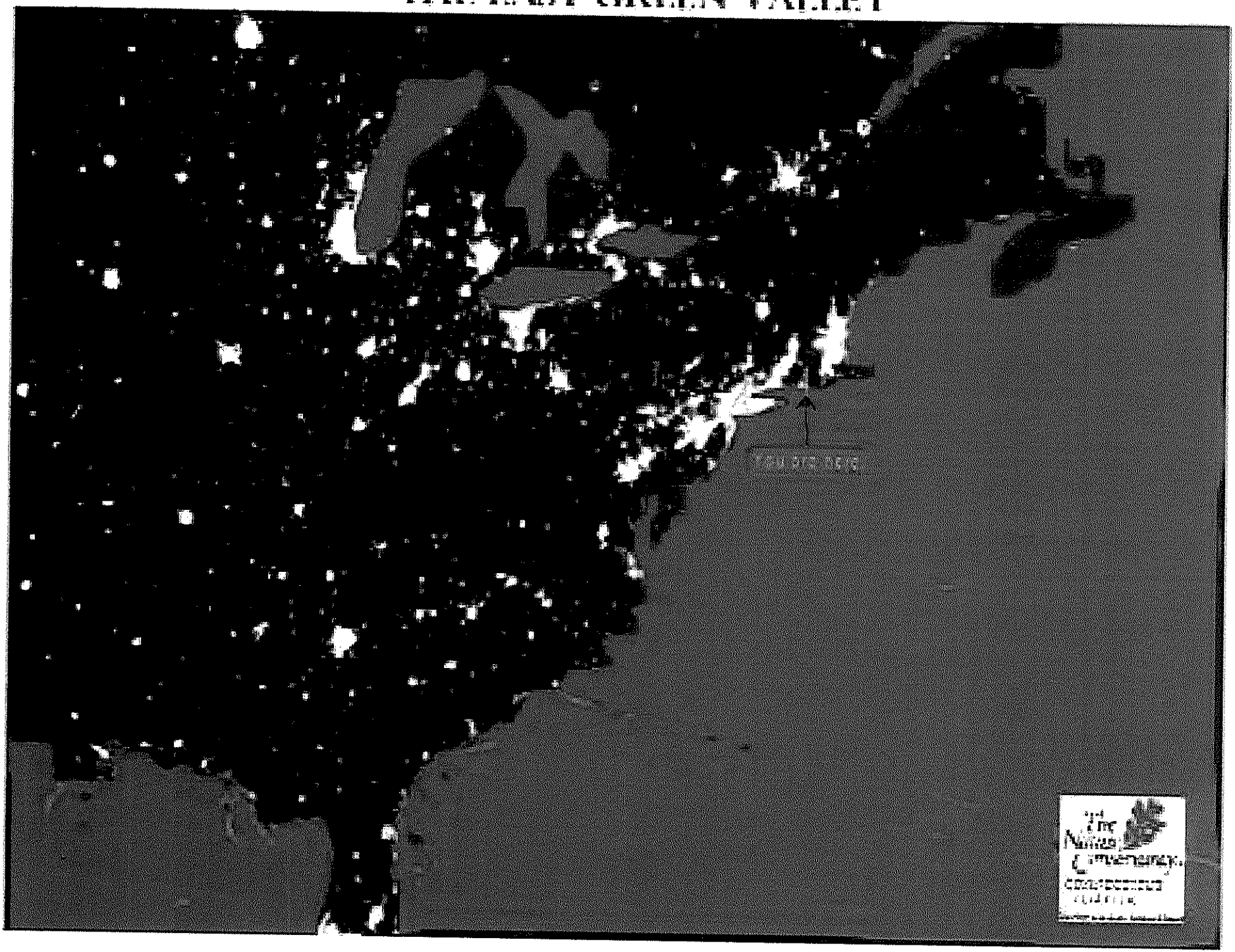
    Estuarine, emergent wetland (EME) in the U.S. Fish and Wildlife Service wetland and deep water habitat classification systems, dominated perhaps by Spartina alterniflora (short form), and othe herbaceous salt marsh grasses, such as Spartina patens, Distichlis spicata, Juncus gerardi, and others

28. EXPOSED GROUND & SAND:

    includes mostly non-agricultural areas relatively free from vegetation, such as sand, sand and gravel operations, bare exposed rock, mines, quarries, etc.; possibly could include some urban areas where the composition of construction materials spectrally resembles more natural materials

Appendix Z

THE LAST GREEN VALLEY



"The Last Green Valley" (6yarrow)

Appendix Z

"Maromas Area in Nighttime Image of the Greater New York City Metropolitan Area" (indicated by ⇨)

Appendix 2

Appendix AA

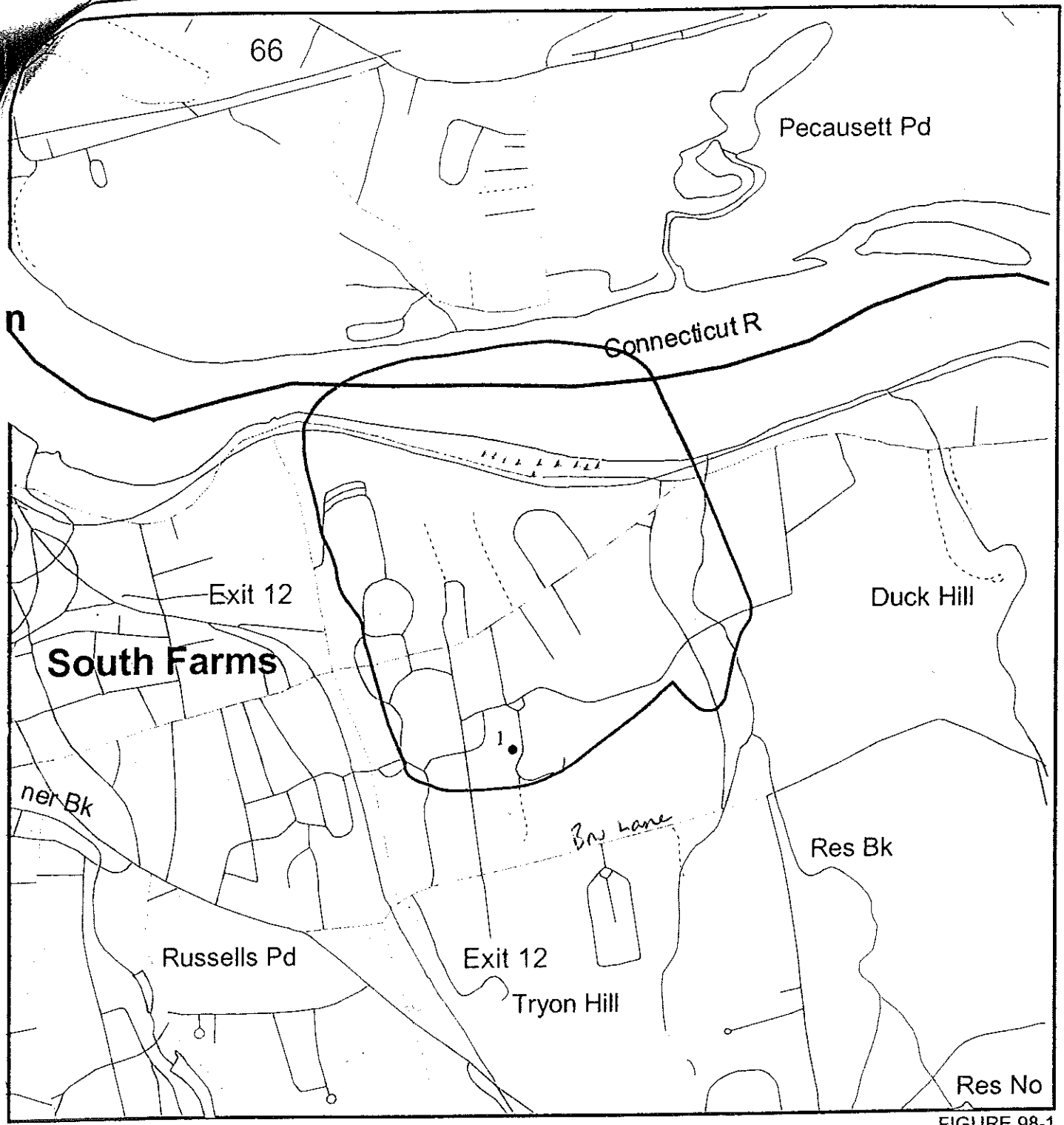


FIGURE 98-1

Legend

Roads
Primary Route
Secondary Route
Local Road
Unimproved Road
Highway Ter
Nonstandard
Parking Area
Boat Area
Under Construction
Ferry Crossing
Footbridge
Trail

Railroad
Track
Siding
Narrow Gauge
Abandoned
Bridge
Overbridge
Tunnel
Underpass
Station
Roundhouse

Annotation
Populated Places
Land Forms
Waterbodies
Beaches
Routes & Exits
APA Boundary
Town Boundary
Streams
Lakes
APA Well
Simple SFCS Loc
Multiple SFCS Locs

APA Boundary is Buffered 100 feet to compensate for the accuracy of the base map layers provided by the CT DEP

Map Reference
Base map layers provided from CT DEP GIS database

State of Connecticut
Department of Environmental Protection
Source Water Assessment Program
Aquifer Protection Area 98
John S. Roth Wellfield
Middletown and Portland, Connecticut

N
W E
S

0.1 0 0.1 0.2 0.3 Miles

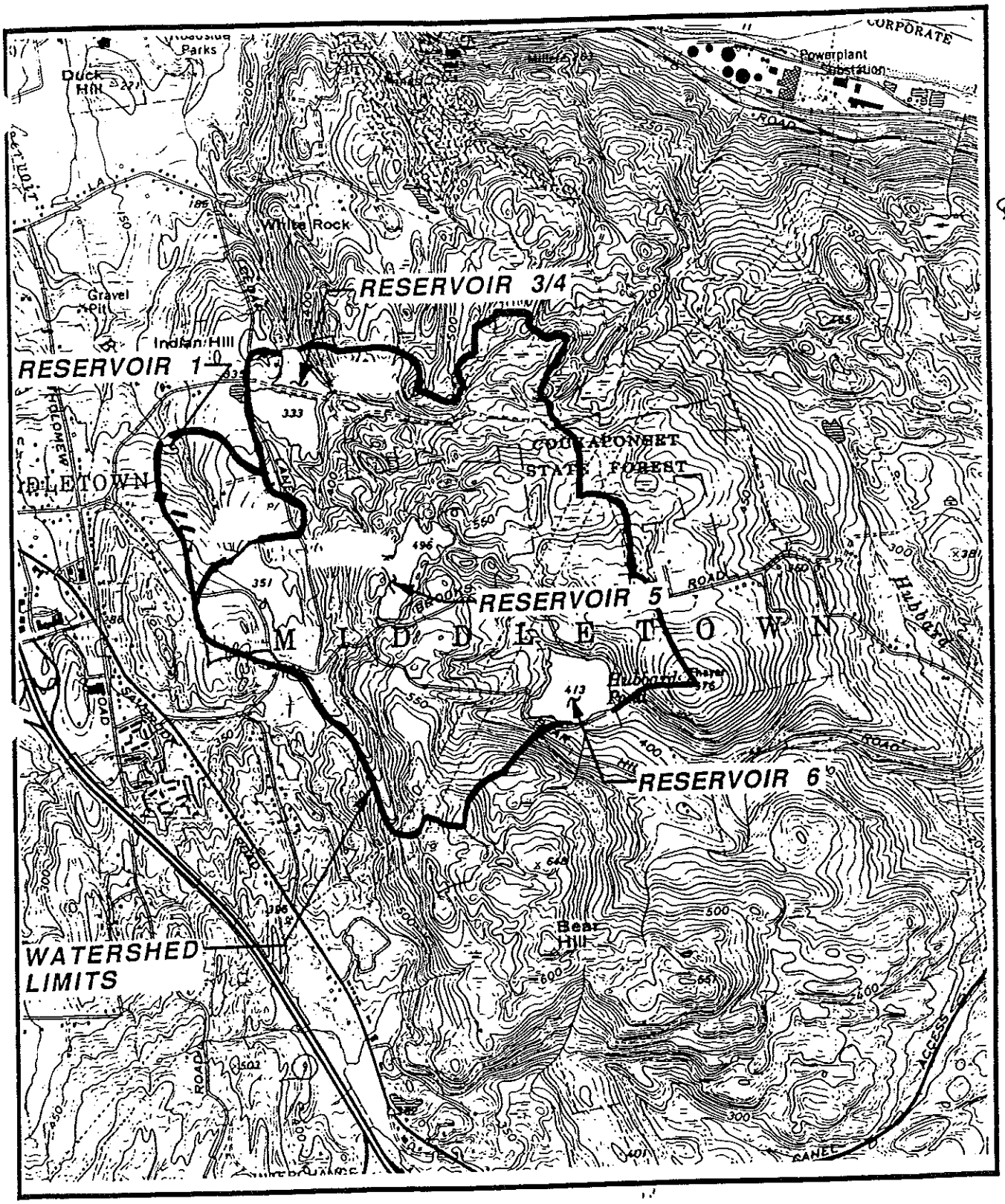
FUSS & O'NEILL INC. Consulting Engineers
146 HARTFORD ROAD, MANCHESTER, CONNECTICUT 06040
(860) 646-2469

Date Printed: November 26, 2001

K:\Gis\P99\99201\A20\Deliv\ReportMap.apr

Appendix AA

Appendix BB



REFERENCE:
USGS MIDDLE HADDAM, CONN. QUADRANGLE.

Date: DEC., 1995	Contract No.: 496-92-002	Scale: 1" = 2000'	Figure No.: 3-2

CONNECTICUT VALLEY HOSPITAL

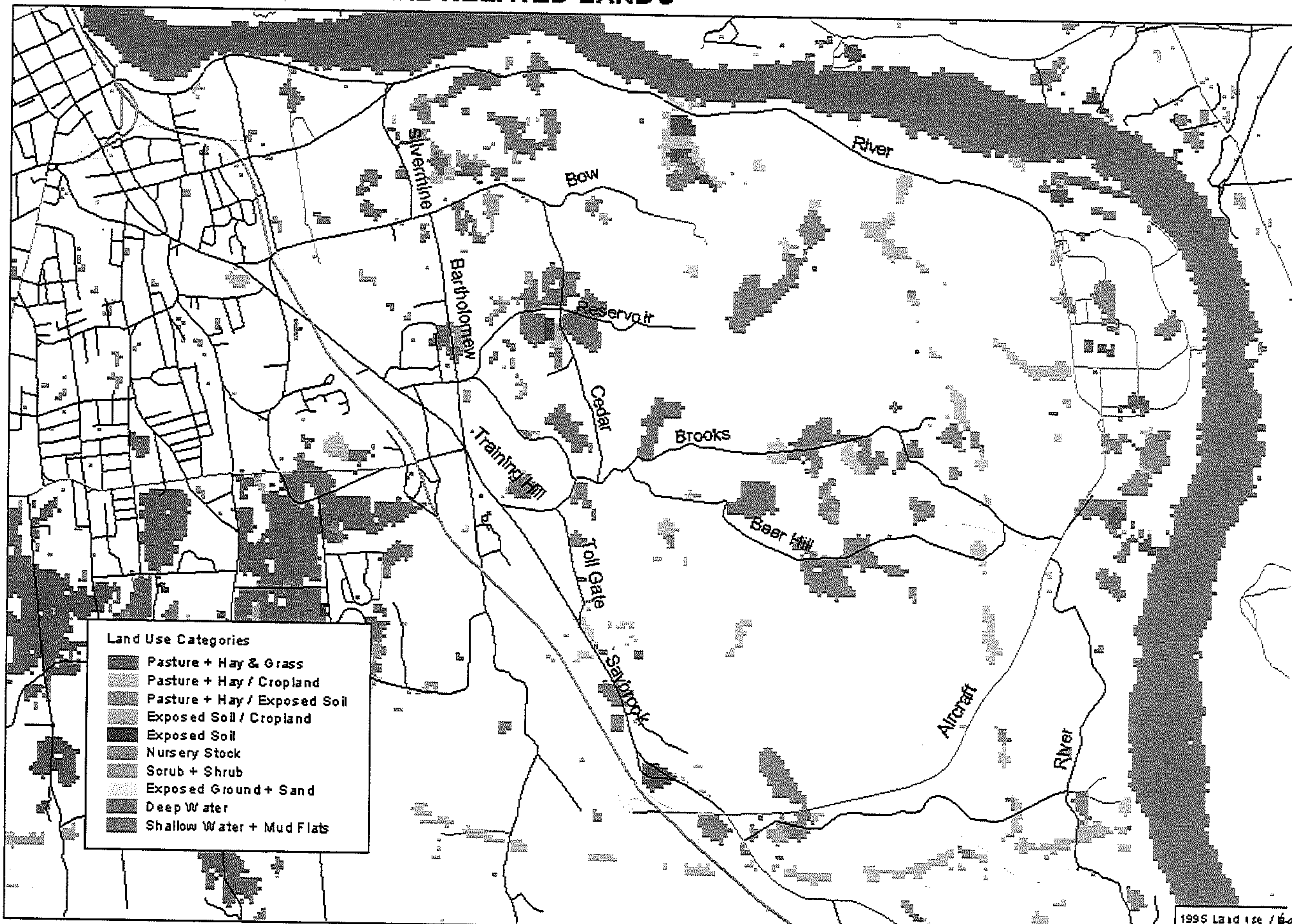
RESERVOIR WATERSHED

Nathan L. Jacobson & Associates, Inc.
88 Main Street P.O. Box 337
Chester, Connecticut 06412-0337
Consulting Civil & Environmental Engineers Since 1972

Appendix BB

Appendix CC

MAROMAS: AGRICULTURAL RELATED LANDS


River
Bow
Silvermine
Bartholomew
Reservoir
Cedar
Brooks
Training Hill
Beer Hill
Toll Gate
Saybrook
Aircraft
River
Land Use Categories
Pasture + Hay & Grass
Pasture + Hay / Cropland
Pasture + Hay / Exposed Soil
Exposed Soil / Cropland
Exposed Soil
Nursery Stock
Scrub + Shrub
Exposed Ground + Sand
Deep Water
Shallow Water + Mud Flats
1995 Land Use / Land Cover data from the CTDEP
Map created by CT River Conservation District for consultant

8/2004

CC

Appendix CC

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION

GIS Data Guide Lookup Table
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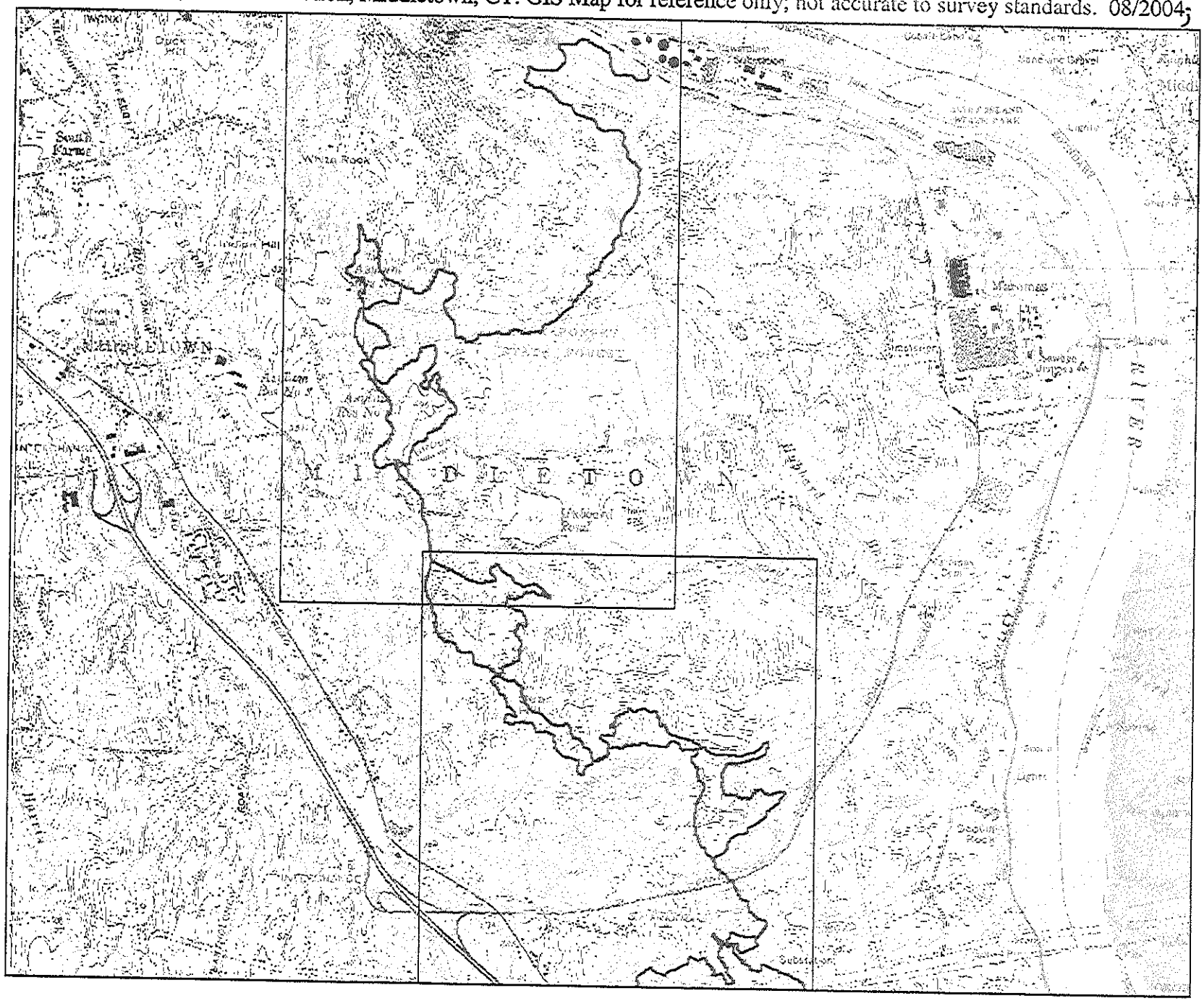
28. EXPOSED GROUND & SAND:
    includes mostly non-agricultural areas relatively free from vegetation, such as sand, sand and gravel operations, bare exposed rock, mines, quarries, etc.; possibly could include some urban areas where the composition of construction materials spectrally resembles more natural materials

Appendix DD

Mattabesett Trail, Maromas section, Middletown, CT. GIS Map for reference only; not accurate to survey standards. 08/2004; Connecticut Forest & Park Association



Appendix D D

CONNECTICUT FOREST and PARK ASSOCIATION
Middlefield, 16 Meriden Road, Rockfall, CT 06481-2961
Telephone (860) 346-2372; FAX (860) 347-7463

Comments from the Connecticut Forest and Park Association
Patty Pendergast – Director of Public Policy
Mattabesett Blue Blazed Hiking Trail on Maromas
October 16, 2000

Connecticut Forest and Park Association has interest in the potential development of the tracts of land known as Maromas as it harbors the eastern section of the Mattabesett Blue-Blazed Hiking Trail. There is close to 10.4 miles of main trail and 4.9 miles of loop trails between Reservoir Road and the Connecticut River. From high ledges and bald knobs this section of the trail provides vistas of the Connecticut River and the hills of Middlefield through a picturesque terrain of tumbled ledges, frequent brook crossings and shallow bogs.

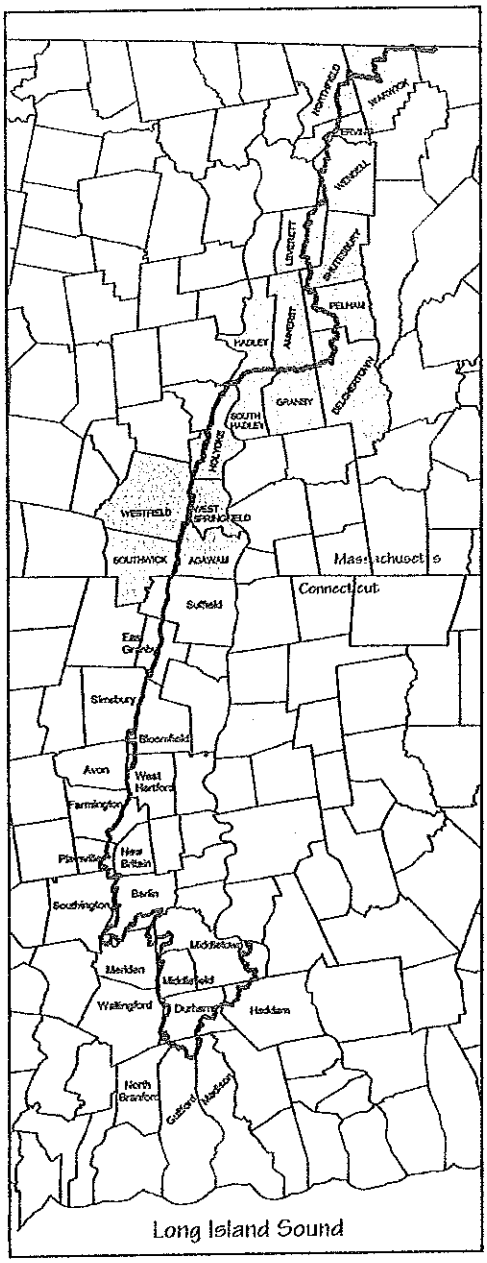
A good portion of the trail system is under license agreement with Northeast Utilities since February 1974. Northeast Utilities has recently assured us that they do not have the land up for sale or do they currently have plans to develop their lands. Northeast Utilities also has a license agreement with the state of Connecticut for the Maromas Wildlife Management Area. These lands are managed for wildlife and are significant to the hunting community. The eastern section of the Blue-Blazed Mattabesett Trail crosses state land in Cockaponsett State Forest and Connecticut Valley Hospital and involves the generosity of several private landowners as well.

One of the biggest threats to our Blue-Blazed Hiking Trail System has been the fragmentation of large tracts of land such as Maromas. This particular trail system is significant in that it connects to the Metacomet Trail System and in this way nearly bi-sects the state of Connecticut. There is recent movement for the Mattabesett Trail to become part of a Canada to Long Island Sound Trail effort that is gathering regional and federal support.

Appendix DD

e-mail:
conn.forest.assoc@snet.net
Web site:
www.ctwoodlands.org

Overview of the 200-plus-mile route of the Metacomet-Monadnock-Mattabesett Trail Corridor in Massachusetts and Connecticut. The three trails pass through and link 37 communities within the neighboring states.



NATIONAL SCENIC TRAIL STUDY

of the

METACOMET
MONADNOCK
MATTABESETT
TRAILS

in Connecticut & Massachusetts

A Feasibility Study Conducted by
The National Park Service

In cooperation with

CT Department of Environmental Protection
MA Department of Conservation & Recreation
Connecticut Forest & Park Association
Pioneer Valley Planning Commission
Franklin Regional COG

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Metacomet
Monadnock
Mattabesett

NATIONAL SCENIC TRAIL STUDY

Study Background

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, currently stretching nearly 200 miles across CT and MA, it will cease to exist as a recreational resource for future generations.

Study Purposes

Following passage of PL 107-338, the National Park Service commenced a series of informal meetings with trail stakeholders in both Connecticut and Massachusetts. Dialogue with these groups helped to shape the study goals and workplan outlined in this brochure.

Primary Goal: To determine the best way to ensure the long-term viability of a continuous public use trail system from Long Island Sound through Connecticut to the Massachusetts/New Hampshire border.

Secondary Goal: To determine whether or not designation as a National Scenic Trail makes sense as a means of achieving the primary goal of long-term trail system viability.

Important Study Principles

The following study principles are based on the intentions of the study's Congressional sponsors, the operating principles of the National Park Service, and the thoughts and input of the M-M-M Trail stakeholders in CT and MA.

- Meaningful investigation of the Trail's long-term viability can only occur with the full involvement of a wide range of trail advocates, landowners, and other interested parties.
- Emphasis will be on strengthening existing trail partnerships and characteristics of use, maintenance, ownership, and voluntary stewardship.
- Respect for private property rights is a fundamental component of a successful project.
- Federal condemnation of land will not be considered as an option in establishing or protecting the trail.

Workplan Overview

The major tasks identified for the study are outlined below.

1. Establish a Current Understanding of the Metacomet-Monadnock-Mattabesett Trail System, including:
   - Description and mapping of the Trail(s) and Corridor
   - Description of the principal recreational, historic, cultural and natural resource values of the trail and corridor

DD

- History of the Trail and its use, maintenance, and administration
- Current Trail use, maintenance, and administration
- Trail issues and conflicts

2. Develop a Vision for the Trail System through:
   - Gathering public, landowner and user input on what makes the Trail special
   - Exploring and identifying what types of user opportunities and trail qualities landowners, communities, and current users would like along the Trail
   - Identifying the Trail's role in linking communities and resources
   - Establishing priorities for the future of the Trail, trail segments, trail linkages, and associated resources

3. Research Models and Alternatives for Successful Long-Distance Trail Management, Protection, Maintenance, and Administration
   - Explore options and alternatives related to National Trail designation
   - Explore options and alternatives without a national designation

4. Develop a Blueprint for Long-Term Management, Protection and Maintenance of the Trail that seeks to:
   - Ensure the continued existence of a physical trail route/system
   - Maximize the public benefit of the trail system for current and future generations
   - Respect the rights of private property owners
   - Incorporate processes for resolving conflicts
   - Determine trail maintenance, administration, protection, and management needs and how to meet them
   - Develop a coordination & communication system for trail stakeholders

How To Get Involved

The following mechanisms will be utilized in order to ensure a strong landowner, trail user and community role in the study:

- At least two sets of well- advertised public forums will be held in various locations in Connecticut and Massachusetts.
- Landowners on/near the current trail route will be contacted directly with written information and invited to participate.
- All communities abutting the trail will be invited to participate through appropriate town boards and organizations.
- Trail managing organizations and user groups will be invited to take part in the study.
- All major study products and findings will be made available for comment and review as drafts through web sites and hard copy.

In Massachusetts the study will be coordinated by the Pioneer Valley Planning Commission and Franklin Regional Council of Governments (PVPC &FRCOG). PVPC and FRCOG will establish three working groups (two in PVPC's district and one in FRCOG's) to engage communities and trail interests in the conduct of the Study.

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In Connecticut the work will be coordinated by Kevin Case of the National Park Service and by the Connecticut Forest & Park Association (CFPA). A single informal steering committee has been established in Connecticut and will meet regularly to help guide the Study.

Contact information for Connecticut and Massachusetts is listed below.

Anticipated Timeline

Fall 2003: Formal kick-off of Study with informational mailings to landowners, municipal leaders, user groups, and state Legislators, followed by a series of Public Forums to be held at several locations along the trail corridor.

Fall 2004: Draft findings and recommendations developed and made available for public comment. The final Study Report will be released following the public comment period.

Web Sites With More Information

The text of PL 107-338 can be viewed through the Library of Congress web site (www.thomas.loc.gov) by searching on PL 107-338 in the 107th Congress section. The full text of the National Trail System Act (PL90-543) can be viewed at http://www.nps.gov/nts/legislation.

Information about the M-M-M Trails, their history, maintenance, route, and other background information can be viewed through the web sites of the Appalachian Mountain Club (www.outdoors.org) and Connecticut Forest & Park Association (www.ctwoodlands.org). These web sites can also be used to track the progress of this National Trail Study.

The web sites of PVPC (www.pvpc.org) and FRCOG (www.frcog.org) will be updated to contain basic study timelines, meeting dates and other study information.

For More Information/Key Contacts

Name	Study Role	Phone	Email
Jamie Fosburgh	NPS, Project Manager	617-223-5191	jamie_fosburgh@nps.gov
Kevin Case	NPS, CT Lead	860-738-1092	kevin_case@nps.gov
Ann Colson	CFPA, CT Partner	860-346-2372	acolson@ctwoodlands.org
Chris Curtis	PVPC, MA Co-Lead	413-781-6045	chcurtis@pvpc.org
Peggy Sloan	FRCOG, MA Co-Lead	413-774-1194	psloan@frcog.org

DD

National Scenic Trail Study
The Metacomet-Mattabesett Trails in Connecticut
Frequently Asked Questions

What is the Metacomet-Mattabesett (MM) Trail System?
The Blue-Blazed Metacomet-Mattabesett Trail System consists of two footpaths running in a general north-south direction from the Massachusetts border south to Long Island Sound. The trails were established in the early 1930s by Connecticut Forest & Park Association (CFPA). At times the trails are discontinuous or travel over paved roads, but for most of their 108-mile length they traverse the dramatic traprock ridges that form the spine of Connecticut's central landscape. Located on both private and public land, the trails offer some of the finest ridge walking and cliff views in the state.

Why are These Trails Important?
The Metacomet and Mattabesett Trails provide a unique recreational experience in an increasingly urbanized area of Connecticut. Created for public use and enjoyment, they link people to their communities while offering an opportunity to observe and learn about the natural resources of Connecticut's landscape.

Who Maintains the Trails?
The Connecticut Forest & Park Association, through a network of 600 unpaid volunteers. If you have any suggestions for the trails you may contact CFPA directly at (860) 346-2372.

What is the Purpose of the Metacomet-Monadnock-Mattabesett (MMM) Trail Study?
The Study, which also include the Metacomet-Monadnock Trail System that runs from the CT/MA border north to the MA/NH border, seeks to answer two questions: How can we maintain and improve these trails for current and future generations? And, is designation as a National Scenic Trail a part of the solution?

Will you be building a new trail system?
No, there will not be a new trail built. The Metacomet-Mattabesett Trail System has been in place for over 70 years. The study is focused on the long-term viability and management of this existing trail system.

What is a National Scenic Trail?
In 1968 the U.S. Congress passed the National Trails Act in an effort to provide increasing outdoor recreation opportunities for an expanding population, and promote preservation and public access of outdoor areas. The Act provides for the creation of three types of trail systems: Scenic, Recreational and Historic. National Scenic Trails are to be established to promote outdoor recreation and the conservation and enjoyment of nationally significant scenic, historic, natural or cultural qualities. Currently there are 8 National Scenic Trails in the United States. See www.nps.gov/nts for more info.

How is a Trail Designated a National Scenic Trail?
First, a trail must be studied to determine if it is feasible and desirable to become designated. In December 2002, the US Congress authorized such a study of the MMM Trail System in MA and CT. The National Park Service is conducting the study in close consultation and partnership with property owners, local and state governments, CFPA, and other organizations that have a stake in the MMM Trail and its future. A steering committee with representatives from these interests has been formed to assist with the study in CT. If the study recommends scenic trail designation (about half of the trail studies have such a result), legislation authorizing a scenic trail designation would have to be passed by the U.S. Congress and signed by the President.

How Does the Study Affect My Land?
It does not. If you perceive any impacts at all, please contact us right away.

When will the study be completed?
A draft study report with recommendations is to be completed and brought to the public for comment by early 2005.

DD

What is the steering committee? Can I participate on the steering committee?
The CT Steering Committee is composed of large-lot landowners within the Trail corridor, municipal and state representatives, land trusts, regional planning agencies, trail-users groups and other trail interests. The Steering Committee is responsible for providing input and guidance to the National Park Service on the development of the Study products. Participation on the steering committee, which meets quarterly, is open to those with an interest or stake in the trail. Please contact Kevin Case, the National Park Service CT Section Project Coordinator for the study, at (860)738-1092.

Would the National Park Service buy my land if the Trail is designated?
No. It is extremely unlikely that any federal land acquisition would accompany designation. Acquisition of lands to protect the Trail is already commonly practiced by communities, land trusts, state agencies, and similar entities and there appears to be no need for a federal acquisition role.

Could National Scenic Trail designation force me to sell my land?
No. So called "condemnation" authority will not be part of any recommendation coming from this study. Congressional sponsors, the National Park Service and all Study partners agree that this would not be acceptable.

What is My Liability as a landowner if someone gets hurt on the Trail?
Under Connecticut Statute 52-5-57g landowners are not held liable as long as they do not charge fees for the recreational use of their land. Landowners may be liable, however, for willful or malicious failure to guard against a dangerous condition, use, structure or activity. For more information, check the Landowner Liability Law section of the Connecticut General Statutes.

What will happen to my property rights if the trail is designated?
Nothing. Respect for private property rights is a fundamental component of a successful project. Federal condemnation of land will NOT be considered as an option in establishing or protecting the MMM trail system.

How will my town benefit if this designation occurs?
Such a designation may bring federal technical and financial resources to help enhance and protect the existing trail system and its related side trails. Some studies have shown that there is an economic benefit to communities that value their trails and promote them as a recreational tourist destination.

Could the Study or designation result in federal restrictions on my property?
No. The study is only that - - a study. Nor are there restrictions associated with a National Scenic Trail designation - - the National Trail System Act contains no authority for federal land use control.

How Can I stay Informed About the Study?
Email updates, mailings, website and public meetings are four good ways. You can also call any of the study team members for updates at any time.

Would a National Scenic Trail designation "federalize" the MMM Trail, resulting in federal control of a corridor along the trail?
No. The federal government will not take control of the trail. There is no federal mandate requiring a specific trail corridor, nor any federal land use controls related to the National Trails System that will effect how a landowner can use their property.

Will the trail be restricted to hiking only? What about mountain biking, horseback riding and ATV use? Who makes the decision about other uses?
Historically the MMM trail has primarily been a footpath with other mixed uses occurring on certain sections. This is similar to National Scenic Trail precedent and legislative guidance which amount to a footpath with exceptions allowed. A key component of the study process will be to gather landowner and user input to determine an overall vision for the trail, including future desired use patterns. Ultimately it is up to the private landowner to decide what types of use will be allowed on their property, regardless of any trail designation.

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3rd Draft, January 29, 2004

VISION FOR THE METACOMET-MONADNOCK-MATTABESETT TRAIL SYSTEM

The Metacomet-Monadnock-Mattabesett trail system will be a continuous, protected trail running from Long Island Sound to the northern Massachusetts Border, following the traprock ridges of the Metacomet Range and other unique landscapes.

The management approach for the trail system, guided by a respect for property owners, will be developed and implemented by a volunteer- based trail stewardship organization that includes broad involvement from landowners, users, land conservation organizations, and governments.

The trail will provide users a quality experience that values the long-term health of the area's distinct natural and cultural resources, while connecting a diverse network of communities that benefit from its unique educational, economic and recreational assets.

DD

iv. Land Trusts
v. CT DEP
vi. RPAs
vii. CFPA
viii. Trail-users
ix. NPS (only if designation is achieved)
x. Others

b. Identify Structure
   i. Leadership and Roles
   ii. Staffing
   iii. Operating/Decision Making Procedures
c. Establish Mission/Goals/Actions of the Organization, i.e. Strategic Plan
d. Determine Approach For Development and Implementation of a Management Plan for the Trail
e. Identify Possible Funding Needs Short and Long-Term

5. ***The trail will provide users a quality experience.***
   a. Develop a clear policy statement on the issue of trail use types to be allowed on the trail and where. Policy must be clear that the ultimate decision of trail use types allowed on a property is up to the property owner.
   b. Identify and understand levels and locations of existing of multi-use.
   c. Establish and promote best trail use practices/etiquette for all trail use types determined appropriate on the trail.
   d. Determine whether overnight use is appropriate and if so how and where
   e. Establish a system for identifying and resolving user conflicts.
   f. Identify areas where gaps in the trail exist and determine a strategy to address them.
   g. Establish a trail management system that maintains the trail system to meet legitimate users needs.
   h. Identify and establish strategy to address trail re-routing and extension projects.
   i. Identify and establish strategy to address trail use enforcement issues
   j. Establish program to develop, install and maintain necessary signage.

6. ***Values the long-term health of the area's distinct natural and cultural resources.***
   a. Identify all outstanding natural and cultural resource values within the trail corridor
      - plant/animal species
      - natural communities/habitats
      - geologic features
      - archaeological features
      - historic/cultural features
      - scenic vistas
   b. Determine types and sustainable levels of use appropriate to protect the natural and cultural resources of the corridor
   c. Develop conservation management strategy for resources that require special consideration.

DD

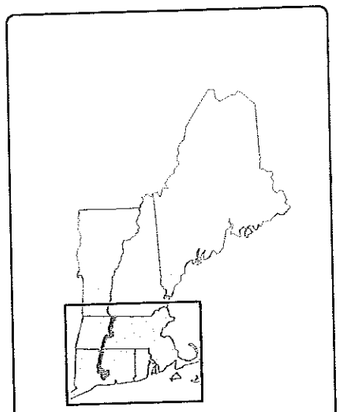
d. Establish a program to educate communities and users about the unique resources of the trail corridor.

7. ***Connecting a diverse network of communities that benefit from its unique educational, economic and recreational assets.***
   a. Determine and document level of municipal support for the trail.
   b. Determine if and how local communities recognize the trail system - this may manifest at the town level in town plans of conservation and development, recreation management plans, or open space plans.
   c. Determine strategies to work with local communities and regional tourism districts to promote sustainable levels of trail use.
   d. Determine strategies to work with local communities promoting and supporting efforts to physically link community centers or unique community areas (i.e. historic districts) with the trail.
   e. Develop an educational program to promote the trail and its unique resources – may include interpretive displays, informational brochures, website, and trail events.

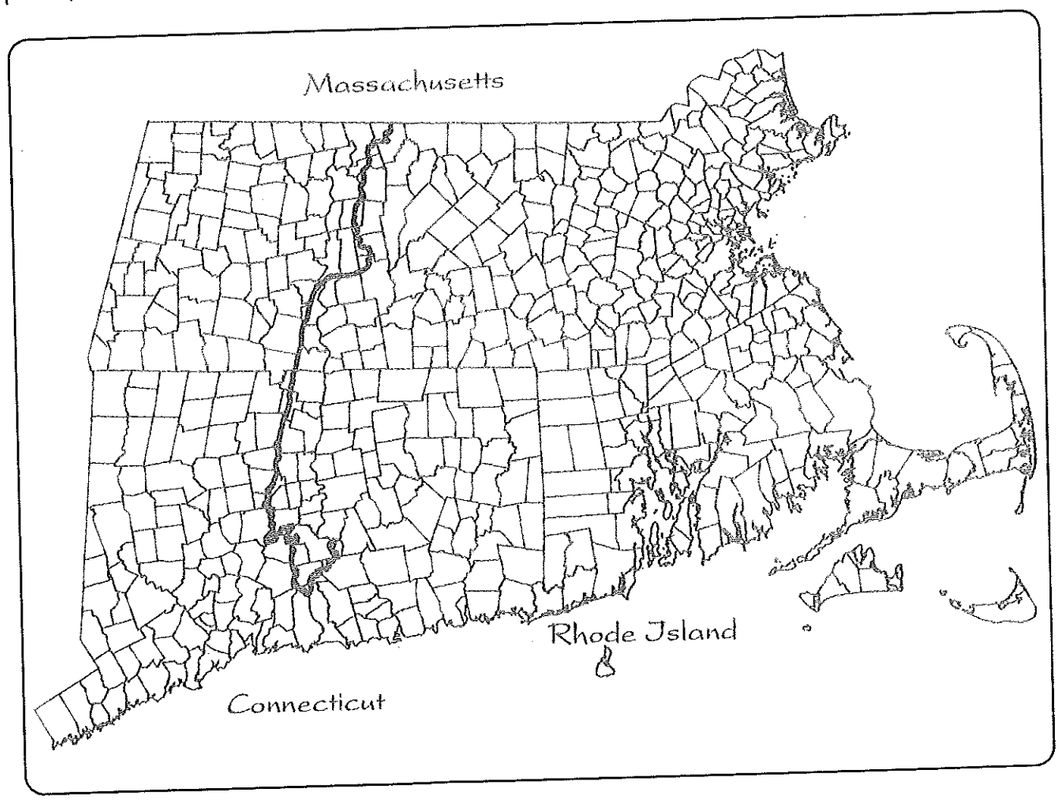
DD

Metacomet
Monadnock
Mattabesett

Overview of the 200-plus-mile route of the Metacomet-Monadnock-Mattabesett Trail Corridor in Massachusetts and Connecticut. The three trails pass through and link 37 communities within the neighboring states.



0 25 50 100 Miles



1.18 After steady descent, reach main trail at *Bible Rock Junction.* Rt. 154 (formerly Rt. 9A) is immediately to R.

BEAR HILL

(U.S.G.S. Quadrangle: Middle Haddam)

Cutting operations affecting the southern portion of Bear Hill and Bear Hill Loop may result in minor changes in that part of the trail.

(Direction of Travel: S to N)

0.00 From Aircraft Rd. climb up and over outcrop.
0.11 Pass *South Junction,* where Bear Hill Loop Trail enters on L.
0.31 Reach high point on ledge; continue along hillside.
0.49 Turn upstream, where small brook cascades down over rocks. Trail crosses brook three times in next 0.27 m.
0.82 Fork to R, away from brook, and then follow base of long ridge.
1.12 After short climb, reach top of ridge (450 ft.) (The Connecticut River S from Higganum can be seen from late fall to spring). Continue along "Chinese Wall".
1.33 Pass *South Crossover* just above crossing of small brook and continue, largely uphill. (Look for blueberries on all the hilltops from here on in late June and early July.)
1.71 Just over top of open hill, pass *Summit Junction,* where Bear Loop Trail joins from R; and then drop steeply from hill.
1.80 Pass *Midway Junction,* with Loop Trail to R.
1.88 Start across stretch of open rocks.
2.04 Scramble over point of rock and then drop to edge of swamp. Continue and eventually begin steady ascent.
2.36 Reach summit of Bear Hill (660 ft.), with views to S. Continue, going straight where woods rd. descends to R. Go through laurel to a drop-off.
2.60 Pass *North Crossover.*
3.21 Reach first view of Hubbard Pond and then descend to a stream crossing.
3.46 Reach lesser view of Hubbard Pond. Descend, passing through a couple of long arbors of old mountain laurel.
3.72 Cross power line.
3.78 Cross second power line and pass *North Junction,* where Loop Trail leaves to L along power line. Main trail continues straight, exiting power line just to R of utility rd.
3.97 Cross Bear Hill Rd.
4.18 Descend to Brooks Rd., across from Conn. Valley Hospital Reservoir No. 2.

BEAR HILL LOOP

(Direction of Travel: N to S)

0.00 From *North Junction* follow power lines and then woods rd. to L.
0.14 Cross second power line and continue on rd. through deep laurel.
0.55 Cross main trail at *North Crossover;* continue and pass through burn area on hilltop.
0.66 At end of burn area leave old rd., branching to L and following around base of Bear Hill.
1.05 At *Midway Junction* turn L and join main trail to top of next hill.
1.14 At *Summit Junction* turn L and follow ridgetop.
1.28 Reach outcropping above pond and soon drop to its edge.
1.71 Cross main trail at *South Crossover;* shortly thereafter cross small brook.
2.00 Come to another stream; follow it awhile and then cross it.
2.16 Reach *South Junction,* which is end of loop. [Main trail to R leads to Aircraft Rd. in 0.11 m.]

RESERVOIR SECTION

(U.S.G.S. Quadrangle: Middle Haddam)

(Direction of Travel: S to N)

The Reservoir Section begins on Brooks Rd., 100 yd. W of the terminus of the Bear Hill Section, near one of the Conn. Valley Hospital reservoirs.

0.00 Go N from Brooks Rd., gradually ascending, with views of the reservoir on the R.
0.25 Swing L, away from the reservoir.
0.31 Cross woods rd. and proceed through open rocky outcrop with views of Middletown.

Ned
Rd.;
0.0

1.C

2.5

0.52 Intersect Loop trail at *Old Burn Crossing.*
0.58 Cross a brook, wind up and along a ledge.
0.72 Descend from ledge, past rock overhang on R.
0.84 Intersect Loop trail at *Twins Crossing* on Reservoir Rd. (unpaved).
0.98 Cross brook and then climb steep ledge.
1.06 Ascend to overlook above Twin Reservoirs with excellent view to W.
1.31 Descend to Rockpile Cave, turn sharply to R, and follow base of ledge.
1.62 Reach woods rd., which is terminus of Loop trail. Cross the woods rd. and ascend ledge.
1.93 Pass rock formation and swamp on R.
2.06 Recross Reservoir Rd., follow old woods rd., ascend ledge, and go through thicket of mountain laurel.
2.39 Cross two woods rd.and a small brook.
2.60 Turn R onto woods rd. across from foundation of old house.
2.73 Leave woods rd. on R, cross stream, and pass well hole and large house foundation.
3.00 Cross narrow marsh and then turn L onto abandoned quarry rd.
3.08 Cross woods rd.and then follow trail on ridge above quarry rd.
3.16 Lv. quarry rd. on L and descend valley with brook on L.
3.28 Cross brook and ascend ledge overlooking brook.
3.51 Pass between two large boulders and cross brook.
3.63 Turn R onto woods rd. and follow it across brook.
3.78 Scenic overlook on R — through power lines — with northern view of Hartford.
3.86 Reach large white oak. [A spur trail on L goes 200 yd. to scenic overlook of Connecticut River.] Turn R, cross power-lines, and turn R onto woods rd.
3.98 Lv. woods rd. on R, reach brook on R, follow it a short distance and then rejoin woods rd.
4.13 Lv. woods rd. on R.
4.20 Cross brook, cross woods rd., and pass large sugar maple on R.
4.34 Cross brook and ascend slope to large sugar maple with view of brook on R.
4.59 Reach River Rd. — N terminus of Reservoir Section.

To start a hike at the northern terminus: lv. Rt. 9 at Exit 12. Turn L onto Silver St. and go about 1.5 m. to jct. with River Rd. Continue E on River Rd. nearly 2 m. to large power plant on L. Trail starts diagonally opposite (*Parking* along guard rail on R side of rd.)

Reservoir Loop

(Direction of Travel: S to N)

The Reservoir Loop Trail begins on Brooks Rd. 100 yd. E of the terminus of the Bear Hill Section, on the opposite side of one of the Connecticut Valley Hospital reservoirs from the start of the Reservoir Section.

0.00 Enter woods on N side of Brooks Rd.
0.30 Go around a swamp.
0.50 Pass a small abandoned quarry.
0.64 Reach Reservoir and follow its shore a short distance.
0.74 Skirt a swamp on R.
1.19 Intersect Reservoir trail at *Old Burn Crossing.*
1.31 Cross small brook.
1.39 Intersect Reservoir trail at *Twins Crossing* on Reservoir Rd.; turn R and follow Reservoir Rd.
1.50 Turn L from Reservoir Rd. onto woods rd.
1.59 Intersect Reservoir trail. This is terminus of the Reservoir Loop trail.

Central Division

(Direction of Travel: N to S as far as Broomstick Ledges, then E to W to Rt. 17, after which it is S to N.)

EAGLE'S BEAK POINT
MILLER'S POND AND BEAR ROCK
COGINCHAUG CAVE.

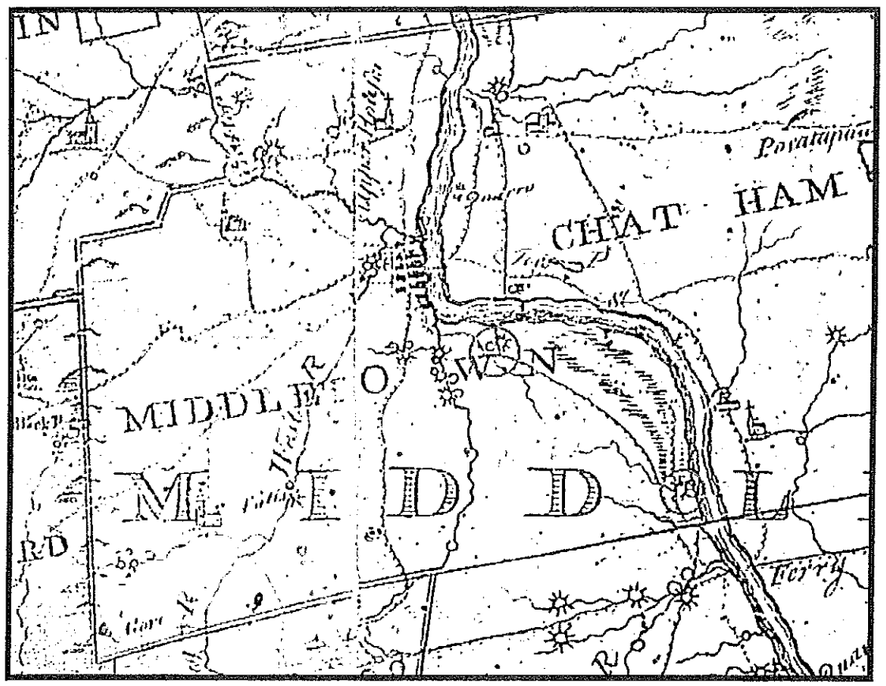
(U.S.G.S. Quadrangles: Durham, Haddam)

The Central Division starts on Brainard Hill Rd. in Haddam. To reach the trail from Rt. 9, take Aircraft Rd. from Exit 10 to Saybrook Rd. (Rt. 154). Turn R and go 0.7 m. to Thayer Rd.; turn R and go 0.1 m. to

Appendix EE

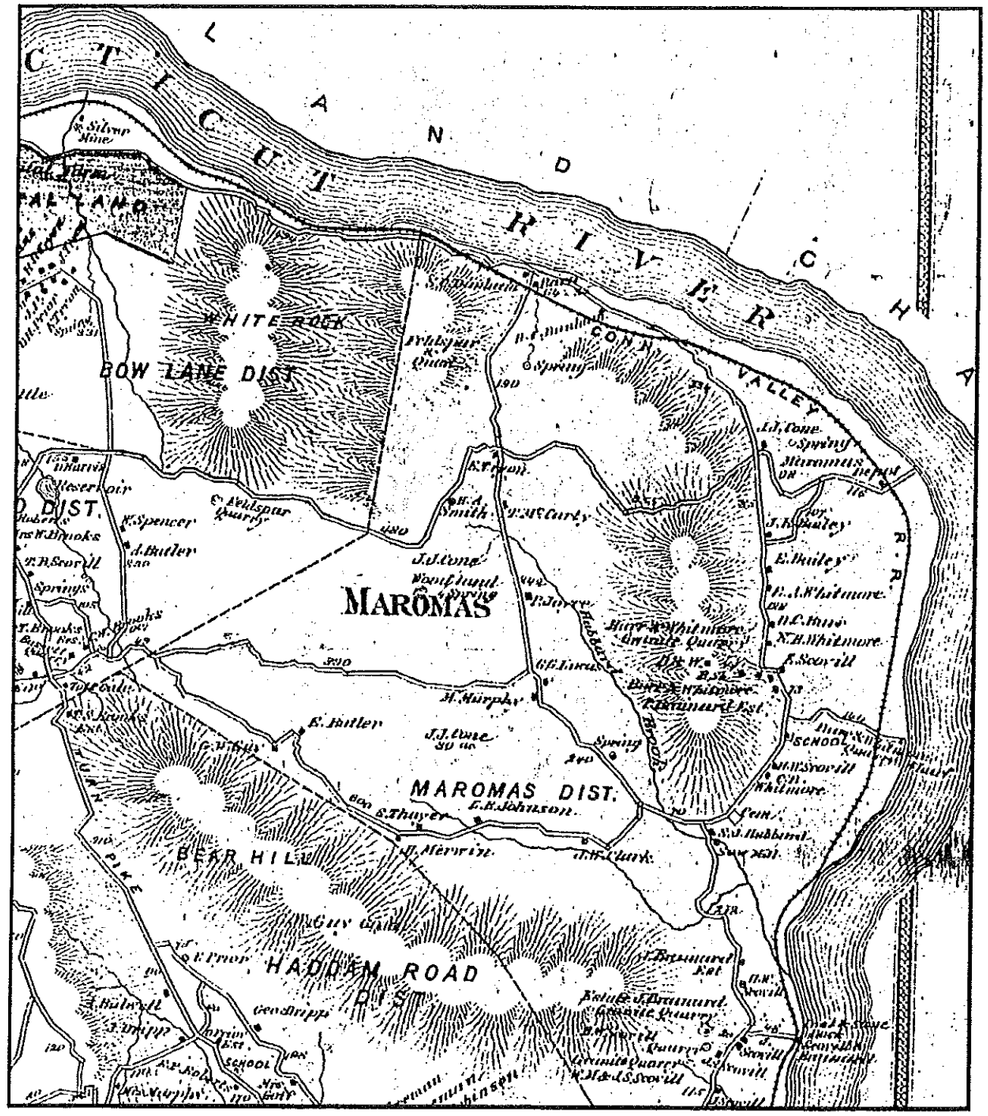
Middletown portion of the Blodget map of 1792

The symbols (circled) indicate a sawmill and gristmill on present-day Reservoir Brook at the west end of the project, and a sawmill near the east end.



EE

F. W. Beers, *County Atlas of Middlesex, Connecticut*, 1874, showing numerous feldspar, flint, and granite quarries in this part of Middletown, as well as two stone shipping docks along the river, which is paralleled by the Connecticut Valley Railroad.



Appendix FF

Appendix FF

STREETS OF MAROMAS

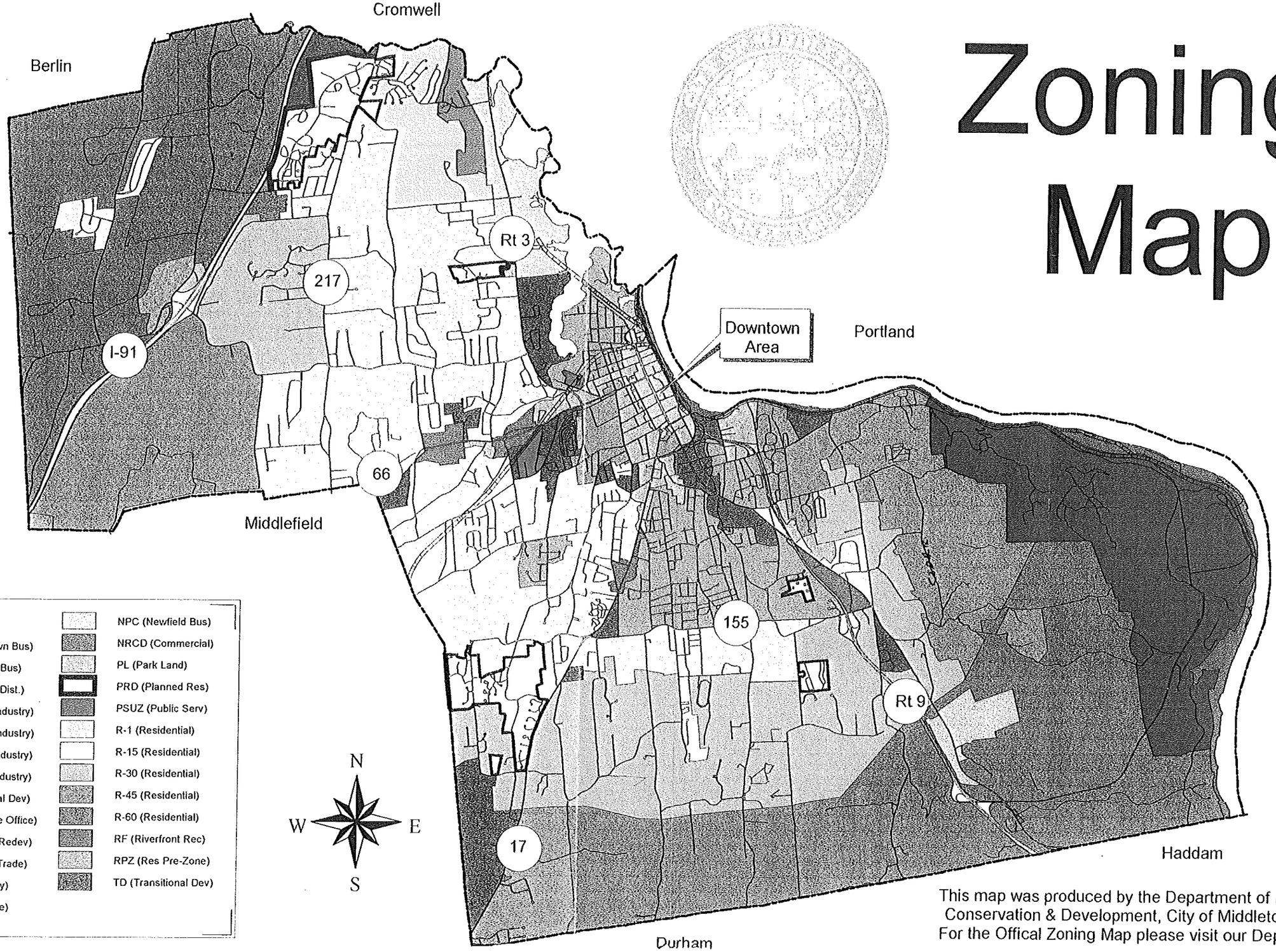
Compiled by Erin O'Hare, AICP

Aircraft Road
Bartholomew Road
Bear Hill Road
Bow Lane
Brooks Road
Cedar Lane
Coe Avenue
DeJohn Drive
Dripps Road
Eastern Drive
Fairchild Road
Freeman Road
High Meadow Lane
Holmes Drive
MacArthur Court
Maple Wood Terrace
Maromas Road
O'Brien Drive
Old Route 9
Omo Street
Reservoir Road
River Road
River Road Extension
Roberts Street
Roosevelt Drive
Ryefield Road
Saybrook Road
Scovill Road
Silver Street
Silvermine
Stand Pipe Road
State Terrace
Summer Hill Road
Toll Gate Road
Training Hill Road
Virginia Drive
Windy Hill Drive
Woodbury Circle

Appendix GG

Middletown, CT

Zoning Map



Zones

- B-1 (Downtown Bus)
- B-2 (General Bus)
- DVD (Village Dist.)
- I-1 (Service Industry)
- I-2 (Restrict Industry)
- I-3 (Special Industry)
- I-4 (Limited Industry)
- ID (Institutional Dev)
- IOP (Interstate Office)
- IRA (Industry Redev)
- IT (Interstate Trade)
- M (Multi-Family)
- MX (Mixed Use)
- NPC (Newfield Bus)
- NRCD (Commercial)
- PL (Park Land)
- PRD (Planned Res)
- PSUZ (Public Serv)
- R-1 (Residential)
- R-15 (Residential)
- R-30 (Residential)
- R-45 (Residential)
- R-60 (Residential)
- RF (Riverfront Rec)
- RPZ (Res Pre-Zone)
- TD (Transitional Dev)

This map was produced by the Department of Planning, Conservation & Development, City of Middletown, CT. For the Offical Zoning Map please visit our Department.

Appendix GG

CITY OF MIDDLETOWN, CONNECTICUT
Department of Planning, Conservation and Developme
245 DeKoven Drive, Suite 202, Middletown, Connecticut, 06457
(PH) 860-344-3425 (FX) 860-344-3593
William Warner, AICP Department Director

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Info on Middletown
Concerning Residences
Concerning Businesses
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Site Map
Contact Us

Online version is NOT official, it is only for use as a referen
Official copies can be viewed at the
Department of Planning, Conservation, and Development.

Zoning Map

ID: Institutional Development
IM: Interstate Mixed
IOP: Interstate Office Park
IRA: Industrial Redevelopment Area
IT: Interstate Trade
M: Multiple Family
MX: Mixed Use
PL: Park Land
PRD: Planned Residential Development
PRD-1: Planned Residential Development
PRD-2: Planned Residential Development
PRD-3: Planned Residential Development
PRD-4: Planned Residential Development
PRD-5: Planned Residential Development
R-1:
R-15:
R-30:
R-45:
R-60:
RF: Riverfront Recreation
RPZ: Residential Pre-zoning
TD: Transitional Development
PSUZ: Public Service Utility

Home ---> Boards and Commissions ---> Planning and Zoning Commission ---> Z

City of Middletown Website

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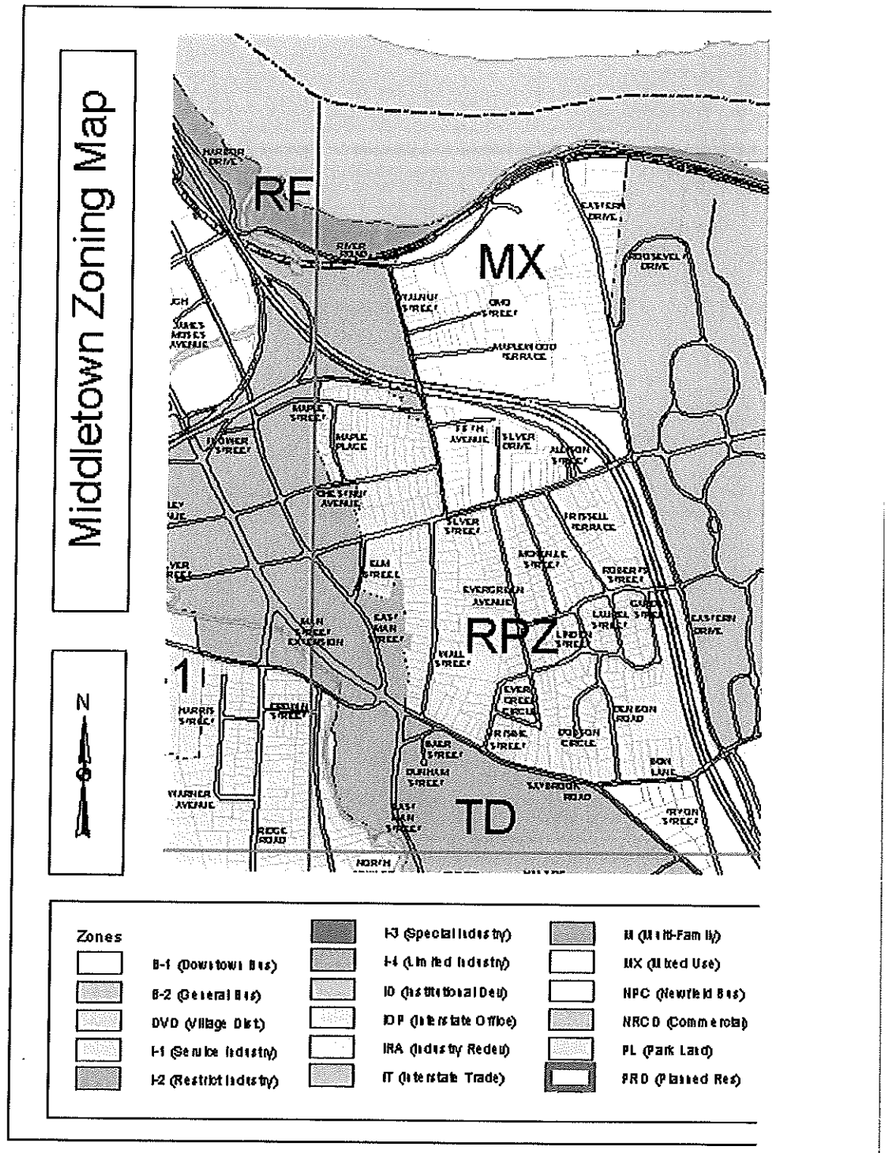
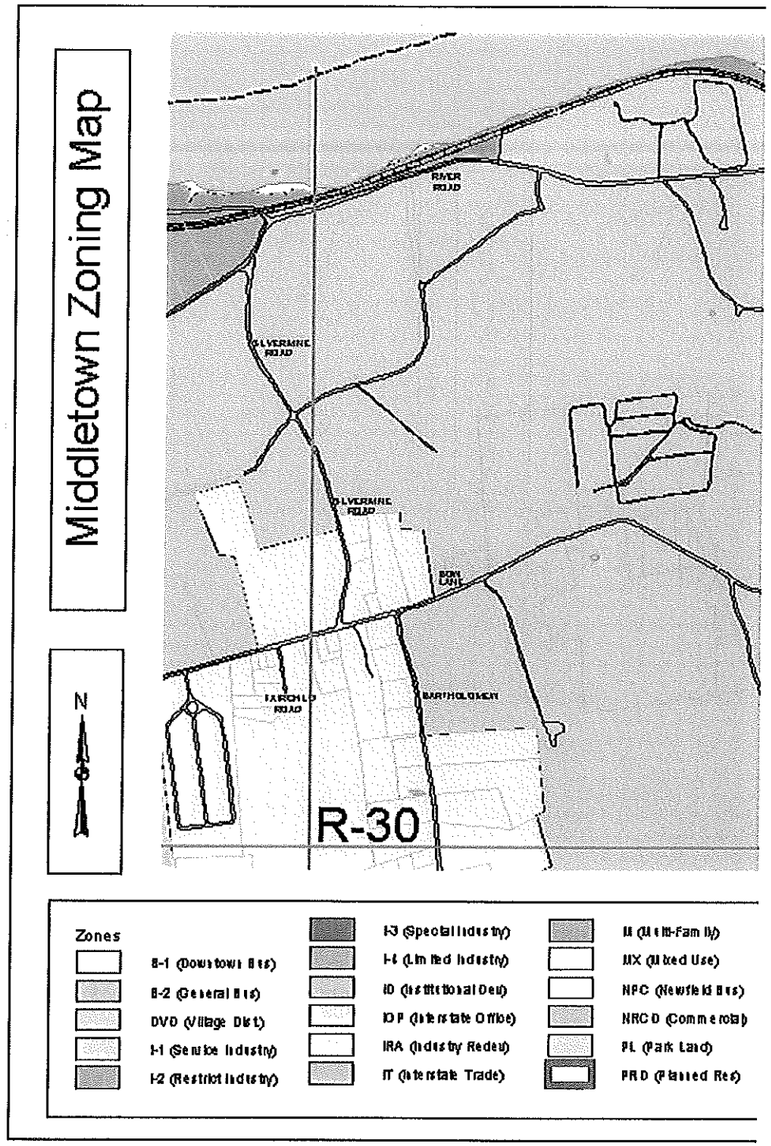


Zoning Codes
B-1: Central Business
B-2: General Business
I-1: Service Industry
I-2: Restricted Industry
I-3: Special Industry
I-4: Limited Industry

G-G



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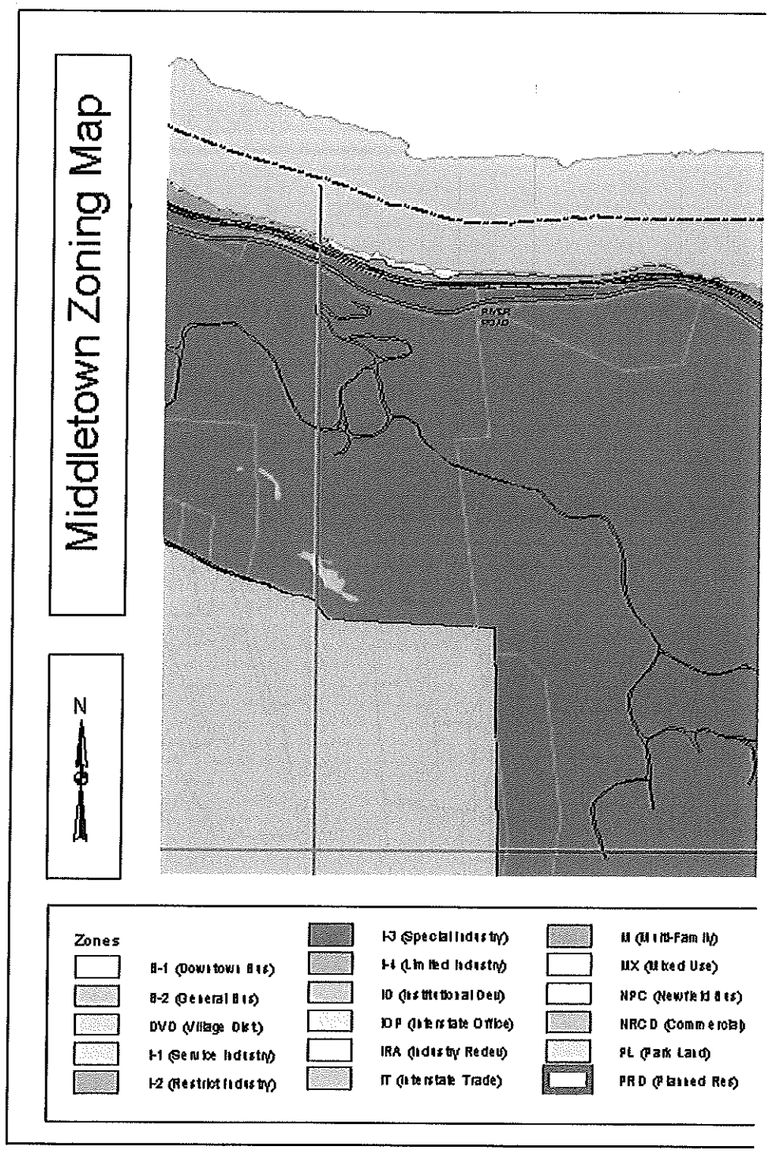

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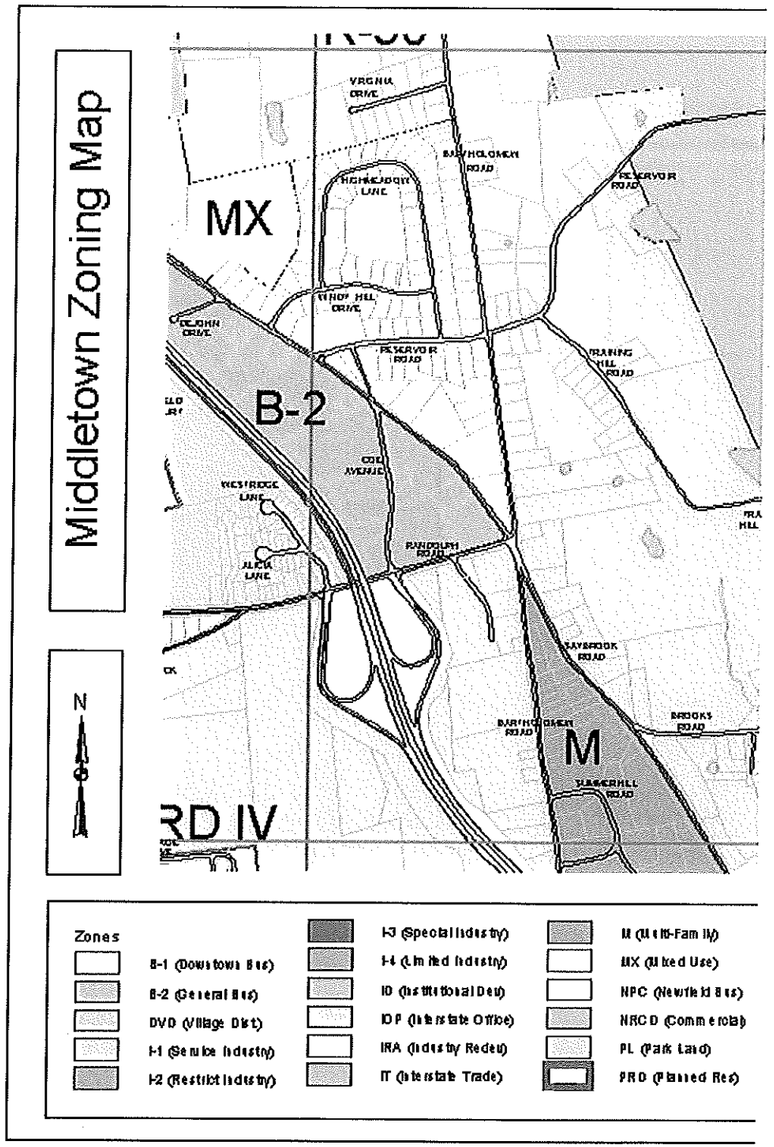

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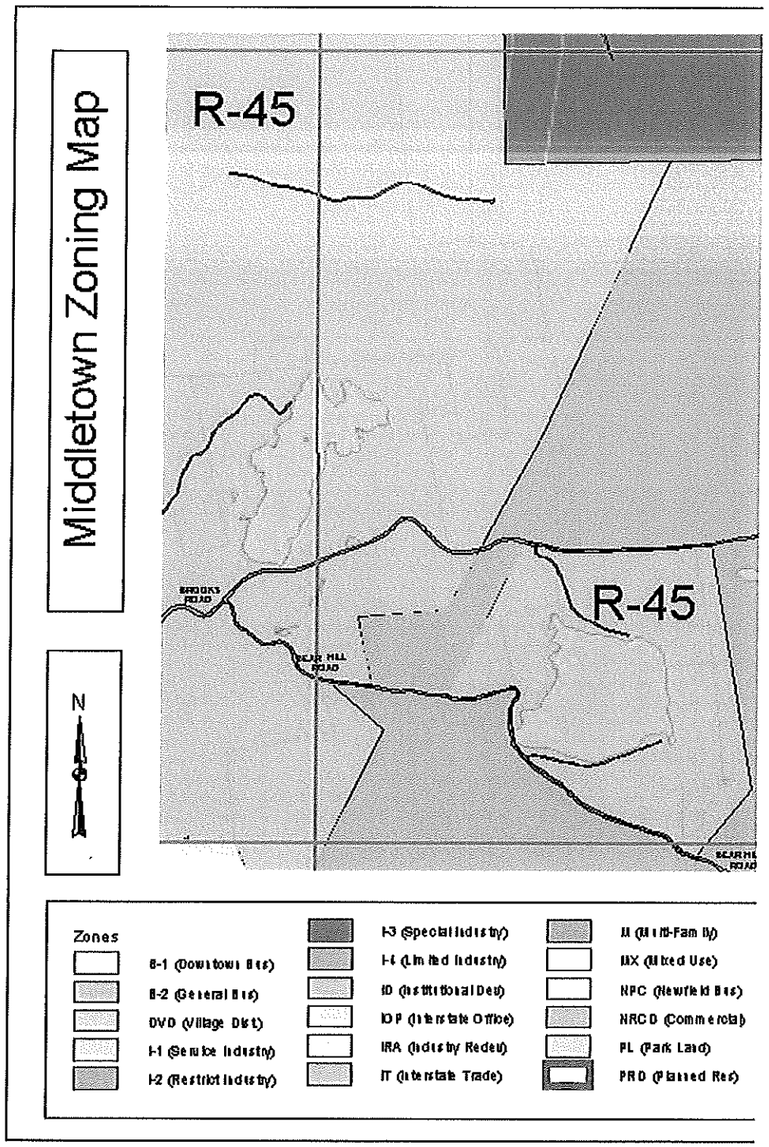

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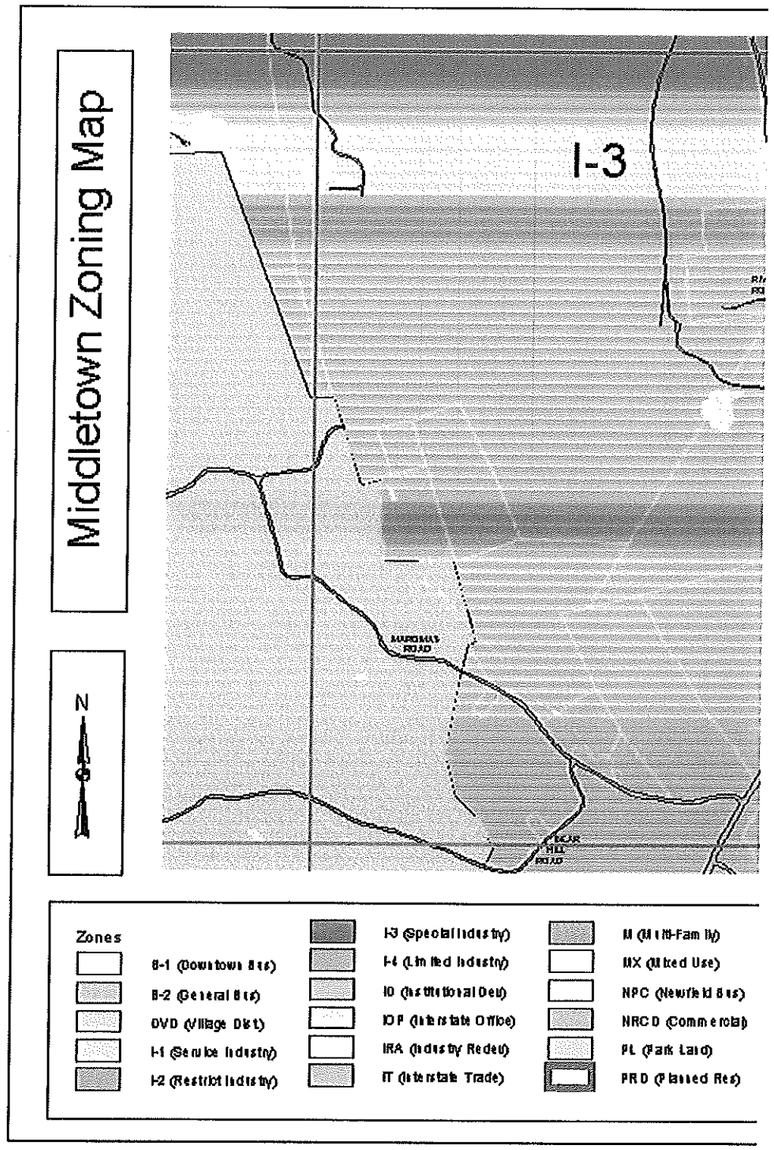

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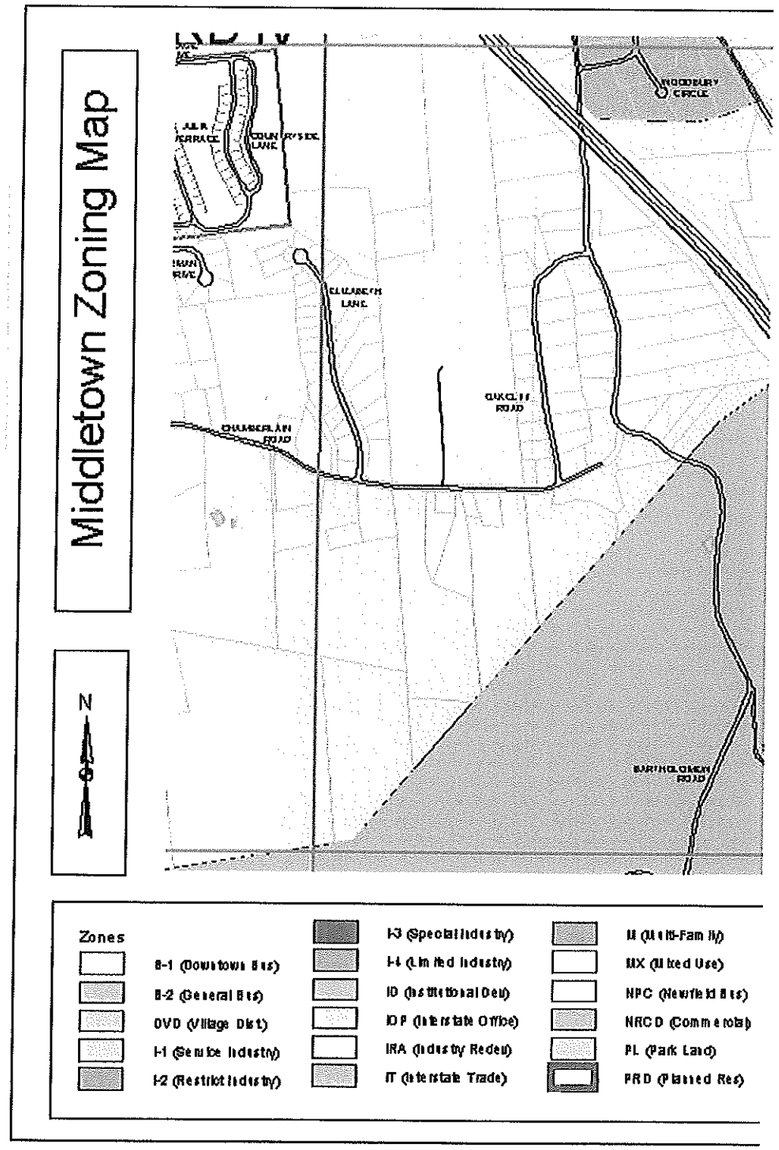

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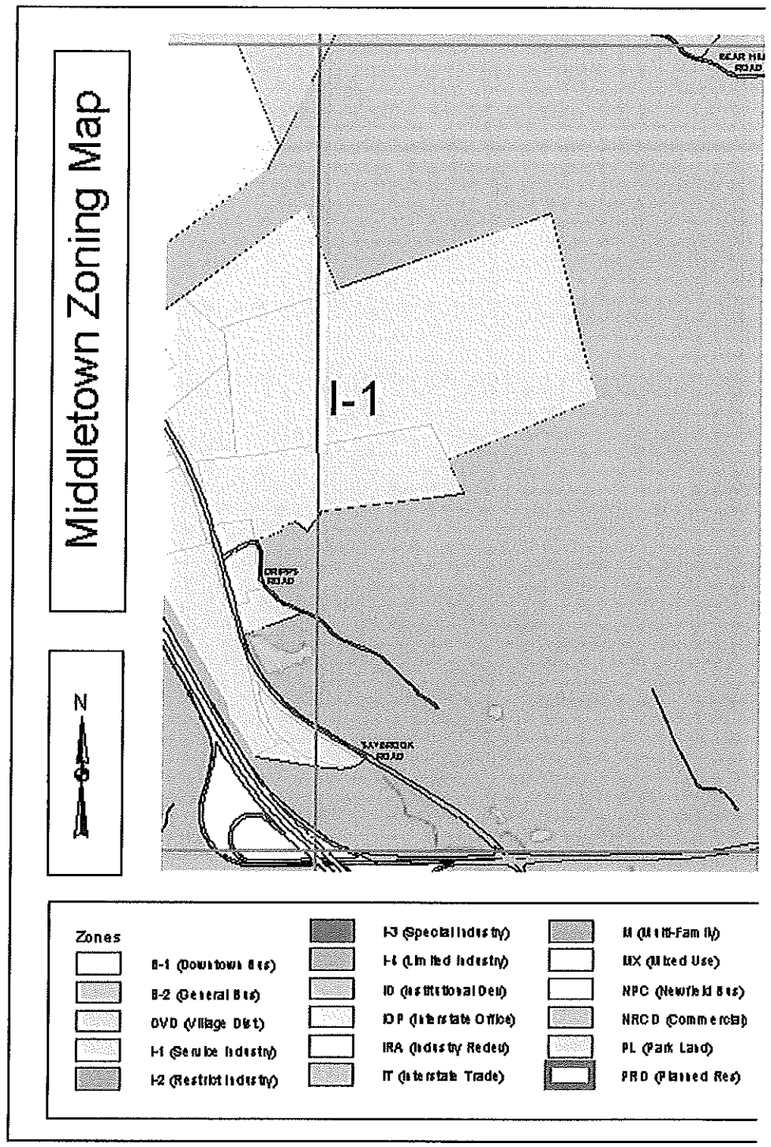

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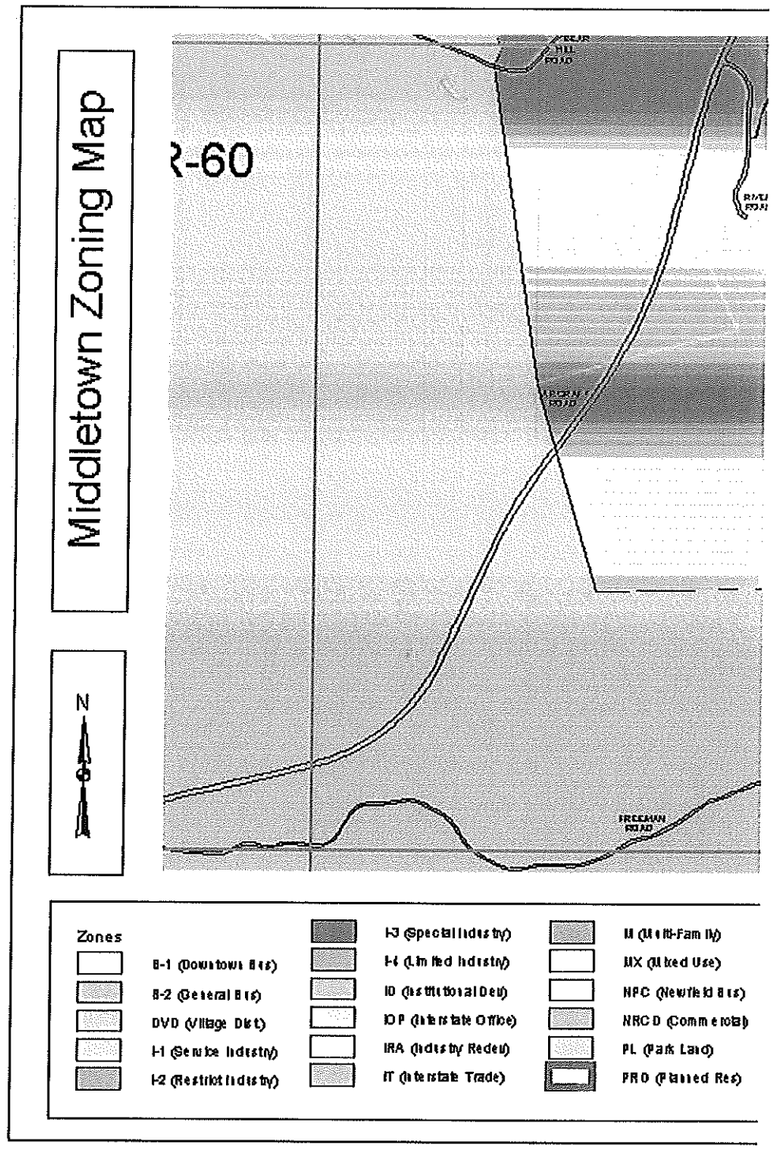
B-G



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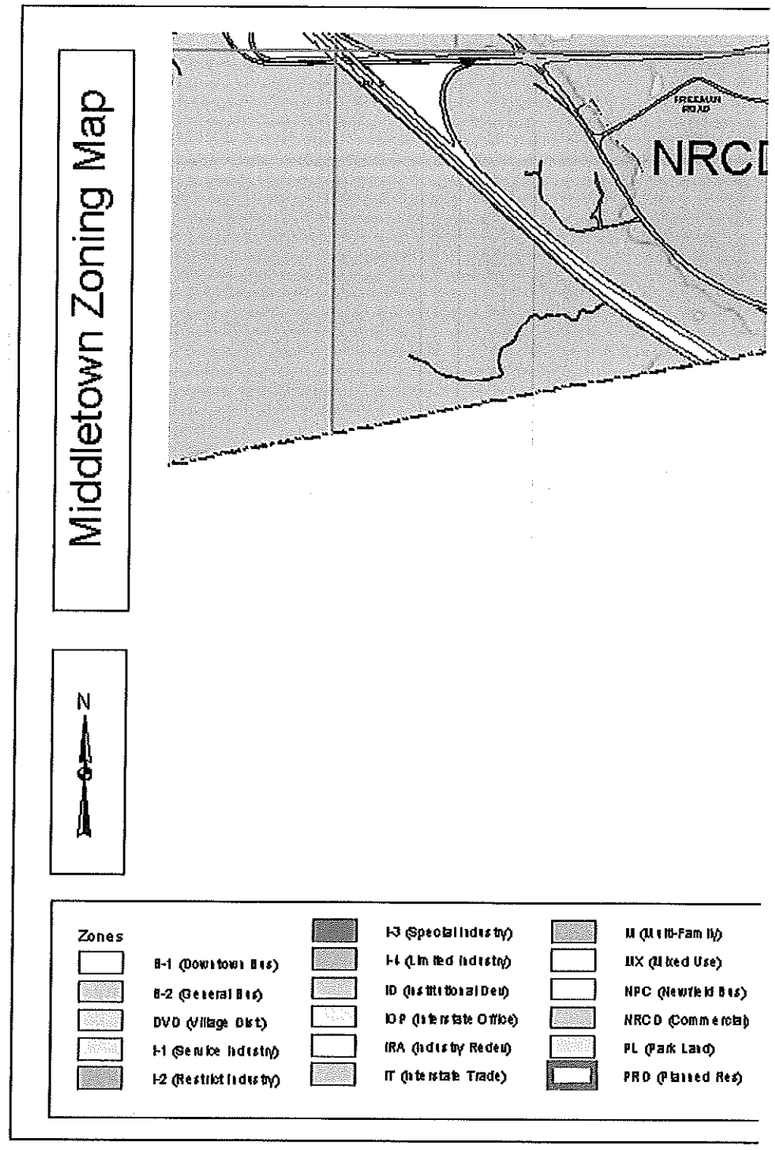

Zoning Codes
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GG

Appendix HH

APPENDIX ITEM HH

CITY OF MIDDLETOWN LAND USE REGULATIONS PERTAINING TO OPEN SPACE

Open Space Subdivision Development (Cluster Development) and Large Lot Environmentally Sensitive Subdivision Development

Taken from the *City of Middletown, Connecticut Zoning Regulations*; Section 44 - Special Exception; Section 44.08 Standards for Special Exception

- 44.08.35 CLUSTER DESIGN TO PRODUCE OPEN SPACE SUBDIVISIONS PURPOSE- The purpose of the open space subdivision provision in the Zoning Code is to encourage and allow for creative and more flexible site planning and building placement and more efficient and economical land development. Furthermore, the provision is designed to provide for greater open space preservation and preservation and/or conservation and enhancement of the sites existing natural features and resources.
  As a means of achieving the above stated purpose, variations in the existing regulations maybe allowed. The following regulations and requirements may be varied or reduced:
  1. lot frontage (Max 50% reduction);
  2. lot area (Max 50% reduction);
  3. lot shape requirements;
  4. yard and setback requirements (Max 50% reduction);
  5. max. length-dead end streets (no greater than 2000 ft);
  6. sidewalk requirements.

PROCEDURE: Applicants proposing open space subdivision are strongly encouraged to meet with the Director of Planning and/or the Environmental Planner to discuss which type of subdivision (open space or conventional) would be the most suitable for the area and consistent with the purposed of the city's regulations.
However, if the applicant proceeds with the open space subdivision option the Commission expressly retains the right to make the determination as to which type of subdivision would be the most suitable for the area and consistent with the purposed of these regulations.
Upon formal application to the Planning and Zoning Commission and a public hearing thereon, the Commission may grant special exception approval and subdivision approval of an open space subdivision.
In addition to the general special exception criteria in Section 44.04 of the Zoning Code, the Commission shall find, when applicable, the following:

7. the specific purposed of the cluster design are being achieved;
8. any and all impacts on natural environmental systems such as wetlands, aquifers, watercourses, and vegetative and wildlife communities have been minimized;
9. there exists the presence of land characteristics which the commission considers favorable for development of an open space subdivision;
10. the proposal will provide for future park and recreational areas including hiking trails;
11. the proposal will not provide for buildings whose silhouettes interrupt the natural, unbroken flow and character of Middletown's ridge lines;
12. To the maximum extent possible the proposal shall minimize excessive and poorly planned grading for streets and building sites; and 7.) the proposal will preserve and protect the city's natural environment by encouraging the

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permanent preservation of specific features and lands which, in turn, contribute to the stabilization and enhancement of residential amenities and values and the maintenance of the City's and the particular areas existing character.

REQUIREMENTS: Plans and supporting material shall be presented for the entire tact containing the information as specified in Section 4 of the Subdivision Regulations. The design of the open space subdivision shall be effectuated by a registered professional group of the following, but not limited to, Landscape Architects, Engineers, Land Surveyors, and environmental professionals. In addition to the requirements in the Subdivision Regulations formal submission of the proposal shall include the following:

13. a city topography map for the area with the properties boundaries superimposed and highlighting areas exceeding 15 percent slope, inland wetlands, flood zones, heavily wooded areas and other significant natural or man made features of the land;
14. a concept plan of the "Topographic Maps of Middletown Connecticut, Showing Drainage Systems and Inland Wetlands Superimposed: showing how the property could be realistically developed using the conventional method of subdivision design;
15. A landscape plan for the entire development showing all features such as streets, sidewalks, trails, entrance structures, recreational facilities, etc. and sealed by a registered Landscape Architect as defined in Section 20-367 of the Connecticut General Statues, Paragraph (3);
16. A state outlining the reasons why the developer believes that the intent of this regulation would be, or not be, satisfied by development as an open space subdivision.

STANDARDS:

17. The tract to be developed shall be not less than ten (10) contiguous acres and must be In a zone having an R prefix.
18. The tact shall be in a single ownership of consolidated into a single tract by a number of different owners by means of a binding agreement which will ensure the uniform treatment and implementation of an overall open space subdivision.
19. The frontage of the entire tract on an existing street must be at least one hundred (100) feet. (Amended effective 6/13/03)
20. To provide a buffer between an open space subdivision and surrounding properties, no structure shall be located within 30 feet of the overall perimeter boundary. The buffer area shall adhere to the standards in the Subdivision Regulations.
21. Proposed buildings shall be related harmoniously to each other, the terrain and to the use, scale and proportions of exiting buildings in the vicinity that have a functional or visual relationship to the proposed buildings. The Planning and Zoning commission may require that buildings be located at the edges of existing fields and open areas and within wooded areas so as to preserve the open character of a site.
22. The total number of building lots in a open space subdivision shall be no greater that the number displayed on the concept plan (as required in Standards) displaying how the property could be developed with a conventional subdivision. The Commission retains the right to exclude lots from the concept plan which they feel are undevelopable. However, the commission may permit a reasonable density bonus equal to a percentage (5% minimum) of the amount of lots derived inn the lot credit calculation provided the required open space is increased by the same percentage. EXAMPLE: A 20 lot open space subdivision with the required

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33% open space can derive 1 additional building lot (5% of 20 lots) provided the required open space is increased to 38%.

23. Where possible and in conformance with the Plan of Development public water and sanitary sewer are preferred. The applicant may use private well and septic systems or community septic systems if approved by the Health Director if it can be shown that the soils shall be suitable for long term disposal of sanitary waste effluent.
24. Areas to be preserved and established as open space are to be in accordance with Section 5.17 of the Subdivision Regulations. In addition, land designated as "Open Space" in an open space subdivision shall
    A. equal not less than thirty three (33%) percent of the total tract;
    B. not include any stormwater detention or retention structures; and
    C. be linked with all building lots within the tract by pedestrian walks.

DESIGN CONSIDERATIONS: The purpose of this section is to provide some guidelines for designing a open space subdivision over and about the regulations of the Zoning Code and the Subdivision Regulations.
The developer shall develop a design that portrays an interrelationship of the type of activity)Residential and open space), the circulation (street and pedestrian paths), and the physical forms (Residential and natural features) constituting the development.
The developer in order to produce an aesthetically pleasing design shall consider the following:

Y. Eliminating constant front yard setbacks (staggering front yards instead) to avoid monotony, provide for a variegated character of the neighborhood;
Z. Providing for scenic vista protection;
AA. The provision of common driveways to reduce the amount of required site clearance and regrading
BB. Utilizing open areas such as fields and meadows by integration of the same in the spatial design of the development;
CC. Providing for artistically designed open space furniture and fixtures;
DD. Providing for pedestrian paths, walking and exercising, with safety and handicapped accessibility in mind;
EE. Providing for protection of water courses but designed as an integral part of the development;
FF. Providing for effective buffering; but not obstructing scenic views;
GG. Providing for maximum use of natural light and solar capabilities;
HH. 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 lease 10 feet lower than the average canopy height of trees on the ridge or hilltop;
II. Create and maintain the concept of a New England green or "commons" area within the site.

This is an information list only. The effective designer can produce much more.
(Added Effective 6/1/92)

- 44.08.36 LARGE LOT ENVIRONMENTALLY SENSITIVE SUBDIVISIONS WHICH ALLOW PRIVATE ROADS DEFINITION- ALarge Lot Environmentally Sensitive Subdivision (LESS) is a subdivision with private roads in the R-45 and R-60 zones which consists of not more than 20 lots all of which meet all zoning and subdivision regulations with the exception of the specific provisions as articulated in this section.

  PURPOSE: The purpose of the LESS provision in the Zoning Code is to encourage and allow for creative and more flexible site planning and building placement and more

efficient and economical land development. Furthermore, 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.
As a means of achieving the above stated purpose, variations in the existing regulations may be allowed. The following regulations and requirements may be varied or reduced;

0. lot frontage (Max 50% reduction);
1. lot shape requirements;
2. rear yard setback requirements (max 50% reduction);
3. maximum length-dead end streets (no greater than 2000 ft);

The primary objective of the LESS is to allow a more environmentally sensitive approach to conventional land subdivision by allowing for the provision of private roads in the outlying rural sections of the city.

PROCEDURE: The applicant shall follow the procedure as outlined in Section 44.08.35 of this Code. In addition to the general special exception criteria in Section 44.04 the Commission shall find that the proposal satisfies the criteria as listed in Section 44.08.35 Procedure with the exception of No. 1. In addition the Commission shall find that the specific purpose and design objectives of the LESS are being achieved.

REQUIREMENTS: The requirements for this proposal shall be those as articulated in Section 44.08.035 Requirements of the Zoning Code.
STANDARDS: In addition to standards 2, 3, 4, 5, 6, in Section 44.08.35 Standards of the Zoning Code, the applicant shall adhere to the following:

4. The tract to be developed shall be not less than ten (10) contiguous acres and must be in an R-45 or R-60 zones, or R-30 zones only where R-45 zoning is required due to water and sewer requirements (see section 21.05)
(Section amended effective 11/15/2000)
5. Areas to be preserved and established as open space are to be in accordance with Section 5.17 of the Subdivision Regulations. In addition, land designed as "Open Space" in an LESS shall:
   A. equal not less than fifteen (15%) percent of the total tract; and,
   B. be linked with all building lots within the tract by pedestrian walks.
6. In order to insure fire safety residential sprinklers, as reviewed and approved by the Fire Chief for the particular district in which the subdivision is located, are required in all homes located with an LESS.
7. Private Roads (a) The City of Middletown roads and walkway specifications shall not apply to this subdivision provided that the notices set forth in Exhibits A and B are within the Declaration of Covenants and Restrictions and affixed to the subdivision map. Further, the composition of such roadways shall be set forth in a narrative from by a registered engineer at the time of submission and such engineer shall certify to the Commission that such composition is a satisfactory composition for the subdivision as submitted.
EXHIBIT A "The roadways are to be maintained by the Association. Middletown Fire and Police Departments strongly direct that the Association maintains these roadways for in the event that such Departments could not reach the site of an emergency because of improper maintenance, the responsibility of such failure would be that of the Police or Fire Departments but rather the Homeowners Association."
EXHIBIT B The roads shown hereon and designated as (street name) will be private roads to be owned and maintained by the adjacent property owners or an Association of such owners. The City of Middletown will not take ownership nor maintain these roads unless and until they are improved to meet the requirements of the City at no cost to the City. (c) Private street construction shall be sufficient to safely and adequately carry potential future traffic which shall be determined on the basis of land areas to be served. The sub base shall consist of gravel, at least

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12" in depth after compaction, construction on the prepared sub base. The gravel shall consist of sound, durable particles of bank or crushed gravel, free from soft, thin, elongated or laminated pieces and vegetable or other deleterious substances. The gravel shall meet grading "A" requirements (Conn DOT Form 813). The gravel shall be spread on the prepared sub grade and shall be bladed, dragged and scraped to conform to the required cross-section. All areas of segregated coarse or fine material shall be corrected or removed and replace with sell-graded material. On all road sections with grades less than 5% shall receive a bituminous surface treatment to prevent erosion of the surface. Bituminous materials shall be selected from the following grades: Asphaltic Cutback MC-70 or Mc-800; Tar RT-2, RT-4, or RT-6. The type of bituminous material to be used will depend upon the character and condition of the surface to be treated, and the season of the yard in which the work is done. The bituminous material shall be applied at the rate of 3/4 gallon per square yard. Sand cover shall be spread to provide uniform application in a amount sufficient to prevent the bitumen from seeping of the surface. When all and foreign material and the second application of bituminous material shall be made at the rate of 1/4 gallon per square yard. Gravel shall be spread on the bitumen and rolled with a power roller weighing not less than 10 tones. The gravel for this surface treatment shall meet the following Grading Pass ½" 100%. Pass 3/8" 85-100%, Pass No. 4 5-30%, Pass No. 8 0-10%, Pass No. 100 0-1.5%.
Installation of the private road surface can be subject to inspection by the Department of Public Works and certification by a professional engineer licensed to practice in the State of Connecticut.
The minimum width of such roadways shall not be less than 18 feet.

DESIGN CONSIDERATION: The design considerations shall be considered for a LESS are those articulated in Section 44.08.35 Design Considerations of the Zoning

SECTION 5.17- OPEN SPACES

Upon consideration of the type of development proposed and determination of the need created by such a development, the Commission may select and require that a particular area of land be reserved for open space in locations designated on the Plan of Development or otherwise where the Commission determines such reservation would be appropriate. The Commission may ask for an advisory report from the Conservation Commission, regarding any application, as to the need for Open Space dedication using this Section.

5.17.01 Open Space Objectives

1. Any Open Space areas shown on the Plan of Development should be incorporated into the subdivision layout as open space. When applicable, open spaces should be arranged to link with any adjacent permanently preserved open spaces.
2. 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;
3. Areas of land for active recreational use should be provided, especially in areas of population concentration;
4. The preservation of prime agricultural soils and historically significant sites should be encourage;
5. Important habitats for fish, wildlife and flora, significant trees and archaeologically significant sites should be retained; and

Appendix II

LISTING OF UNIMPROVED LAND PARCELS TEN ACREAS OR GREATER UNDER PUBLIC ACT 490 CLASSIFICATION

City of Middletown Assessor's Office; dated 7/13/04

NOTE: zone district for some parcels is not indicated. Consultant has indicated those parcels located in Maromas as assumed from road name.(—)

PARCEL ID	OWNER	ST CODE	M B L	ST #	STREET NAME	ZONE	ACRES
R14100	BONIEWSKI STANLEY (EST) CHIARAVALLO	132	08 21-1 2		HIGBY RD		45.08
R14102	BYSIEWICZ STANLEY J	132	07 15-1 14A		PLUM RD (SOUTH)		11.35
R14103	EDDINGER RICHARD M	132	38 35-9 3	1171	RANDOLPH RD		36.60
R14104	FLEET NATIONAL BANK, TRUSTEE	132	13 22-1 37	1200	WASHINGTON ST		254.00
R14109	CITY OF MIDDLETOWN	903	45 48-2 15AB		OLD JOHNSON LA		65.67
R14110	DANIELS RAYMOND R & CAROLINE S (LU)	132	44 42-2 7	874	MILLBROOK RD		19.90
R14113	EDDINGER BARBARA A	132	44 36-17A 20	320	CHAMBERLAIN RD		13.10
R14116	FLEISCHER DAVID N (TRUSTEE)	132	53 37-4 23	3573	RIVER RD		35.75 —
R14120	GRECO ELOISE	132	43 36-15 2		PADDOCK RD		10.02
R14122	GUIDA JOSEPH & ANTHONY	132	31 47-2 8	584	COLEMAN RD		10.90
R14123	HARRIS MARGARET R	132	43 36-14 4	174	WILCOX RD		27.60
R14124	HERRMANN JOHN SR & LYNDA R	132	44 36-17 25+24	111	CRYSTAL LAKE RD		23.43
R14125	HIGGINS FARM INC	132	10 7-1 37	837	RIDGEWOOD RD		28.60
R14127	JABLONSKI FRANK	132	08 21-1 5	153	HIGBY RD		30.00
R14128	KING WILLIAM G	132	10 11-1 2	458	RIDGEWOOD RD		20.90
R14129	PARTELLO MARION ETALS	132	42 24-35 4	368	BOW LA		14.20 —
R14132	ZELEK HENRY J	132	06 10-1 3	275	MIDDLE ST		10.90
R14133	KRIWOKULSKI ANTHONY & LILLIAN	132	42 25-1 30	614	BOW LA		13.60 —
R14135	MAKUCH EDWARD J (LU) (RESP)	903	31 47-2 9-1		ROUND HILL RD		15.07
R14139	MIDDLE BOARDMAN ASSOC LTD PTSHP	132	02 6-1 16	218	BOARDMAN LA		87.98
R14142	RAK JOYCE ANN & JOHN S TRUSTEE	132	52 38-1 14	514	BEAR HILL RD		15.69 —
R14145	ROBERTS EARLE V JR	132	47 25-1 20	785	BOW LA		11.00 —
R14146	PULCINELLA RICHARD J &	132	04 20-1 15	691	PRESTON AVE		13.60
R14147	SCHIEMAN ADOLPF JR & JOHN	132	01 2-1 4		BRADLEY ST		11.00
R14148	SCHILKE REALTY ASOC	132	53 37-4 30	492	BEAR HILL RD		61.72 —
R14151	SCIRPO SEBASTIAN + KATHLEEN J	132	32 46-1 11	2155	SOUTH MAIN ST		12.61
R14153	SMIGEL JOHN G JR & PETER	132	52 38-1 3+6X	879	BROOKS RD		10.62 —
R14155	SMIGEL PETER M & LINDA L	132	52 32-2 5	962	BROOKS RD		20.00 —
R14158	PETTENGILL LOUIS C & SUSAN T	132	50 49-1 16	1800	BARTHOLOMEW RD		11.15 — ?
R14159	UBALDINI ARMED	132	15 28-4 2	762	WADSWORTH ST		10.01
R14160	WILSON LINDA D	132	32 47-2 3	2200	SOUTH MAIN ST		69.65
R14162	WHITE JAMES F + EDWARD C	132	08 21-3 2		HIGBY RD		25.89
R14163	WILSON RALPH E (8/10) & ALLISON M (2/10)	132	42 31-4 2		BOW LA		26.00 —

Appendix II

LAND 10 ACRES +/- SELECTED ZONES

PARCEL ID	OWNER	ST CODE	M B L	ST #	STREET NAME	ZONE	ACRES
R14165	HASBROUCK WENDY L & JEFFREY K	132	45 48-1 2AE	533	CHAMBERLAIN HILL RD		11.47
R14166	HASBROUCK BRETT	132	45 48-1 2AC	1262	MILLBROOK RD		18.12
R14167	BROCK RICHARD L	132	38 36-12 3	796	PROUT HILL RD		16.80
R14169	BORRELLI STEPHEN G & BARBARA L	132	42 30-6 33	50	FAIRCHILD RD		19.40
R14170	HAYN LOUIS E (2/3) & ANITA D (1/3)	132	44 42-1 3AX	1080	CHAMBERLAIN HILL RD		12.74
R14174	UNITED AIRCRAFT	132	52 32-3 4		RIVER RD	I ?	694.36
R14176	CONN LIGHT & POWER	132	54 50-1 4A		FREEMAN RD	R-60	48.50
R14393	STATE OF CONNECTICUT ?	901	42 24-35 1A	1111	SILVER ST		32.00
R14273	FLATLEY JOHN J &	230	05 2-2 8-2		INDUSTRIAL PARK RD	IT	13.04
R14274	FLATLEY JOHN J &	338	05 2-2 8-3		INDUSTRIAL PARK RD	IT	17.91
R00728	BAYBERRY CREST REALTY CO	112	12 22-3A CA11		PLAZA DR	M	10.00
R02254	CONN LIGHT & POWER CO	340	43 36-17A 6-11		BARTHOLOMEW RD THRU	M	13.58
R02407	CR MEADOWAY LIMITED PARTNERSHIP	112	21 17-5A CA2		ROSE CIR	M	17.30
R02414	FAH WILLOWCREST LIMITED PARTNERSHIP	112	19 17-5A CA3		NEWFIELD ST	M	12.02
R12734	WOODBURY REALTY CO	112	48 37-1 CA9		BARTHOLOMEW RD	M	14.80
E30030	CITY OF MIDDLETOWN	903	23 23-10 12	297	BUTTERNUT ST	M	14.59
R01289	BROTHERS MICHAEL	130	21 17-5A 2		NEWFIELD ST (REAR)	M	13.50
R08733	NEWFIELD STREET OF MIDDLETOWN	130	19 17-5A 24B		NEWFIELD ST (REAR)	M	10.46
R06027	GEORGE STREET OF MIDDLETOWN LLC	130	13 22-8 1AA	207	GEORGE ST	M	23.00
E30192	PAPANDREA JOHN TRUSTEE	342	42 30-6 15B	434	SAYBROOK RD	MX	16.80
R05783	KALMAR REALTY ASSOCIATES	342	43 30-6 23-25	520	SAYBROOK RD	MX	14.29
E30210	CITY OF MIDDLETOWN	903	27 29-2 28	421	WADSWORTH ST	R 15	103.50
R05180	HIGGINS FARM INC	130	09 7-2 16		RIDGEWOOD RD (REAR)	R-1	22.80
R06071	RATHIE SATPAL	130	09 7-2 17		RIDGEWOOD RD (REAR)	R-1	16.22
R12028	TUTTLE ROAD ASSOCIATES	130	09 7-2 2		NEWFIELD ST (REAR)	R-1	37.93
R14436	HIGGINS RICHARD M	132	09 7-2 14	1010	RIDGEWOOD RD	R-1	12.31
E30381	CITY OF MIDDLETOWN	903	15 PT 10&28		WADSWORTH ST	R15	25.00
E30383	CITY OF MIDDLETOWN	903	11 22-2 4B		WESTFIELD ST	R15	16.20
E30586	U.S. GOVERNMENT	900	10 11-1 1B		MILE LA	R15	47.20
E30147	CITY OF MIDDLETOWN	903	30 35-6 2		LONG HILL RD	R-15	17.80
E30369	CITY OF MIDDLETOWN	903	10 11-1 22A-24		NEWFIELD ST	R-15	48.10
E30436	LUTHERAN SOCIAL SERVICES OF N.E.INC.	906	11 16-1 10	624	CONGDON ST WEST	R-15	10.20
E30468	MIDDLETOWN BIBLE CHURCH	906	07 11-2 4	360	EAST ST	R-15	18.90
E30488	NORWICH R.C. DIOCESAN CORP.	906	16 29-2 1A	1740	RANDOLPH RD	R-15	22.99

LAND 10 ACRES +/-

SELECTED ZONES

PARCEL ID	OWNER	ST CODE	M B L	ST #	STREET NAME	ZONE	ACRES
E30495	PINE GROVE BURIAL ASSOC.	970	27 29-13 36		SOUTH MAIN ST	R-15	28.40
E30562	STATE OF CONNECTICUT	901	27 29-17 5		LONG HILL RD & PINE ST	R-15	40.40
E30567	STATE OF CONNECTICUT	901	16 34-2 3	60	DANIELS ST	R-15	31.88
E31127	CITY OF MIDDLETOWN	903	10 11-1 21-20		NEWFIELD ST (TIGER LAN	R-15	75.00
R03666	245 LONG HILL ROAD ASSOCIATES LLC	340	27 29-2 22A	245	LONG HILL RD	R-15	20.35
E30218	CITY OF MIDDLETOWN	903	11 22-2 5B		WESTFIELD ST	R-15	22.00
E30435	LUTHERAN SOCIAL SERVICE OF N.E.INC.	906	11 16-1 22A		RIDGEWOOD RD	R-15	20.14
E30870	CITY OF MIDDLETOWN	903	27 29-2 22		LONG HILL RD	R-15	12.20
E30981	MIDDLESEX LAND TRUST INC	905	15 28-4 8		MIDDLEFIELD ST (REAR)	R-15	19.80
E30989	STATE OF CONN	901	15 34-1 2		WADSWORTH ST	R-15	121.60
R01263	BROCK RICHARD L	130	43 36-12 23		MILLBROOK RD	R-15	12.60
R01589	CAMP GEORGE M ETALS	101	13 22-1 37	1200	WASHINGTON ST	R-15	21.00
R05182	HIGGINS FARM INC	130	10 7-1 38		RIDGEWOOD RD	R-15	16.50
R05334	CITY OF MIDDLETOWN	903	11 16-2 34A		WESTFIELD ST	R-15	25.16
R01866	CERRITELLI MADELYN J	101	06 7-1 29	85	FLYNN LA	R-15	14.20
R02192	CONGDON PHYLLIS T & JASON W TRUSTEES	106	11 11-1 3	430	RIDGEWOOD RD	R-15	23.63
R02538	CYRANOWICZ ROBERT D	130	14 22-5 32A		BOSTON RD	R-15	12.00
R03273	DYPA GENEVIEVE MARY+EDWARD JOHN	130	07 11-2 9	666	CONGDON ST WEST	R-15	22.38
R03725	FLAGG JUANA M G	109	15 34-1 8	15	LAUREL GROVE RD	R-15	10.43
R05737	CITY OF MIDDLETOWN	903	02 5-1 6AA		STANTACK RD	R-15	14.25
R06088	KOLMAN JOHN F JR & JAMES	130	08 21-3 9		HIGBY RD	R-15	11.60
R06994	MAKUCH JENNIE B	130	08 21-3 8		BALLFALL RD (REAR)	R-15	15.20
R06995	MAKUCH JENNIE B	130	08 21-3 6		BALLFALL RD (REAR)	R-15	13.20
R07412	MAZZOTTA SEBASTIAN J	130	08 22-1 25-1		BALLFALL RD	R-15	22.30
R07568	RIDGEWOOD ROAD DEVELOPMENT LLC	101	10 7-1 34	665	RIDGEWOOD RD	R-15	15.70
R07715	MERRIAM ROBERT W	106	15 28-4A 6		MIDDLEFIELD ST	R-15	17.20
R10789	MOSKOWITZ MYRA; BENNETT RHODA;	130	10 11-1 AA		MILE LA	R-15	13.12
R11255	SPECYALSKI VALENTINE	101	13 22-5 30	323	BOSTON RD	R-15	10.00
R11441	LUTHERAN SOCIAL SERVICES OF N.E.INC.	906	10 11-2 11		RIDGEWOOD RD	R-15	26.00
R08906	PASSANESI LISA (1/2) & DEAN (1/2)	130	11 16-1 13		LISA LA	R-15	29.80
R09671	REYNOLDS JOHN F III & FRANCES E	109	10 7-1 36	737	RIDGEWOOD RD	R-15	24.70
R13659	KNOLL RIDGE OF MIDDLETOWN LLC	101	11 16-2 31	142	BROOKVIEW LA	R-15	14.87
R13841	GUIHEEN REVOCABLE LIVING TRUST	130	10 11-1 1AB		RIDGEWOOD RD	R-15	57.00
R13896	MYJAK ALICE	130	15 28-1 11A		BOSTON RD	R-15	17.20

LAND 10 ACRES +/-

SELECTED ZONES

PARCEL ID	OWNER	ST CODE	M B L	ST #	STREET NAME	ZONE	ACRES
E31133	CALVARY CEMETERY ASSOC THE	970	42 30-6 34		BOW LA	R-3	19.20
R09297	POLISH FALCONS OF MIDDLETOWN INC	353	44 36-19 PFC		PROUT HILL RD	R30	15.80
E30072	CITY OF MIDDLETOWN	903	40 47-2 17		COLEMAN RD (REAR)	R-30	23.30
E30074	CITY OF MIDDLETOWN	903	40 47-2 12		COLEMAN RD	R-30	25.20
E30164	CITY OF MIDDLETOWN	903	44 36-24 40B		MILLBROOK RD	R-30	26.31
E30416	FELLOWSHIP BAPTIST CHURCH	906	48 31-3 17	20	BROOKS RD	R-30	10.81
E30463	MIDDLESEX LAND TRUST	905	45 42-2 5A		MILLBROOK RD	R-30	12.27
E30489	NORWICH R.C. DIOCESAN CORP.	906	43 36-17A 2	181	RANDOLPH RD	R-30	51.99
R11701	THE CONN LIGHT & POWER CO	423	07 10-5 17A&		PLUMB RD (NORTH)	R-30	12.83
R13965	OTT JOHN S & CECILIA S	380	06 10-5 3A		MINER ST	R-30	31.70
E30075	CITY OF MIDDLETOWN	903	07 10-5 17		COUNTRY CLUB RD	R-30	50.40
R00719	PELLICI GREGG	130	44 36-21 C4A		MILLBROOK RD	R-30	11.90
R01258	FIFTY ACRES LLC	130	30 41-1 3		SOUTH MAIN ST	R-30	46.50
R01265	BROCK RICHARD L	130	38 35-10 24		ARBUTUS ST	R-30	17.60
R01473	BYSIEWICZ JEAN S(1/3)ETALS	130	07 15-1 14		EAST ST	R-30	28.10
R01489	BYSIEWICZ THADDEUS P	130	07 15-2 5A		PLUMB RD (SOUTH)	R-30	17.00
R01673	CARLINI LEROY A (EST)	130	48 37-4 7		TOLL GATE RD REAR	R-30	27.00
R14594	COSKEY EVELYN A	130	48 31-3 19		TRAINING HILL RD	R-30	15.70
R05356	ROCKY HILL ENTERPRISES INC	130	44-43 36-17A 17		CHAMBERLAIN RD	R-30	77.20
R05360	MIDDLESEX LAND TRUST,INC	950	44 42-2 2		CHAMBERLAIN HILL RD	R-30	14.09
R05364	MIDDLESEX LAND TRUST, INC	905	44 36-16 3A1		MILLBROOK RD	R-30	10.04
R05524	JACKSON JOHN A	130	44 36-16 11		WILCOX RD	R-30	23.40
R14763	OTT JOHN S & CECILIA S	380	06 10-5 5		MINER ST	R-30	10.51
R02265	CONN LIGHT & POWER CO	132	39 47-2 45		ARBUTUS ST (REAR)	R-30	10.90
R02356	COSKEY EVELYN A	717	48 31-3 1		TRAINING HILL RD	R-30	22.70
R03512	FITZNER WILLIAM & KIM	101	06 10-5 11	49	MINER ST	R-30	10.83
R03727	MCBRIEN KEVIN M & BARBARA A	104	44 36-16 4	470	CHAMBERLAIN RD	R-30	17.10
R04312	GAUTIERI HELEN D & LISA & CNB (TRS)	130	48 37-4 7X&10		SAYBROOK RD	R-30	21.00
R04788	GUIDA JOSEPH & ANTHONY	130	31 47-1 8		COLEMAN RD	R-30	27.00
R04925	CDS DEVELOPERS LLC	130	38 35-9 6		ARBUTUS ST	R-30	16.00
R04932	ROUND HILL HOLDINGS LLC (1/2INT) &	130	40 47-1 37		KELSEY ST (REAR)	R-30	26.04
R04958	HARRIS RAYMOND W & LINDA D	130	44 42-2 4		CHAMBERLAIN HILL RD	R-30	10.00
R04960	HARRIS WILLIAM B	130	44 42-1 3H		CHAMBERLAIN RD	R-30	21.37
R05070	SUNSET TERRACE LLC	130	30 35-8 31		MAPLE SHADE RD	R-30	14.44

PARCEL ID	OWNER	ST CODE	M B L	ST #	STREET NAME	ZONE	ACRES
R05683	JONES ORRIN E JR & ELAINE R	130	30 35-8 14		COLEMAN RD	R-30	56.00
R06843	LONGWORTH ROBERT S	130	45 48-2 13		MILLBROOK RD	R-30	13.20
R09588	RAYMOND JACQUELINE	130	07 10-5 20		COUNTRY CLUB RD	R-30	17.49
R10059	RUFFINO SAMUEL J (EST) & ALICE	130	31 46-1 3A		LONG HILL RD	R-30	14.20
R12959	LEPAGE HOMES INC	130	30 40-2 3		LAUREL GROVE RD	R-30	19.01
R12960	LEPAGE HOMES INC	130	16 40-1 1		LAUREL GROVE RD	R-30	17.04
R13066	KRIWOKULSKI ANTHONY & LILLIAN A	130	49 42-1 6		CHAMBERLAIN RD	R-30	11.72
R13563	CHAMBERLAIN HILL ASSOCIATES LLC	106	44 42-1 3AX1	309	CHAMBERLAIN RD	R-30	19.67
R13692	CHAMBERLAIN HILL ASSOCIATES LLC	717	44 42-1 3AX2		CHAMBERLAIN HILL RD R	R-30	59.40
R13968	REYNOLDS PHILIP A TRUSTEE	130	30 35-8 10A		MAPLE SHADE RD	R-30	42.20
R14501	BORENT ROBIN & GREGORY	132	44 42-1 2		CHAMBERLAIN RD	R-30	13.55
E30179	CITY OF MIDDLETOWN	903	29 29-10 35		RANDOLPH RD	RPZ	17.50
E30374	CITY OF MIDDLETOWN	903	28 30-11 44-31A	310	HUNTING HILL &	RPZ	12.60
E30997	WESLEYAN UNIVERSITY	901	25-27 29-1 28		LONG LA	RPZ	61.53
R11713	MIDDLETOWN ELKS HOME CORP THE	353	42 30-9 45	44	MAYNARD ST	RPZ	12.90
E30063	CITY OF MIDDLETOWN	903	35 30-9 45-48		BIDWELL TERR & MAYNA	RPZ	13.00
E30351	CITY OF MIDDLETOWN	908	27 26-A 26		DADDARIO RD	RPZ	11.90
E30529	ST. JOHN R.C. CEMETERY	970	19 17-5 43		JOHNSON ST	RPZ	17.60
E31009	WESLEYAN UNIVERSITY	950	25 23-20 32		LONG LA	RPZ	94.69
R04985	HARVEY EDWIN G & WILLIE H	106	43 30-24 13-2		RANDOLPH RD	RPZ	24.00
R07460	MCCAULEY EDITH & SMITH JANE	130	43 30-24 13-1		RANDOLPH RD	RPZ	13.40
R10243	SALAFIA PHILIP M JR ETALS	130	19 17-5 44		CATHERINE ST	RPZ	20.80
R14015	BONGIORNO JUDY J & JOSEPH	132	43 30-24 1AB	645	SAYBROOK RD (REAR)	RPZ	10.93
E31131	SHILOH BAPTIST COMMUNITY	906	25-27 29-1 28-1D		WEST ST	RPZ	10.00

Appendix JJ

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

December 21, 2001

Preliminary Approval

Mr. Guy Russo, Director
Middletown Water & Sewer Department
100 Riverview Center
Middletown, CT 06457

Re: CRISP Sewer Service Area

Dear Mr. Russo:

Representatives of the City of Middletown, Maguire Group, Connecticut Department of Economic and Community Development and Department of Environmental Protection have met on September 21, October 4, October 19, November 7 and December 6 on the proposed sewer service area for the Connecticut River Interceptor Sewer Project. The meeting of October 4 also included an extensive field review of the proposed sewer service area.

All parties to this meeting reached agreement on the proposed sewer service area that includes two large parcels identified on a map titled "Connecticut River Interceptor Sewer Project Proposed Sewer Service Area Map" dated December 10, 2001 produced by Maguire Group. These two parcels included I-3 zones near Pratt & Whitney and the Maromas Dev. LLC property. In addition, the agreed upon service area generally included all facilities currently existing in the block of land between Eastern Drive, River Road, Silvermine Road and Bow Lane. It also includes abutting residential properties along Bartholomew Road and Virginia Drive and a limited extension on Bow Lane.

These service areas are hereby granted preliminary approval with the following conditions:

- Maguire Group shall develop and submit for review and approval calculations of flow needs for the proposed sewer service areas.
- Current state property being considered for conveyance to the City of Middletown shall be indicated as "Recreational Area" for which an allowance will be made for reasonable flows from active recreational purpose only. Future connections from active recreational facilities will be allowed to either sewer system on Bartholomew Road or River Road. Non recreational usage, if we proposed, shall not be connected to the sewer.
- The City of Middletown shall commit to requesting an interim change to the Conservation and Development Policies Plan for Connecticut (1998-2003) to establish consistency between the sewer service area map and the locational Guide Map.

- The City of Middletown shall commit to modifying its zoning designations to eliminate the I-3 designation to any lands in the Maromas area not proposed in the sewer service area. It is also my understanding that the Planning and Zoning Commission will be reviewing designated uses within the I-3 zone to eliminate high risk uses. The concept of reducing high risk uses in this I-3 zone is encouraged by DEP.
- The NRG property will not be shown as included in the service area, but will be noted on the map that existing sanitary flows will be accommodated in the design calculations.
- Flow calculations for the proposed sewer service area be developed and agreed to by the DEP.

Upon submittal of documents which satisfactorily address the above conditions, a final approval letter will be issued.

The DEP, pursuant to state statute and through its facility planning efforts, seeks sewer service areas, local zoning, plans of development and the Conservation and Development Policies Plan for Connecticut. The cooperation of Middletown to achieve the harmony sought by DEP is greatly appreciated.

Sincerely,

Thomas M. Morrissey
Director
Bureau of Water Management
Planning and Standards Division

TMM:WRH:sn

Cc: Domenique Thornton, Mayor
Planning and Zoning Commission
Michael Moore, DECD
Dick Willett, Maguire Group

§ 9-1.1. Modification of approved Connecticut River Interceptor Sewer Service Area. [Amended 11-13-2002]

A. The Water Pollution Control Authority may modify the boundaries of the Connecticut River Interceptor Sewer Service Area in accordance with the requirements of this section.

B. Prior to modifying the boundaries of the approved sewer service area, the Water Pollution Control Authority shall hold a public hearing. Notice of the public hearing shall be published twice in a newspaper of general circulation in the City, the first not more than 15 nor less than 10 days before the hearing and the second at least two days before the public hearing. In addition, notice shall be given, by certified mail, return receipt requested, to each owner of record of land located in the area to be designated and to the Connecticut Commissioner of Environmental Protection.

C. The Water Pollution Control Authority may designate a proposed additional area only upon finding that:

(1) The proposed expansion shall be for an identified proposal or development within the I-3 Zone.

(2) The identified proposal or development shall be consistent with the I-3 Zone; and if not consistent and requiring a special exception, then the special exception must be granted prior to the appeal to the Water Pollution Control Authority to amend the sewer service area.

(3) The sewer extension must be constructed to Water Pollution Control Authority sewer specifications.

(4) The extension of sewer does not adversely affect the flow characteristics of the current sewer infrastructure.

D. Designation of a proposed additional area shall require the approval of the Water Pollution Control Authority as required by statute.

E. Upon approval by the Water Pollution Control Authority, an updated water pollution control plan for the municipality shall be filed with the Connecticut Commissioner of Environmental Protection in accordance with Section 7-246(b) of the Connecticut General Statutes.

F. After the filing of the updated water pollution control plan, the matter shall be forwarded to the Common Council for its action. The boundaries of the additional area shall be set out by ordinance. Prior to taking action on the ordinance, the Common Council shall hold a public hearing on the ordinance at the duly advertised monthly meeting in which the matter is scheduled to be heard.

G. The Water Pollution Control Authority shall be responsible for obtaining the approval of the Connecticut Department of Environmental Protection pursuant to Section 22a-416 of the Connecticut General Statutes for the extension of the Connecticut River Interceptor Sewer into the additional area.

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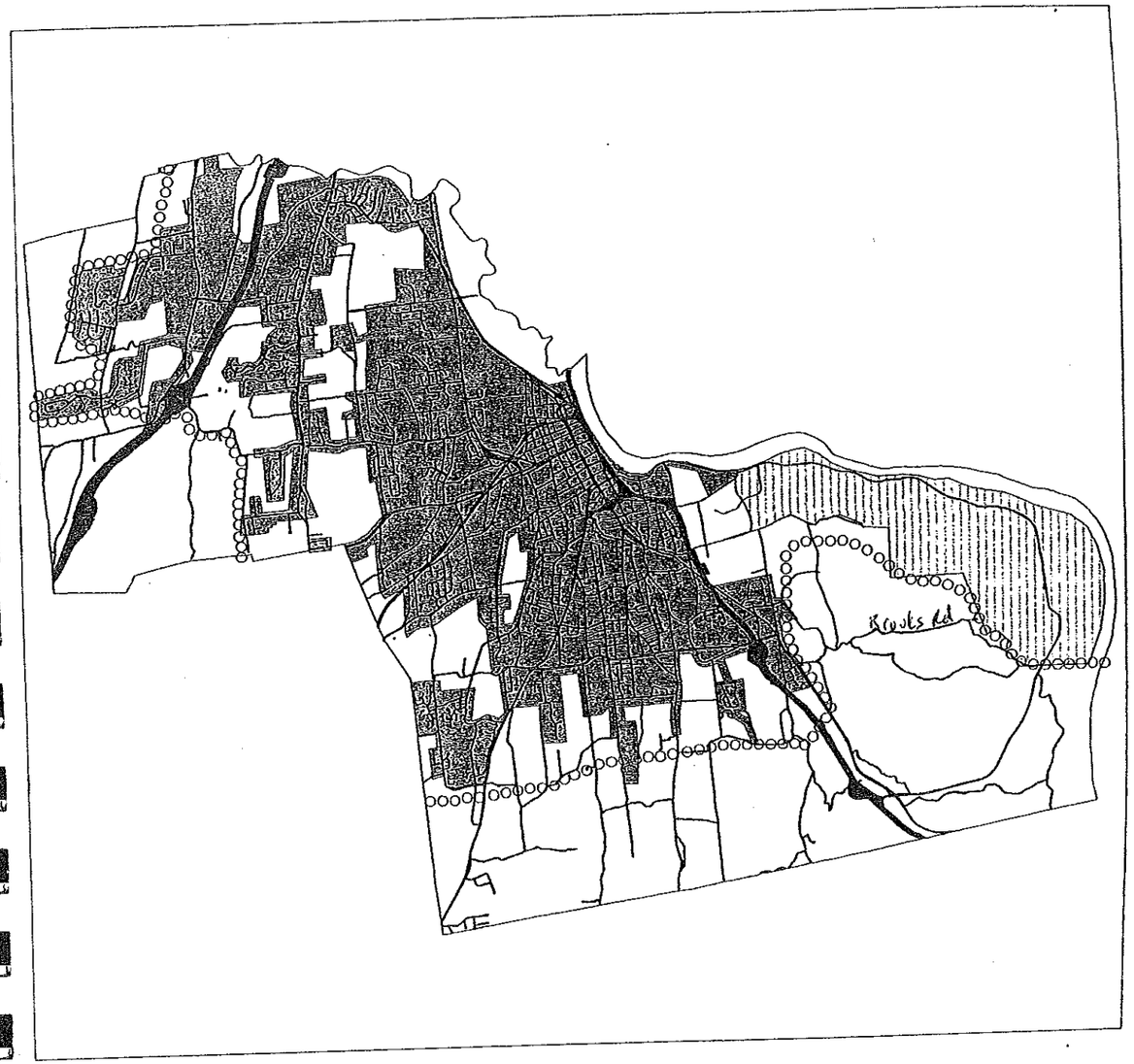


MIDDLETOWN PLAN OF DEVELOPMENT
Middletown, CT

Figure 12.2
Sewer Service Area

- Existing Service Areas
- Planned Sewer Extension
- Proposed Generalized Service Boundaries

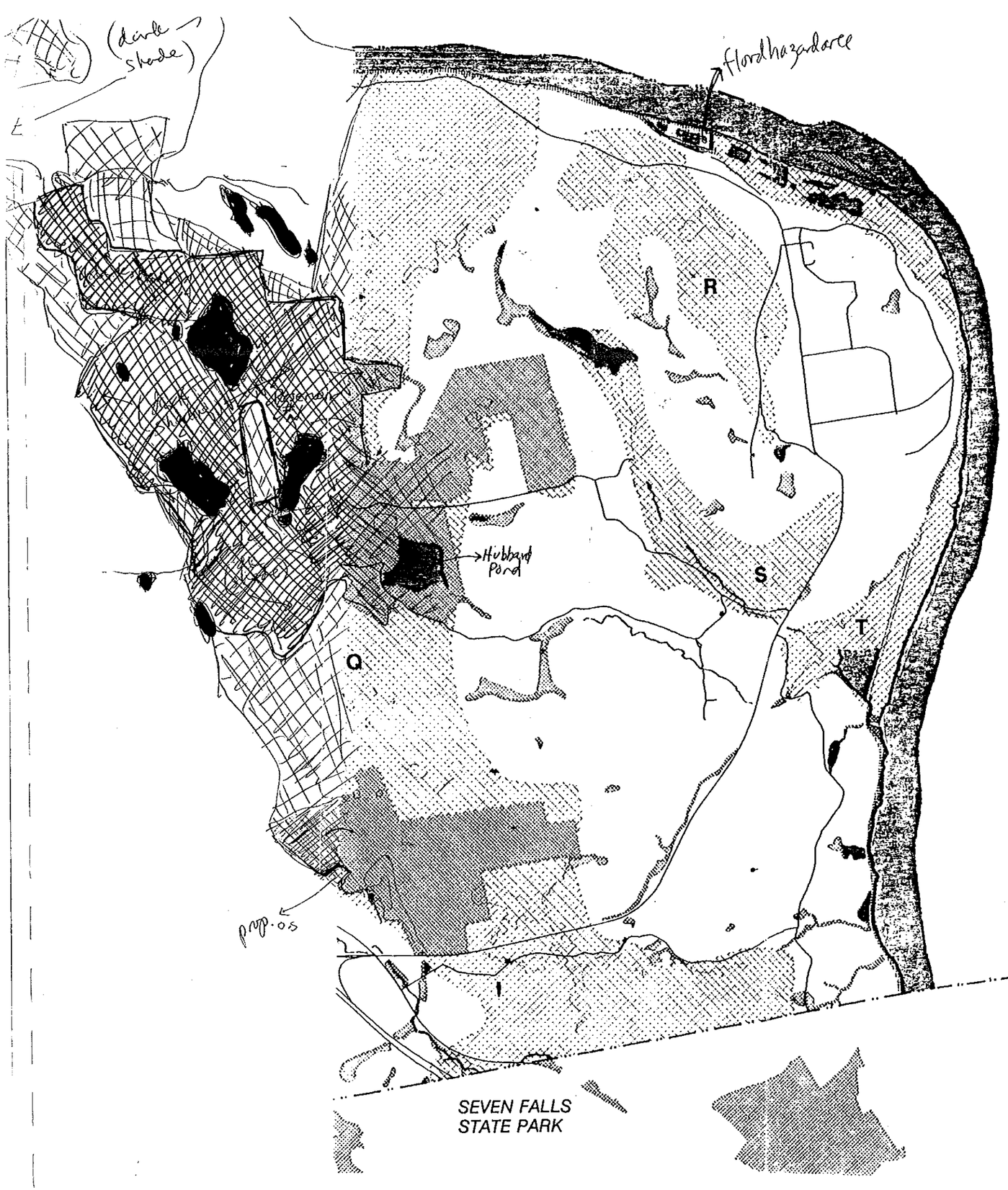
0 5000 10000 15000 Feet

BFJ Buckhurst Fish & Jacquemart, Inc.

Appendix KK

(accompanys report)

Appendix LL



Plan of Conservation & Development
Middletown, Connecticut
"Existing + Proposed Open Space"

(1 inch = 2000')

- Committed Open Space
- Proposed Open Space
- Waterbodies

(no date – but it is the 1993 Plan)

R = "Laurel" Wetland System
Q = Spiderweed – CT. Valley Hospital Corridor
S = Hubbard Brook
T = CT River Wetlands

Prepared by Midstate RPA

Traced + Copied by Erin O'Hare, 7/29/04 from Poster Board Office Map

1/1

Appendix LL

Appendix MM

LEGEND

ZONES

- R-1
- R-45
- R-30
- R-15
- RPZ RESIDENTIAL PRE-ZONING
- R-60
- B-1 CENTRAL BUSINESS
- B-2 GENERAL BUSINESS
- I-1 SERVICE INDUSTRIAL
- I-2 RESTRICTED INDUSTRIAL
- I-3 SPECIAL INDUSTRIAL
- IOP INTERSTATE OFFICE PARK
- ID INSTITUTIONAL DEVELOPMENT
- IT INTERSTATE TRADE
- PL PARK LAND
- TD TRANSITIONAL DEVELOPMENT
- MX MIXED USE
- M MULTIPLE FAMILY
- RF RIVERFRONT RECREATION
- IRA INDUSTRIAL REDEVELOPMENT AREA
- I-4 LIMITED INDUSTRIAL
- IM INTERSTATE MIXED
- PSUZ PUBLIC SER. UTILITY

OTHER INFORMATION

- PRD PLANNED RESIDENTIAL DEVELOPMENT
- FLOOD PLAIN LINE
- 23×9 FLOOD PLAIN ELEVATION
- ENVIRONMENTALLY SENSITIVE AREAS (FOR DETAILS AREAS SEE WI
- GROUNDWATER AQUIFERS
- WATER AREAS
- WATERSHED AREAS

******* REGIONAL PLANNING AGENCY

Watershed ~~boundaries~~ boundaries by Connecticut Valley Hospital

ZONING MAP

OF

MIDDLETOWN, CONNECTICUT

PLANNING AND ZONING COMMISSION

ATION AREA:
OF THE WATTABASSETT
PROCEEDS SOUTH ALONG
ER TO WHERE IT JOINS THE
IT GOES SOUTH ALONG THE
IE IT CEASES THE OUTER
WHICH CROSSES THE CONN.
OOS SOUTH 200' FROM THE
ERLY AND SOUTHERLY
AN TOWN LINE.

THIS IS TO CERTIFY THAT THIS IS THE OFFICIAL ZONING MAP REFERRED TO IN SECTION 11.02 OF THE ZONING CODE OF THE CITY OF MIDDLETOWN, CONNECTICUT

ADOPTED ON 6 JAN. 88

EFFECTIVE DATE 15 JAN. 88

CHAIRMAN

ATTESTED DIRECTOR

CONNECTICUT
CONN. RIVER AQUIFER
RIVER

1/1
Appendix
MM

Appendix NN

THE FUTURE OF OPEN SPACE ACQUISITIONS AND DEVELOPABLE LAND IN MIDDLETOWN

January 2004

Appendix VII

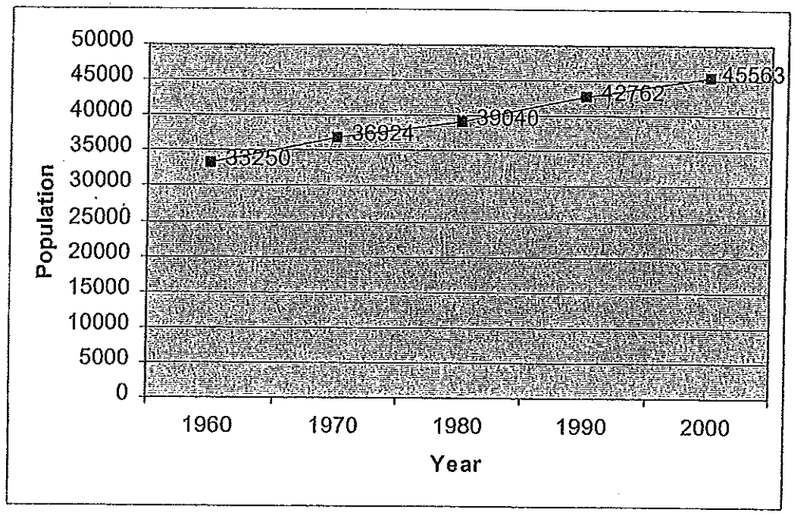
Introduction:

Middletown faces the problem of rapid population growth, which will be the main focus of this paper. The goal of this report is to discuss the costs resulting from residential growth, to study the undeveloped land of the City and the distribution of present open space, to establish a goal of how much land should be acquired as open space. The report will conclude what the total population will be at total residential build out if the assumptions prove valid and the recommendations contained in this report are implemented.

Long-term population growth is a major concern for the City of Middletown. The population has the potential to increase to 65,000 residents at total residential build out, in which there will be complete suburban sprawl in the City.

Chart 1 below shows population change over forty years in Middletown. Between 1960 and 2000, a 37 percent increase in population occurred. Population has increased steadily since 1960 and has never, since 1790, seen a decline.

Chart 1
Population Trends 1960-2000



The City averages an increase of well over a hundred houses per year. From 1990 to 2000, the City grew by 7 percent. According to a Plan of Development Survey of Citizens, residents feel that a population of 65,000 is too high and that it is very important to maintain the City's rural character. ~~According to a~~ Survey ~~of Residents in 1999~~, 60 percent of residents who responded to the survey also want to increase the amount of

open space in the City. Half of the respondents interested in the City acquiring more open space are willing to pay higher taxes as a result.

Pressure on Community Services:

With a rapidly growing population, Middletown faces many issues. There are a number of issues of concern such as school system capacity, adequate infrastructure, and ample funds needed to provide essential City services. The demand for new roads, water/sewer lines, garbage pickup, park and recreational service, and police and fire services will increase as the population continues to rise. Obviously, there will be additional revenue from these homes, but we believe the costs far exceed the revenues received.

Police and Fire Services:

Presently, the Middletown Police Force is comprised of approximately 100 full-time officers and 16 full-time civilians. According to the Department of Public Safety, Division of Connecticut State Police, the average ratio for municipalities similar to the size of Middletown is 2.18 employees per 1,000 population. Middletown presently has a ratio of 2.81 employees per 1,000 population. If Middletown's population grows to 65,000, an additional 26 officers will need to be hired to meet the state average and to protect such a large population. This would cause a greater burden on City funds. At an average salary of $45,000 per officer, not including benefits, an additional $1,117,000 of City funds would be needed to pay the additional 26 police officers. A similar increase in the number of employees in the Fire Department would be needed with a population of 65,000.

Infrastructure:

The cost for such services as snowplowing, paving, pothole repairs, and other road maintenance services will increase as the population increases. This is true especially if the City reaches its maximum potential where such services will be in a much greater demand. The City, once again this year, approved a road bond of $8.1 million dollars. This results in an annual debt service of $. The City issues road bonds every couple of years. Clearly, Middletown will increase its expenses each year as the population, the miles of roads, the number of new streetlights, and the number of houses continues to increase, as it has done so in the past.

As an example, ~~this year~~, Middletown ~~has~~ spent approximately $740,000 on electricity for streetlights. According to CL& P, City funds to be spent on streetlights are expected to increase to around $820,000 by 2004. We conclude later in this paper that there will be an additional 40 miles of new road ~~that would~~ needed to support total residential build out. Knowing that the present cost for streetlights in Middletown is approximately $820,200 per year and that there are 190 miles of road, we concluded that it costs the City $9,315 per year of electricity for streetlights for one mile of road. Therefore at total residential build out, it would cost the City an additional $172,600 to pay for electricity ~~for~~ ~~of~~ the additional 40 miles of roads ~~needed to sustain such a large population size~~.

Park and Recreation:

Other issues of concern include the Park and Recreation ~~Department of~~ Middletown. Currently, there is considerable demand for recreational facilities. Athletic fields are already under heavy use causing maintenance issues and sports scheduling conflicts. Despite the thirty-four separate recreational sites in Middletown, there remains a substantial demand for usage. This will only worsen as the population grows unless issues are improved now. The City spends $2,222,427 on Park and Recreation and recently spent $950,000 to acquire 38 acres for sports fields. There is a $49 per capita expenditure for park and recreation services. A population of 65,000 translates to an additional $947,942 in spending in order to maintain services to support that population.

School System:

Using the current student/population ratio, if the City reaches its total capacity of 65,000 residents, the school system will be 1,000 students over capacity. Detailed below is a 1999 table displaying student enrollment at all public schools located in Middletown. By viewing Table 1, it is evident that many of the public schools will reach or will most likely ~~go above~~ their capacity ~~within the~~ future. Middletown High School is already at 90 percent capacity. The new Middletown High School will cost taxpayers in excess of $75 million and stands as an indicator of the high costs of population growth. The annual debt service for the new high school will be $ for the next ten years.

Table 1
City Public School Capacities:

School	Grades	Built/Modified	Enrollment 1998-1999	Total Capacity	Enrollment/ Capacity
Bielefield Elementary School	K-5	1954/1966	339	391	87%
Farm Hill Elementary School*	PK – 5	1990	329	516	64%
Lawrence Elementary School	K-5	1972	324	441	74%
MacDonough Elementary School*	K-5	1925/1988	253	344	74%
Moody Elementary School	K-5	1964/1993	336	488	69%
Snow Elementary School*	PK-5	1997	340	525	65%
Spencer Elementary School	K-5	1951/1989	344	438	79%
Wesley Elementary School*	K-5	1972	341	469	73%
Keigwin Annex*	6	1973	355	500	71%
Woodrow Wilson Middle School*	7-8	1973/1975	750	900	83%
Middletown High School*	9-12	1956/1962/1975/ 1976/1989/1994	992	1,100	90%
Total	PK-12		4,814	6,112	79%

* Designates schools that have limited potential of expansion. Many of the public schools have been renovated since their creation. Total enrollment does not include placed out students.

As displayed above, residential development brings with it high costs. Residential development is often a liability because it requires the City to spend a greater amount in

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services than it does in generating taxes. Previous studies by the Southern New England Forest Consortium and the Department of Planning, Conservation, and Development have shown that the costs of residential development exceed the tax revenues received.

Middletown's Developable Land:

Geographically at 42 square miles, Middletown is very large. Middletown cannot afford to grow in a suburban style. Middletown cannot afford to offer city services, streetlights, snowplowing, public roads, leaf pickup, police patrols, and other required service to 42 square miles. Therefore, it is essential that Middletown carefully analyze its undeveloped land to better understand what remains and its susceptibility to change. This will allow the city to more effectively plan for its future population.

Assuming total build out of all of the currently vacant and dry land, the maximum potential population for Middletown is 65,000. Understanding total build out may never occur, and in order to predict and maintain a reasonable future population size, we have looked at a variety of aspects of Middletown's land and calculated, what we believe to be the actual amount of developable acres in Middletown.

Knowing the number of vacant acres and the number of developable acres in our residential zones from Middletown's draft Plan of Conservation and Development, we wanted to determine the actual number of developable acres. The draft Plan assumed all vacant land would be developed at the highest density allowed in the zoning. With this assumption, the plan concluded that the population at total residential build out would exceed 65,000.

Understanding that some parcels will have soils which can not support a septic system, and that the city has been purchasing open space at a rate of over 150 acres per year for the past 12 years, and the plain fact that some people will want a larger lot than what is allowed, we will now endeavor to get a better handle on the future population.

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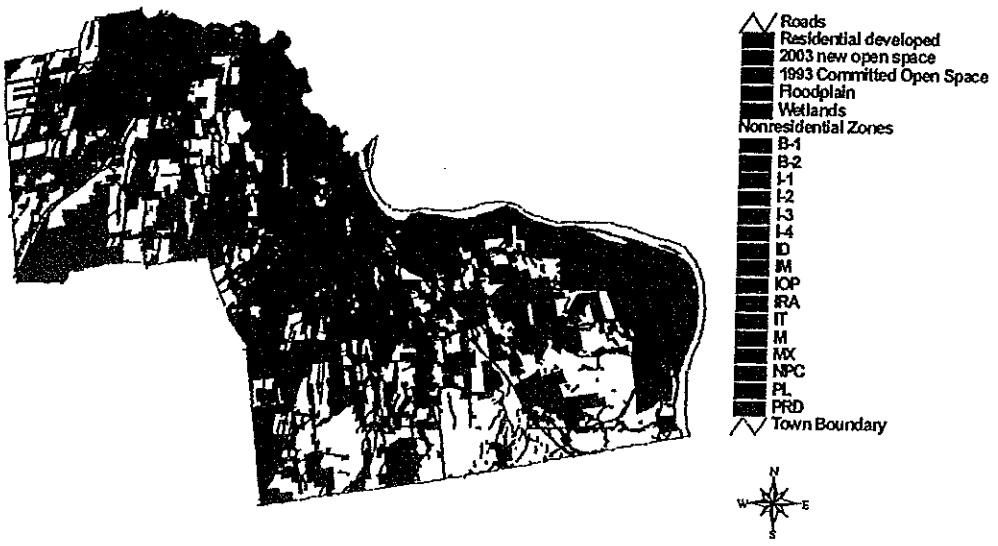
Figure 1

Areas Currently Available for Residential Development



In figure 1 those areas not shaded are

~~Figure 1 shows those~~ areas that are currently available for residential development. If these areas are developed to the maximum allowable density, the population will be approximately 65,000. This study will now use a process of elimination to analyze the ~~developable~~ lands further to determine ~~their~~ its true holding capacity based on soil types.

to

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Figure 2

Areas with a shallow Depth to Water Table

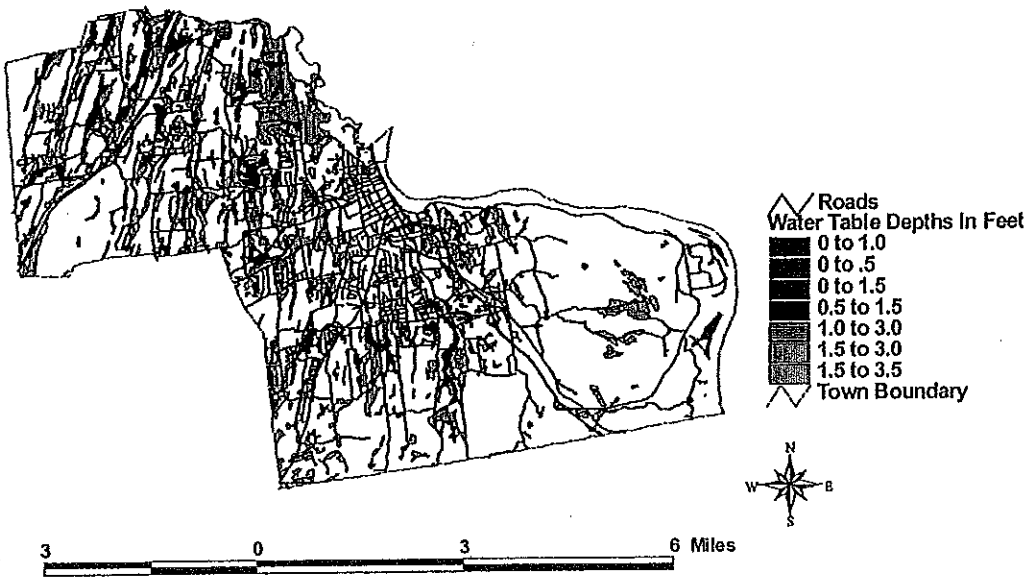
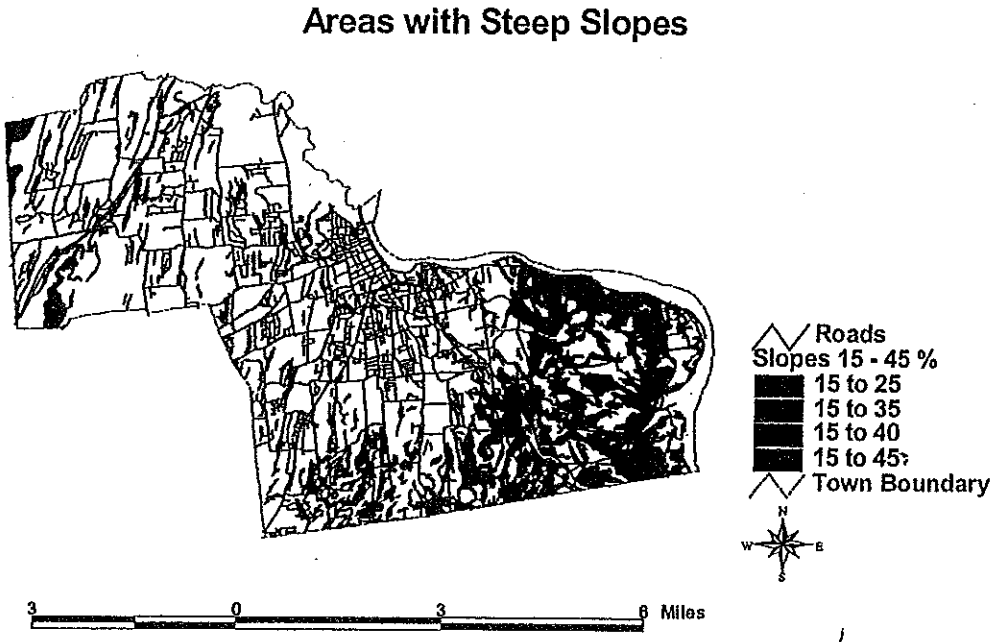


Figure 2 shows where water table depths range from shallow depths of 0 to 3.5 feet. These lands are for the most part considered unsuitable for development. This figure shows that land with shallow water table depths are scattered throughout the City. Much of this land is found in wetlands and floodplain areas. Because of this fact, much of these areas were already deleted in the developable land calculation.

The study then found areas of land in Middletown with slopes of fifteen to forty-five percent, as indicated below in Figure 3.

Figure 3

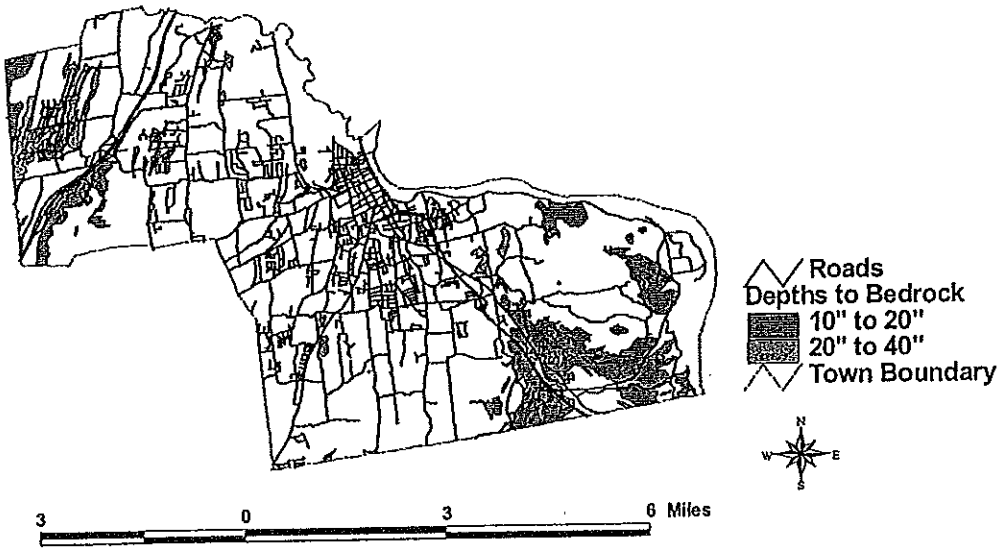


It is evident that large areas of steep slopes predominantly characterize the southeast section of Middletown. This is also true in the rural areas of Middletown in the southern most section that borders Durham and Haddam and also in the northeast section bordering Meriden and Berlin. These areas are outside of the sewer service area and pose significant challenges to septic design and overall development. Not surprisingly, these areas remain undeveloped.

This study then determined the soil's depth to bedrock. Figure 4, below, shows the distribution of land characterized by shallow depth to bedrock.

Figure 4

Areas with shallow Depths to Bedrock



Large parcels of land having shallow depths to bedrock can be found in the southeastern section of the City along Route 9 and the Connecticut River. Areas having shallow depths to bedrock can also be found in the northeastern section by Middletown's border with Meriden and Berlin.

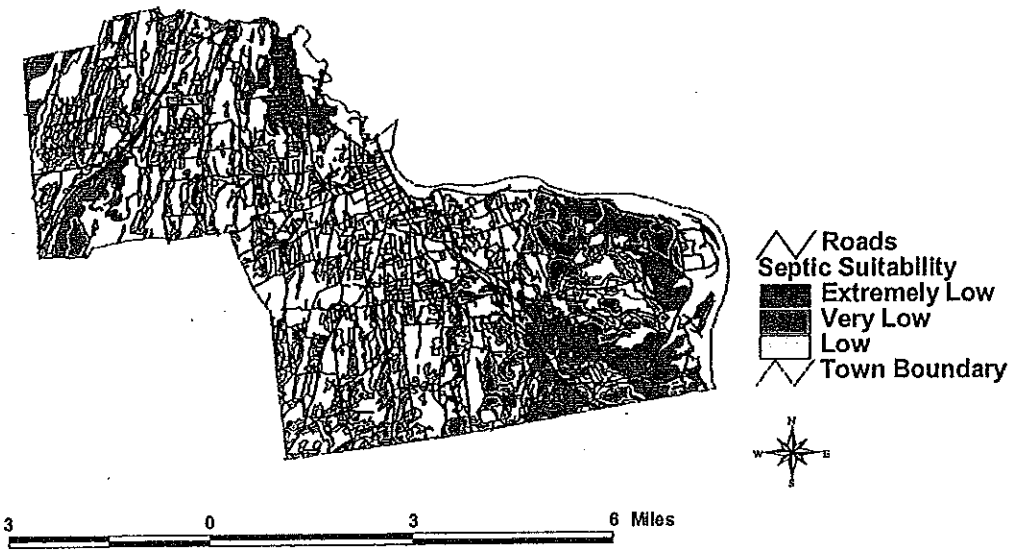
By knowing the areas that are characterized by shallow depths to bedrock, we were able to determine which land is developable for septic. Soil types were classified into three categories:

1 - Good for septic: has medium, high, or very high potential for septic development based on a depth to bedrock in excess of 40".
2 - Bad for septic: has extremely low, very low, or low potential for septic development based on a depth to bedrock between 20" and 40".
3 - Unsuitable for septic: soils having a depth to bedrock of less than 20 inches.

Figure 5 reveals the locations ~~of areas~~ that are unsuitable for residential development ~~based on~~ the Middlesex County Soil Survey.

Figure 5

Areas with low potential for Septic Suitability



Most areas with extremely low potential for septic development are located along the Connecticut River and other waterways that run through the City. Other areas of extremely low potential are found in large areas in the southeast section of the City bordering Route 9 as well as the northeastern section near Interstate 91 and the border with Berlin. Areas of very low and low potential are smaller in size and can be found throughout most sections of the City. Once again, by viewing the figures above, it is evident that much of Middletown's land is unsuitable for septic, characterized by steep slopes, ~~has~~ a shallow depth to bedrock, and ~~has~~ a ~~shallow depth to the~~ water table. Therefore, a portion of the land that is outside of the sewer service area and that has been designated as fully developable land in the past actually can be considered unsuitable for development.

Table 3 reveals where developable land is located by zone.

Table 3
Developable Land by Zone in Middletown

Developable Land by Zone in Middletown:	
R15 Zone: 1,070 acres	R45 Zone: 620 acres
R30 Zone: 1,265 acres	R60 Zone: 2,805 acres
Total Developable Acres: 6,375 acres	

Once all developable land outside of the sewer service area was identified, it was divided into areas of good for septic, bad for septic, and unsuitable for septic.

Understanding that each lot is not going to be the absolute minimum allowable, we made the following assumptions due to depth to bedrock and septic suitability:

- For all land classified as bad for septic, we concluded that each lot would consist of approximately 120,000 sq. ft. in size in the R30, R45, and R60 zones.
- For all land classified as good for septic, we concluded that each lot would be 45,000 sq. ft. in the R30 zone, 45,000 sq. ft. in the R45 zone, and 60,000 sq. ft. in the R60 zone.
- For all land classified as unsuitable for septic, we concluded that no lots would be suitable for development.
- For the developable lots in the R1/ RPZ/ R15 zone with City sewer, half were divided into lots consisting of 15,000 sq. ft. each and the other half were divided into lots of 30,000 sq. ft. each. In making this assumption, we looked at recent subdivisions and determined this to be a reasonable assumption.

The only land that is actually developable outside of the sewer service system is the land characterized as having the ability to support on site well and septic. Because of the nature of the soils in Middletown, densities will be much lower than that allowed in zoning. Therefore, a population of 65,000 is not necessarily the actual maximum population size.

The study then divided the land areas by the respective lot areas to identify the number of units the land could yield and then multiplied each unit in all residential zones by the current average household size of 2.3 in order to determine the potential future population size. ~~The only exception to the average household size is in the Multi Family Residential zone, which has an average of 1.5 persons per household.~~

We concluded that an increase of approximately 11,153 additional residents and 2,165 units could occur in Middletown based upon the actual number of net developable acres.

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This is a much lower population increase than the estimated increase concluded in Middletown's Plan of Conservation and Development.

The study also estimated the number of additional miles of road needed to serve the R15, R30, R45, and R60 zones if net undeveloped land becomes developed. This was calculated by multiplying the number of lots per zone by the appropriate frontage in feet. All lots in the R15 zone have a frontage of 100 feet, 150 feet in the R30 zone, and 200 feet in both the R45 and R60 zones. The study then divided this number in half because roads have frontage on both sides. We then divided 5,280 feet to convert from feet to miles. We concluded that an additional 40 miles of road would have to be constructed in the future.

In conclusion, the study estimates Middletown's actual number of net developable acres to be approximately 6,010 acres, this land could support 2,165 additional units, and a future population increase of approximately 11,153 additional residents, shown in Table 4 below. These calculations and assumptions reveal a population of 56,716 at total residential build out.

Attach 15

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Table 4
Net Developable Acres

Residential Zones	Vacant Acres	Net Developable Acres	Potential Development Good for Septic*	Potential Development Bad for Septic**	Potential Development Unsuitable for Septic***	Additional Population[3]	Additional Miles of Road Needed
Multi Family	65	50				450^^	
R1/ RPZ/ R15	1,530	1,070				4,823.1	19.86 mi.
R30	1,730	1,365 (100 open space) 1,265	1,084 acres 948 units	107 acres 35 units	74 acres	2,290	13.54 mi.
R45[4]	1,120	860 (Wesleyan 140) acres 100 open space 620	427 acres 373 units	51 acres 16 units	142 acres	906	7.18 mi.
R60	3,900	3,030 (Wilcox 75 acres) (Vernlund 50 acres) 100 open space 2,805	1,295 acres 844 units	946 acres 308 units	564.3 acres	2,684	.109 mi.
TOTAL Open Space Acquisition	8,345	6,375 acres (300 acres) 6,010 acres w/out o.s.	2,165 units	359 units	780.3 acres	11,153.1	40.689 miles

Benefits of Open Space:

Open space acquisitions provide many benefits to a community besides limiting development. Through open space acquisition, Middletown's rural character can be preserved. Open space protects, promotes, and enhances the City's natural diversity and allows residents to enjoy passive recreational pursuits. The development of athletic fields and hiking or biking trails are such examples. Through conservation, soils; wetlands; farmlands; and wildlife and their habitats are protected. By preserving agricultural lands, suburban sprawl can be prevented in the rural areas of Middletown. Therefore, it is evident that open space provides many benefits to the community.

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Existing Open Space in the City of Middletown:

Open space areas in Middletown are owned by the City, state, or by private conservation organizations. Most are located towards the outskirts of the City where the sewer and water service system does not reach. Tables 5, 6, and 7 divide the open space areas of Middletown into publicly owned, privately owned, and park areas.

Table 5
Present Open Space Publicly Owned

Publicly Owned Open Space Inventory	
Location	**Acres**
Alsop Property	15.2
Dobson Circle	3.30
Guida Conservation Area*	100.0
Hubbard Tract*	22.0
McCutcheon Park	104.6
McCutcheon Wildlife Sanctuary	29.74
Middletown Nature Garden*	17.90
Newfield Meadows	144.0
Pillarella Field	2.10
Plum Open Space*	12.5
Ravine Park	8.80
Smith Park	80.0
Town Farms Park	6.0
Tynan Memorial Park*	30.16
Westfield Falls	2.0
Westfield Hills Open Space*	15
Wilcox Footit Road*	89.5
Russo Prop.*	23.0
Columbus Point*	.75
Peterson Oil*	3.0
Rizza*	65
Vernlund*	50
Dainials*	75
Swartzkopf*	75
Wesleyan*	145
Long Hill Estate*	106
Long Hill Road*	38
Country Club Road*	40
State Land	1,233.018
Recently Acquired State Land*	295.982
TOTAL ACRES: 2,831.05	

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Table 6
Present Open Space Privately Owned

Privately Owned Open Space Inventory

Location	Acres
South Farms Open Space*	25
Miles Homes Open Space*	2
Longworth Open Space*	25
Harris Open Space*	54
Jackson Open Space*	6
Marino Open Space*	1.5
Behling Open Space*	12
Sunrise Farms Open Space*	56
Lamentation Mt. Middlesex LT*	14
Lamentation Mt. Berlin LT*	28
Highland Pond*	33
Golf Course Open Space*	45
Wesleyan Hills Barns*	6
Armeta Dedication*	30
Hunt Club*	50
Old Farms Open Space*	35
Deer Run Open Space*	11
Gullitti Subdiv., Kelsey Estates*	41.686
Fawn Estates*	43.2
Nature Conservancy	244

TOTAL ACRES: 762

Table 7
Present Open Space Used As Parks

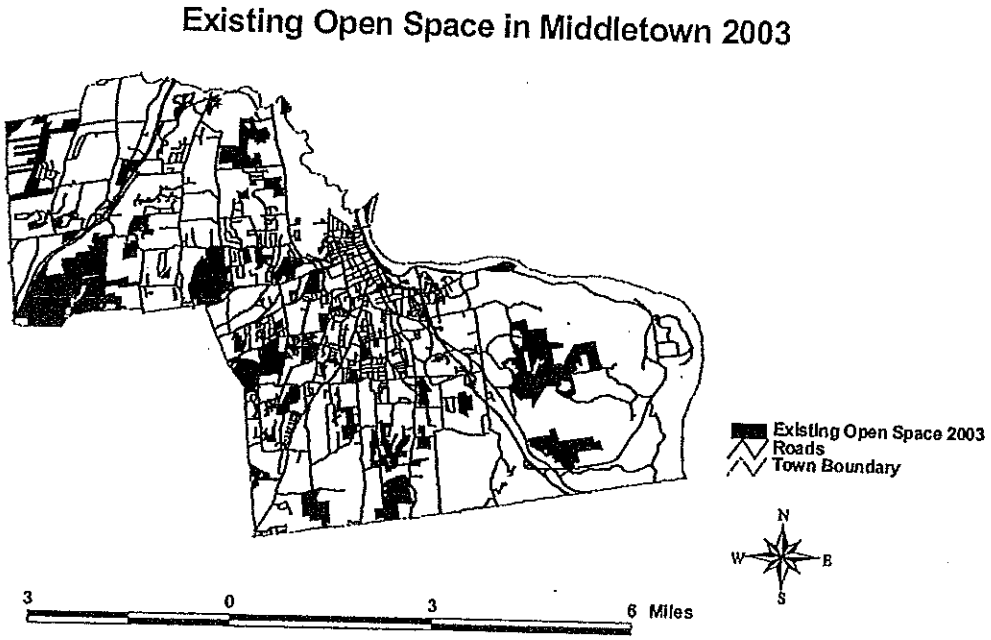
Inventory for Open Space Used As Parks	
Location	**Acres**
Bartholomew Playground	.40
Butternut Hollow	5.90
Columbus Point	.75
Cucia Park	4.40
DeKoven/Green St. Playground	2.25
Donovan Park	2.25
Harbor Park	2.60
Hubbard Park	3.50
Marzelak Park	.5
McCarthy Park	2.4
Palmer Field	6.7
Pat Kidney Field	9.00
Roosevelt Park	2.0
Spear Park	2.20
Swales Pond	1.5
Union Park at South Green	1.3
Veteran's Memorial Park	41.0
Veteran's Memorial Green	3.30
Zoars Pond	24.7
TOTAL ACRES:	**116.65**

*** Designates open space land that has been acquired since 1991- over 1,614.678 acres**

- Total Acres of Open Space in Middletown: 3,710.086
- Percent of present open space in Middletown: 13.64%

Figure 6 is a map that shows the existing open spaces in Middletown as of 2003.

Figure 6



Connecticut's Goal of Open Space Acquisition:

Pursuant to Public Act 99-235, Connecticut's goal is to acquire 21 percent of the state's land area for open space. In order to achieve 21 percent open space, the state sets annual targets. The state's goal in the years 2000 and 2001 was to acquire 4,000 acres each year while increasing to 5,000 acres in 2002.

The state also provides a tax incentive to farmers, according to Public Act 490. This Act sets aside greater acres of open space on farmlands in Connecticut. During the past two years, grant money of $500,000 has been given to farmers allowing them to continue to farm. Other programs have been created to allow farmers to cultivate land, which prevents residential subdivision upon these lands.

In order to assist municipal funding of open space acquisitions, a fund called the Charter Oak Open Space Trust Account was created by the state. The Open Space and Watershed Land Acquisition Grant Program, now unsubsidized and dormant, provided assistance to municipalities in the past, including Middletown. The funding provided $1,160,108 to Middletown for the acquisition of eight parcels, comprising 335 acres. These acquisitions were recommended in the Open Space Plan.

City Open Space Plan of 1993:

In 1989, City residents approved of a referendum to create a $5 million Open Space Trust Fund. This was the start of a very aggressive open space acquisition program. From 1990 to 2003, over 1,935 acres have been acquired. Then again, in 2003 City residents approved an additional $3 million to replenish the fund. In 1993, the Open Space Plan was adopted. The ideas behind this plan were to create a corridor system of interconnected open space connecting areas of existing open space, forests, brooks, steep slopes, and wetlands. The plan also concentrates on avoiding the acquisition of individual properties characterized by unique features. The total number of acres proposed in the Open Space Plan is 9,441 acres, 35 percent of the City.

Knowing the average household size in Middletown is 2.3; an estimation of the number of additional residents who would have resided in Middletown was calculated as if there never was a single acquisition of open space since 1991. This study was done to show the effect open space acquisitions have on residential development in Middletown. Using the same methodology, it was determined that since 1991, the City could have had an additional 359 lots in the R 15 zone, 42 lots in the R 30 zone, 231 lots in the R 45 zone, and 279 lots in the R 60 zone without the aggressive open space acquisition program. Altogether, the City has potentially avoided 911 lots and 2,093 new residents since 1991. Applying the current student/population ratio, this would have represented 572 public school children.

Middletown's Future Goal of 20 Percent Open Space:

The Hartford Courant printed an article on the increase in developed land for all Connecticut towns from 1985 till 2002. In this article, it was revealed that in 1985, 21.8 percent of Middletown's land was developed. The article stated that the figure increased to 25.2 percent developed land in 2002. This means that Middletown experienced a 15.3 percent increase in developed land from 1985 to 2002. This means 924 acres were developed between 1985 and 2003. In 1990, Middletown began to establish itself as one of the leaders in open space planning in Connecticut. Middletown has acquired 1,935 acres of open space land between 1990 and present time. Despite the development that occurred since 1985, it is evident that Middletown carefully plans its future development. The increase in permanently preserved open space (1,935 acres) was more than twice the increase in developed land! (924 acres)

Clearly acquiring an average of one hundred and fifty acres of open space per year has served the City well and should continue. The City should establish a goal of 20 percent of the City to be preserved as open space. In order to achieve 20 percent of its land as open space, the City needs to acquire an additional 1,730 acres of open space. If the City were to acquire 150 acres of land per year, the City would achieve this goal in 2014. Obviously, if the City acquires one hundred and fifty acres per year, this will have a further impact on the future population. Applying some methodology previously used,

the study concludes that further open space acquisition could reduce the future population by as much as 3,000 residents.

If the City reaches this goal of 20 percent open space, an increase can be expected of approximately 8,124 residents instead of the 11,153 stated earlier in this paper. If the city reaches its goal of 20 percent, the population would grow to approximately 53,687 at total residential build out. In the 1999 Plan of Conservation and Development Survey, City residents concluded that Middletown's growth should be limited to approximately 50,000 people.

Recommendations:

Encourage smart growth by streamlining the permitting process, to facilitate growth within the sewer service area:
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.

Establish a goal of 20% of the city's land area to be preserved as permanent open space:
To reach this goal the city should acquire, on average, one hundred and fifty acres of land per year for the next eleven years.
Establish an open space account and fund the account annually when preparing operating budget. Bonding for open space acquisition is much more expensive. To supplement this open space account; establish a fee in lieu of open space regulation in the city's subdivision regulations. Avoid any zone charges which would increase density.

Conduct Workshops:
Work with large landowners to encourage gifts of land as open space, lend attention to tax benefits.

Establish a purchase of development rights program:
Accomplish the same open space preservation objectives at a lower cost.

Encourage Commercial and Industrial Development:
Downtown revitalization will expand the grand list and will motivate the Common Council to budget money for open space acquisition

Planning and Zoning Commission Involvement:
Encourage P&Z commission to allow more efficient patterns of development within the sewer service area, specifically open space subdivisions which group the lots on half of the land and preserve the other half as open space.

Educate:
Inform city officials and the Planning and Zoning Commission about the need to reduce infrastructure costs and impervious surfaces. Promote narrower roads with open drainage systems in the more rural areas. Carefully consider the need for streetlights and sidewalks in large lot rural subdivisions. Permanently preserve city watershed lands and encourage Northeast Utilities to conserve land.

Conclusion:

Many associate population growth with a successful community. However, many areas in the country today that are characterized by rapid population growth lack income growth. Some cities, such as Bakersfield, CA, are ranked in the top 100 cities in rapid population growth, but rank low for income growth. On the other hand, the city of Cincinnati, OH has been called a leader in income growth, but lacks population growth. In the U.S., there are only a few cities that are characterized by both population growth and income growth. Middletown is fortunate to have experienced a 7 percent growth in population as well as an increase in income growth. The education and wealth of the people, not always the size of the population, allow a community to become prosperous. By acquiring more open space land, the environmentally conscious and educated will be attracted to the City. It is also important that we understand the demographics of the population. When we know about residents' ages, incomes, etc., we can form our community's policy on such things as taxes, zoning, and infrastructure investments to fit the community. Therefore, it is essential that we maintain the size of Middletown's population and provide residents with a community that will allow them to thrive.

The quality of life of Middletown's residents is entirely important to the prosperity of the City. Many of Middletown's residents have expressed their interest in greater open space and further preservation of rural areas and have been proponents to the acquisition of open space in the past. Open space areas increase the quality of life in a community by providing numerous benefits. Areas of recreation, scenic views, protection and conservation and numerous other opportunities can be created by open space. Middletown's Park and Recreation services, cultural and historical museums and galleries, and its numerous acres of open space are valuable assets that provide the City's residents with a higher quality life. By maintaining a reasonable population size through future open space acquisitions, Middletown's residents will receive the best services possible and will be able to enjoy a good quality life. By carefully planning the future of open space acquisitions and attaining our goal of purchasing 20 percent, we can adequately promote and plan for orderly residential development into specific areas of Middletown in the future.

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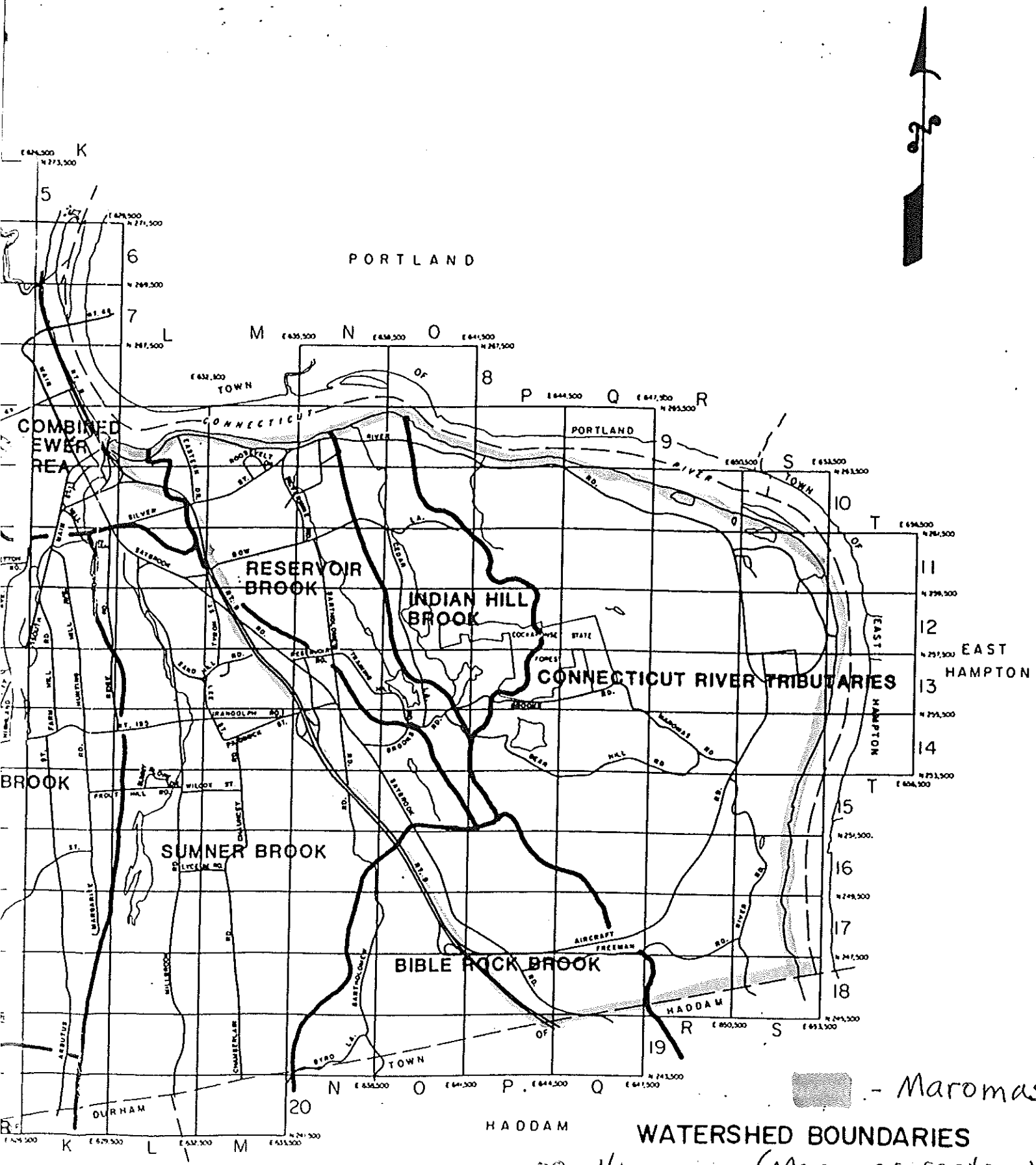
Appendix OO

City of Middletown Planning Department

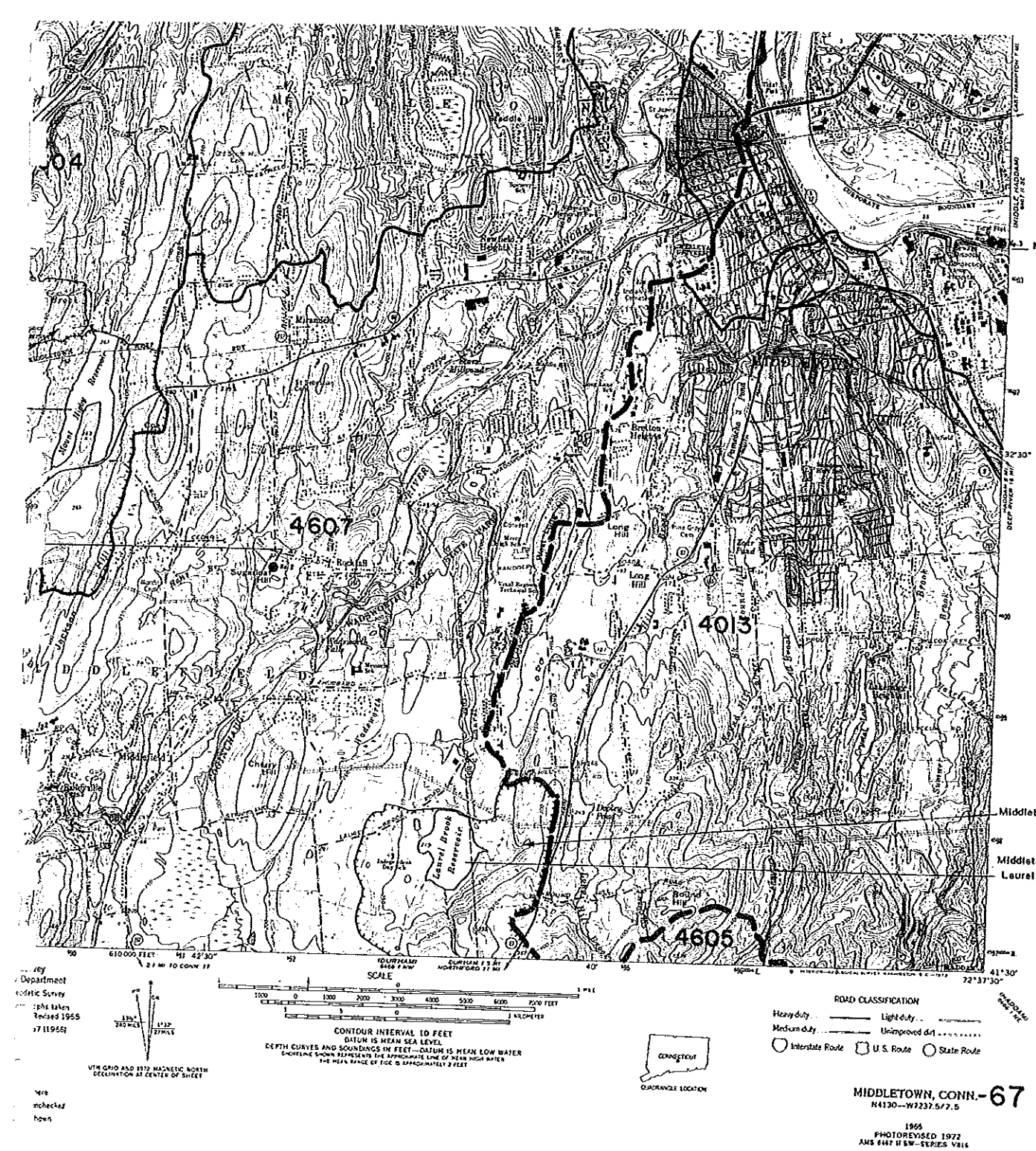


- Maromas

WATERSHED BOUNDARIES

00 1/1

(Maromas sector of Middletown - shown)



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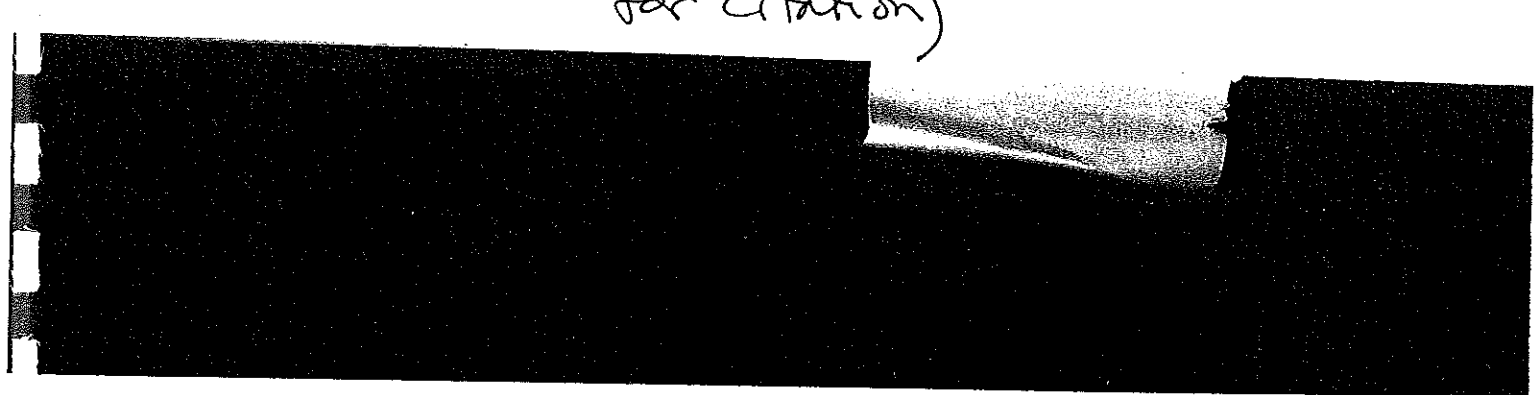
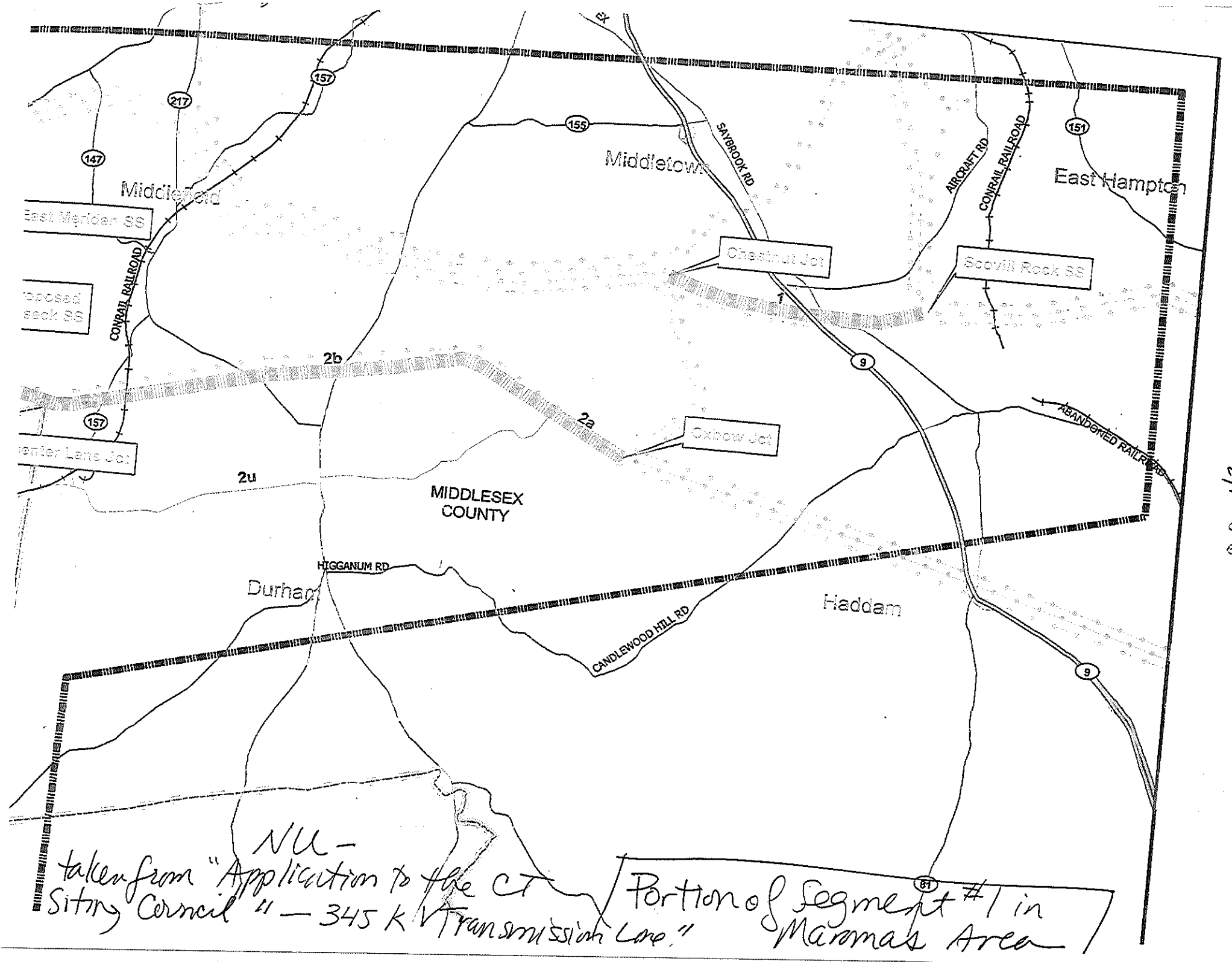


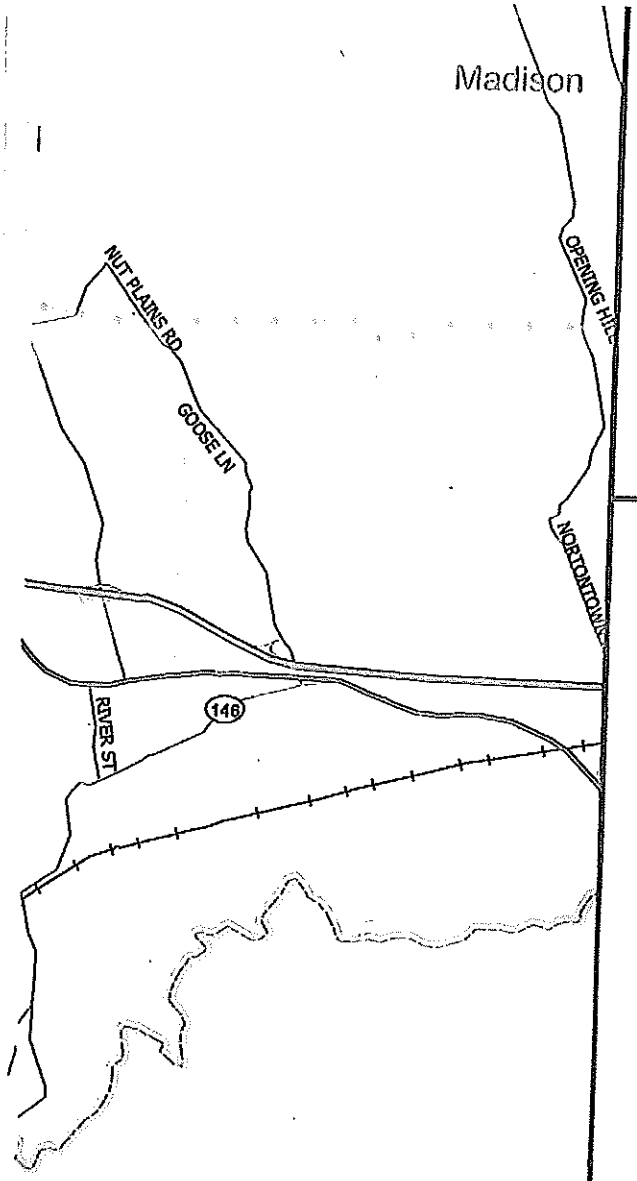
Appendix QQ



QQ 1/2

NU-
taken from "Application to the CT Siting Council" — 345 kV Transmission Line."

Portion of Segment #1 in Mammas Area



NORTH

6,000 0 6,000 Feet

LEGEND

- Limited Access Highway
- Highway
- Road
- Railroad
- Pipeline
- UI 115-kV Transmission Lines
- UI 115-kV Underground Transmission Lines
- CL&P 115-kV Transmission Lines
- CL&P Underground 115-kV Transmission Lines
- CL&P 345-kV Transmission Lines
- Undersea Transmission Lines

Proposed Route

- Overhead
- Underground

Alternative Routes

- Overhead
- Underground/Undersea

18 Links

Durham Towns

- Study Area
- County Boundary

Definitions

SS = Substation or Switching Station
TS = Transition Station
Jct = Junction

Northeast Utilities System

The United Illuminating Compa.

ROUTE ANALYSIS MAP
MIDDLETOWN - NORWALK
345-kV TRANSMISSION LINE
Dwg. No. RA-001 Sheet 1 of 2

QQ 2/2

July 29, 2003 Version 1

Appendix SS

OPEN SPACE & WATERSHED LAND ACQUISITION GRANT PROGRAM
OPEN SPACE LAND ACQUISITION

The following is a point score ranking system. This objective method of scoring has been developed in order to assign a relative numeric score to specific elements. These elements have been identified as being of primary concern as they relate to the acquisition of open space as defined in C.G.S. 7-131c-k.

ADMINISTRATIVE

APPLICANT: (Circle one) MUNICIPALITY | NONPROFIT (Land Trust - IRS) | WATER COMPANY CGS 25-32a

DISQUALIFYING CHARACTERISTICS - OTHER ADMINISTRATIVE CHARACTERISTICS

1. *Commercial purposes (except for forest management or agricultural use) (PROJECT IS REJECTED)*
2. *Site is land to be used for recreational purposes requiring intensive development. (PROJECT IS REJECTED)*
3. *Site is land associated with environmental contamination (PROJECT IS REJECTED)*
4. *Land is to be acquired by eminent domain (PROJECT IS REJECTED)*
5. *Land was acquired by applicant prior to the grant application deadline (PROJECT IS REJECTED)*

Municipality

5 pts Distressed and or Targeted (5 pts each) Office of Policy & Mgmt. C.G.S. 32-9p
5 pts Development Designation\Waiver Dept. Of Econ & Comm. Dev. C.G.S. 8-336f(d)(6) Sub-total .

Cooperation (multi-town or regional in scope.)

5 pts proposed acquisition submitted by multiple sponsors
5 pts proposed acquisition to occur in multiple towns Sub-total .

Funding Availability

5 pts required municipal, corporate, or organization approvals obtained
5 pts funding held in escrow for project
10 pts municipal, corporate or organizational acquisition fund established with funds Sub-total .

Title work, surveys and appraisals available.
(Supporting documentation but not required - credit awarded for providing)

2 pts. survey available (in accordance with applicable regulations) (A2)
2 pts. cost estimate
5 pts. appraisal document complete (in accordance with DEP standards) Sub-total .

Property acquisition status (acquisition within a six to twelve months)
(Supporting documentation but not required - credit awarded for providing)

2 pts. property is currently on the market (willing seller, clearly identified)
5 pts land available for donation
5 pts land available as a bargain sale
5 pts. evidence of landowner and applicant agreement on sale
(Purchase & Sales Agreement, DPUC Approval) Sub-total .

Property is free from any lien, claim, encumbrance or easement that would prevent the property from being used for open space purposes.

5 pts title certificate and deed reveal no lien, claim, encumbrance or easement that would prevent the property from being used for open space purposes Sub-total .

Maintenance and operations of the project area.

5 pts demonstrated past management history of similar areas
5 pts stewardship funding available Sub-total .

TOTAL SCORE OF ADMINISTRATIVE .

RESOURCE EVALUATION

RECREATIONAL VALUE

5 pts provides beach or shoreline frontage suitable for swimming, boating, fishing
3 pts provides adequate access and parking
5 pts provides passive recreation opportunities
5 pts contributes to existing passive or active recreation on adjacent land
5 pts contains landmark, scenic, historic, cultural or archaeological significance Sub-total .

OPEN SPACE VALUE

4 pts property adjoins existing open space land on one side.
6 pts property is abutting existing open space land on two sides
8 pts property is abutting existing open space land on three sides
10 pts property is surrounded entirely by existing open space land Sub-total .

NATURAL RESOURCE VALUE

Site is valuable for forestry because (Division of Forestry) Score (0-25 pts.)

1. has potential for high value timber growth
2. contains uncommon forest species
3. easily manageable for forest products
4. provides opportunities for educational or research activities Sub-total .

Site is valuable for fisheries management because (Division of Fisheries) Score (0-25 pts)

1. contributes to protection of important watershed, stream bank or coastline
2. provides quality fish habitat
3. provides unique fish habitat
4. provides access to fishing opportunities
5. contributes to anadramous fish restoration
6. provides opportunity for educational or research activities Sub-total .

Site is valuable for conservation of wildlife because (Division of Wildlife) Score (0-25 pts)
(Harvested Species = Hunted Species : Non-Harvested Species = Non-Hunted Species)

1. provides habitat for management of harvested or non-harvested species
2. contains population of resident harvested or non-harvested species
3. contains population of migratory harvested or non-harvested species
4. exhibits a diversity of habitat throughout the site
5. provides suitable habitat for recovery or reintroduction of species
6. provides opportunity for educational or research activities Sub-total .

Site is valuable for conservation of natural resources because (Natural Resources Center) Score (0-25 pts)

1. provides protection for an important habitat type (i.e. Traprock ridge, sand plain, or calcareous wetland)
2. exhibits ecological diversity (common or unique)
3. provides protection for state or federal listed (circle classification)
   endangered threatened species of special concern
4. represents an intact example of a natural community or uncommon community
5. represents an important roosting area for birds of concern or breeding area for species of concern
6. exhibits a high concentration of species of concern
7. with contiguous land would provide substantial protection of a significant habitat type
8. provides opportunity for educational or research activities
9. provides protection for a habitat type that is rare, infrequent, or otherwise critical Sub-total .

Site is a **prime natural feature** of the state□s landscape (Natural Resources Center) Score (5 pts each)

Riverine Mountain Coastal Inland wetland Tidal wetland Sub-total .

Site is valuable for preserving local agricultural heritage (Department of Agriculture) Score (0-25 pts)

1. site is currently an food-producing farm
2. because there are other active farms or protected land exist in region
3. site is threatened by conversion to non-compatible uses
4. site meets criteria established for the DOA farmland preservation program
5. site has high percentage of farmland soils
6. site is one of last viable farms in town Sub-total .

Site will provide linkages between open spaces. (Division of Land Acq. and Greenways Asst. Center) Score (0-25 pts)

1. provides a corridor connecting existing open space
2. connects community to park or other open space resource
3. provides a migration route for wildlife
4. provides or connects to a self sufficient recreational facility (i.e. bikeway or hiking trail)
5. provides protection for linear natural feature (i.e. ridge line or stream belt) Sub-total .

Site is valuable for preserving and/or enhancing watershed\water quality. (Dept. of Health) Score (0-25 pts.)

1. proposal protects land within the watershed which is already >25% but < 50% protected
2. proposal protects land within the watershed which is already >50% but < 75% protected
3. protects wellheads, aquifers, or drawdown areas.
4. proposal has the potential for Class I or Class II watershed land as defined by G.S. because of the proportion\relationship between the land characteristic which would classify the land as Class I or Class II, Size of the parcel (acres), surrounding land currently protected (%), existence of active wellheads, aquifers or drawdown areas. Sub-total .

TOTAL SCORE OF RESOURCE EVALUATION .

LOCAL ISSUES\DEVELOPMENT\PLANS

Local and regional open space or plans of conservation and development.

5 pts proposal has the approval of the local Board of Selectman or Common Council (Resolution)
5 pts proposal is consistent with local plan of conservation and development
5 pts proposal is consistent with local or regional open space plan Sub-total .

Site Is vulnerable to development.

5 pts surrounding land acquired for development or is already developed
5 pts site proposed for development
5 pts local zoning and/or existing land features would encourage development Sub-total .

Proposal approved by local \regional agencies or commission.

5 pts local planning agency endorsement provided
5 pts local conservation agency endorsement provided
5 pts regional planning agency endorsement\consistency with regional plan Sub-total .

Acquisition is compatible with the State Plan of Conservation and Development. (5 pts) Sub-total .

Acquisition is in proximity to other protected open space.

8 pts abutting or within .5 mile of existing open space land
5 pts within or less than 1 mile of existing open space land
3 pts within 3 miles to 1 mile of existing open space land Sub-total .

Percent of open space within the sponsors territorial limits.

12 pts % of open space between 0% and 5%
9 pts % of open space between 5% and 7%
6 pts % of open space between 7% and 9%
3 pts 5 of open space above 9% Sub-total .

The intensity factor applied to the open space within the Sponsor territorial limits (O.S. / capata)

15 pts .00 - .403
12 pts .404 - .803
9 pts .804 - 1.20
6 pts 1.21 - 1.60
3 pts 1.61 - 2.00 Sub-total .

Local & State Goals, relative.

a. size

5 pts Is this acquisition an important value to the state' s goal of Open Space.
5 pts Does the parcel represents a relatively large open space addition.
5 pts Is the parcel strategically important to the Sponsor. Sub-total .

TOTAL SCORE OF LOCAL ISSUES\DEVELOPMENT\PLANS .

Appendix TT

APPENDIX ITEM

TRUST FOR PUBLIC LANDS CONNECTICUT RIVER PROGRAM

(Note from Alicia Betty to Erin O'Hare)

We did do some mapping and it appears that Middletown has some important habitat along the river and in a few other small areas in town. Our habitat information came from the state natural diversity database. We've also highlighted Middletown as a place with important historic sites. From our data collecting there are more than 15 historic sites there. I can't access a map with enough detail to tell me whether the Maromas area has important habitat, but since the map appears to show an area along the entire Connecticut River, I'm sure that part of it is included. (The person who is running the program is away at the moment.)

As for our Connecticut River Program and what we can do to help. Basically, we plan to provide land protection tools, such as *Greenprinting* which is a program that we created that identifies lands to protect, developes an acquisition strategy for those lands, identifies sources of conservation funding then acquires lands for permanent protection. We also hope to unify communities up and down the river to leverage resources and increase awareness. And lastly, we will protect land and critical open spaces in the watershed to both natural and human communities.

Generally, our organization helps towns, land trusts, the state and federal government to preserve land for people. We do this by becoming a principle in the land transaction, negotiating the contract, putting down deposits then performing all of the real estate due diligence necessary for the transaction. At the same time, we work with the public entity to help raise funds for the purchase, most of the time by running a bond referendum campaign for the town or working with a land trust to do a private fundraising campaign. We also help our partners by pursuing grant opportunities and try to leverage their funds as much as possible.
I hope this helps to clarify what we may be able to do to help. Please let me know if you have any questions.

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The Trust for Public Land
101 Whitney Avenue, 2nd Floor
New Haven, CT 06510
Ph: (203)-777-7367
Fax: (203)-777-7488
alicia.betty@tpl.org

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Appendix UU

APPENDIX ITEM

SCENIC RESOURCE PROTECTION METHODOLOGIES

Erin O'Hare, *AICP*

Many different approaches and mechanisms which have been used as scenic preservation methods in Connecticut and nationwide are listed below by natural scenic resource of concern. Additional strategies promoted by Scenic America, a national, non-profit organization dedicated to protect natural beauty and distinctive community character, follow.

Scenic Resource Protection Methodologies by Resource Category

Scenic Areas and Views:

- village districting[1]
- design guidelines and regulations[2]
- townwide landscape design guidelines
- site design with landform provisions
- scenic view protection zones, i.e., viewshed regulations
- scenic easements [3]
- scenic vantage point protection
- protection/enhancement of public access to vantage points

Mature Trees:

- tree density trades
- preservation of mature trees in public right-of-ways
- incentives for private owners to maintain mature trees
- mature tree preservation in development standards
- America the Beautiful grant for biggest native tree inventory

Roads:

- revised road widths
- road improvement policies that preserve sense of place (context sensitive design)
- linkage between municipal capital improvement program and scenic protection program
- provisions for new scenic road construction (narrower paved width, slower design speeds, less clearing and grading in the right-

[1] Middletown , along with Madison, CT, and Brooklyn, CT, have adopted Village Districts under the provisions of CGS Sec. 8-2 j for the preservation of their town centers. Village districting can be used as well to preserve landscape character in more rural settings.

[2] The Town of Simsbury, CT has received wide acclaim for its "Guidelines for Community Design" document and design review program.

[3] In terms of assessment, scenic easements may enhance the value of the property and the adjoining properties because the easement allows the vista to remain never to be willfully infringed upon.

of-way, retaining or building stone walls, providing landscaped center islands in cul-de-sacs)
- undergrounding of utilities provision
- conservation easements on private land along scenic roads
- streetscape buffer requirement

Stone walls:

- preservation requirements in subdivision and zoning regulations[4]
- preservation policy for municipal public works department for stone walls within town rights of way.

Ridgetops:

- delineation of ridgeline/hillside protection areas
- site design restrictions in zoning and subdivision regulations
- setback restrictions to development

Agricultural scenes:

- farmland preservation initiatives
- open space acquisition of farmland
- scenic and conservation easements

Recommendations of Scenic America

Scenic America, a national, non-profit organization dedicated to protect natural beauty and distinctive community character, advocates the initiatives below. (Visit www.scenic.org for a thorough treatment of these topics – defining the issues, methods of protection, and funding sources.)

1. Conduct a Visual Assessment of Your Community
2. Promote Good Design in Business and Historic Districts
3. Encourage Attractive On-Premise Signs
4. Fight Billboard Blight
5. Protect Community Trees
6. Locate Wireless Telecommunications Towers Sensitively
7. Identify and Protect Scenic Vistas and Viewsheds
8. Ensure a Strong State Scenic Byways Program
9. Advocate for Context-Sensitive Highway Design

[4] See Town of North Stonington, CT and Town of Granby, CT zoning and subdivision regulations for stonewall preservation provisions. Stonewalls are depicted on USGS maps of Middletown and on aerial photos.

APPENDIX ITEM

CHAPTER 477c
UPPER CONNECTICUT RIVER CONSERVATION ZONE

Table of Contents

Sec. 25-102aa. Legislative finding. It is found that the upper Connecticut River and the towns abutting the river possess unique scenic, hydrologic, ecological, agricultural, recreational and historical value contributing to public enjoyment, inspiration and well being. Furthermore, it is found that it is in the public interest that the provisions of this chapter be adopted to preserve such values for the enjoyment of present and future generations of Connecticut citizens and to accomplish the following: (1) The protection and improvement of the water quality of the Connecticut River; (2) the preservation of the flood storage capacity of the Connecticut River; (3) the preservation of unique natural historic and scenic areas and the natural topography of riverfront land; (4) the preservation and encouragement of agricultural land uses which conserve the area's soil and water resources and maintain and increase the area's long-term food producing capacity; (5) the promotion of the area's recreational potential consistent with the ability of the land and the river to support such use; (6) the influencing of the visual impact of riverfront development and (7) the encouragement of preservation and rehabilitation of the Connecticut River greenbelt.
(P.A. 82-296, S. 1, 11.)

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 25-102bb. Definitions. As used in this chapter, "conservation zone" means the zone described in section 25-102cc; "development rights" means the rights of the owner of property to improve such property, including the right to change the terrain, remove natural vegetation and construct buildings thereon; "scenic easement" means a less than fee interest in property acquired for the purpose of maintaining the existing condition of the property or of preserving an unobstructed view.
(P.A. 82-296, S. 2, 11.)

Sec. 25-102cc. Conservation zone designated. All the following area is designated as a conservation zone: Beginning at the point where the town line between Suffield, Connecticut, and Agawam, Massachusetts, intersects the center line of Connecticut Route 159 and proceeding southerly along the center line of Connecticut Route 159 to its intersection with the town line between Suffield and Windsor Locks, thence easterly along said line to its intersection with the center line of the ConRail Railroad Line, thence southerly along said line to its intersection with the center line of Main Street, thence southerly along said line to its intersection with the center line of Interstate Route 91, thence southwesterly along said line to its northernmost intersection with the town line between Windsor Locks and Windsor, thence easterly along said line to its intersection with the center line of Palisado Avenue, thence southerly, southeasterly and southwesterly along said line to its intersection with the center line of the ConRail Railroad Line, thence southerly along said line to its intersection with the center line of the Hartford Dike, thence southeasterly, southerly, southwesterly and westerly along said line to its intersection with the Wethersfield Cove channel encroachment line, which point is also the intersection of the eastern right-of-way of the Wilbur Cross Parkway with the town line between Hartford and Wethersfield, thence southwesterly, southeasterly, easterly, northerly and easterly along said Wethersfield Cove channel encroachment line to its intersection with the Connecticut River channel encroachment line, thence southerly along said line to its intersection with iron pin four in Kelley Avenue, thence easterly along a line to its intersection with the western right-of-way line of Interstate 91, thence southerly along said line to its intersection with the Connecticut River channel encroachment line which point is iron pin nine of the Connecticut River channel encroachment line, thence southerly, southwesterly, southeasterly and southwesterly along said line to its intersection with the center line of the ConRail Railroad Line, thence southeasterly and southwesterly along said line to its intersection with the hundred year flood boundary north of Dividend Brook, thence southwesterly along said boundary to its intersection with the town line between Rocky Hill and Cromwell, thence easterly along said line to its intersection with the hundred year flood boundary south of Dividend Brook, thence northeasterly along said boundary to its intersection with the center line of the ConRail Railroad Line, thence southeasterly along said line to its intersection with the town line between Rocky Hill and Cromwell, thence westerly along said line a distance of three hundred feet to the point where the town line intersects the one hundred fifty foot contour interval, thence southerly, and at varying elevations, along the ridgeline as viewed from four feet above mean low water from the center line of the Connecticut River to its intersection with the center line of Nooks Hill Road, thence westerly along said line to its intersection with the center line of the ConRail Railroad Line, thence southerly along said line to its intersection with the center line of Connecticut Route 99, thence southerly along said line to its intersection with a line parallel to and two thousand two hundred feet south of South Street, thence westerly along said line a distance of seven hundred feet to its intersection with the hundred year flood boundary, thence northerly along said boundary to its intersection with the southerly property line of the Connecticut Route 9 right-of-way, thence northwesterly

shall be filed for public inspection in the office of the town or city clerk of the municipality holding said hearing at least ten days before such hearing.
(d) A municipality which has withdrawn from membership on the assembly may again become a member by a vote taken in accordance with the provisions of subsection (c) of this section.
(P.A. 82-296, S. 4, 11.)

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 25-102ee. Staff. Funds. Termination. The assembly may employ expert and such other assistants as it deems necessary and may accept funds from any source. The assembly shall work in cooperation with state and municipal agencies. The assembly shall report to the General Assembly, on or before February fifteenth, annually, on its activities and finances of the preceding year. The existence of the assembly shall terminate at such time as all of its member municipalities have withdrawn or it is abolished by the General Assembly.
(P.A. 82-296, S. 5, 11.)
History: P.A. 82-296, S. 5, effective October 1, 1983.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 25-102ff. Review of land use applications. (a) Commencing on the one hundred twenty-first day after October 1, 1983, whenever a municipality receives an application for any of the land uses listed in this section on land that is located within the conservation zone, such municipality shall forward a copy of the application to the assembly for information, review, comments and recommendations. The application shall be forwarded not later than thirty-five days before a public hearing, if a hearing is required or scheduled, or before a decision is made on the application if no hearing is required or scheduled. Application for the following land uses shall be forwarded to the assembly: (1) Any use of land for commercial, business, retail or office use, or any combination thereof, which requires a land area of more than seven and one-half contiguous acres or a change of zone of more than seven and one-half contiguous acres, or a building floor area of more than seventy-five thousand square feet; (2) any industrial or manufacturing use which requires a land area of more than ten contiguous acres or a change of zone of more than ten contiguous acres, or the employment of more than two hundred fifty employees; (3) any residential use which requires more than twenty- five contiguous acres or a change of zone of more than twenty-five contiguous acres, or includes more than fifty dwelling units; (4) any municipal or institutional use which requires a land area of more than fifteen contiguous acres; (5) any project which is submitted by a public service company for municipal approval which includes a proposed land use of ten acres or more; (6) any use having one hundred or more parking spaces; (7) any hazardous waste facility as defined in section 22a-115; (8) any solid waste facility, as defined in section 22a-207; (9) any oil refinery or bulk fuel oil storage facility; (10) any bridge, dam or hydropower facility; (11) any electric transmission line of a design capacity of sixty-nine kilovolts or more, or (12) any soil and earth material removal operation involving fifteen thousand cubic yards of material or five contiguous acres of

land area.
(b) The assembly upon receiving a copy of the application, may prepare written comments concerning the regional impact of the proposed land use and prior to any public hearing submit such comments to the municipality forwarding such copy. If no public hearing is required, comments, if any, shall be forwarded to such municipality prior to the scheduled date of municipal action on the proposal.
(c) The municipality shall read any comments submitted by the assembly into the record of any public hearing or public meeting held on the application. Comments provided by the assembly shall be advisory. The lack of comment by the assembly shall not be considered in a negative or affirmative manner.
(d) A two-thirds vote of all the members of the local agency having authority to act on the application shall be required to approve an application which has received a negative comment from the assembly.
(P.A. 82-296, S. 6, 11; P.A. 88-364, S. 81, 123.)
History: P.A. 82-296, S. 6, effective October 1, 1983; P.A. 88-364 made a technical change in Subsec. (a).

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 25-102gg. Local zoning within the conservation zone. Revision of standards. (a) The planning commission and the zoning commission or the combined planning and zoning commission of each assembly municipality shall, within one year after October 1, 1983, revise the zoning regulations and subdivision regulations relating to land within the conservation zone of such municipality, to meet the minimum standards established pursuant to special act 79-77, as amended by special act 81-1, and thereafter shall promptly make further revisions to meet any revised standards adopted by the assembly pursuant to subsection (b) of this section.
(b) The assembly shall, from time to time, review, and may, after public hearing of which at least fifteen days notice has been given in a newspaper or newspapers having a circulation in the conservation zone, revise the standards established pursuant to special act 79-77, as amended by special act 81-1. Such revisions shall be consistent with the state plan for conservation and development adopted pursuant to part I of chapter 297 and the purposes of this chapter. A copy of the proposed revisions shall be furnished at least fifteen days prior thereto to the conservation commission, zoning commission, the planning commission or combined planning and zoning commission of the municipalities to be affected thereby and shall be filed at least ten days prior to the hearing in the office of the town or city clerk of the municipalities affected thereby.
(P.A. 82-296, S. 7, 11.)
History: P.A. 82-296, S. 7, effective October 1, 1983.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 25-102hh. Revision of zone boundary. The assembly may revise the zone boundary established by section 25-102bb by a two-thirds vote of all of the members of the assembly and after public hearing of which at least fifteen days notice has been given in a newspaper or newspapers having a circulation in the conservation zone. Any revision

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shall be approved by the members of the assembly representing the town or towns impacted by such revision. A copy of the proposed revision to be presented at such public hearing shall be furnished at least fifteen days prior thereto to the conservation commission, zoning commission, planning commission or combined planning and zoning commission of the assembly municipalities and shall be filed at least ten days prior thereto in the office of the town or city clerk of the municipalities.
(P.A. 82-296, S. 8, 11.)
History: P.A. 82-296, S. 8, effective October 1, 1983.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 25-102ii. Comment on acquisition of land and water interests by the state. In making fee and less than fee acquisitions in lands and waters, including scenic easements and development rights, applicable to the preservation of the Connecticut River as provided in section 25-102aa within the area encompassed by the conservation zone defined in section 25-102cc, the Commissioner of Environmental Protection shall invite comments from the assembly. The commissioner shall consider the recommendations of the assembly and any modifications to such recommendations.
(P.A. 82-296, S. 9, 11.)
History: P.A. 82-296, S. 9, effective October 1, 1983.

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Appendix WW

4.18 Watershed/Viewshed Regulated Area (Effective 4/1/98)

4.18.1 Intent: The Watershed/Viewshed Regulated Area is adopted in order to:

a. Promote the goals and objectives of the Woodbury Plan of Conservation and Development.

b. Encourage the most appropriate use of land.

c. Preserve the natural environment of distinctive ridgeline areas as a visual and historic asset for the benefit of the community.

d. Protect the groundwater recharging function and capacity of the ridges by minimizing the potential for pollution and preserving open areas for groundwater recharge.

e. Prevent the creation of any safety or health hazard including, but not limited to, soil erosion, excessive drainage runoff, and degradation of water quality.

f. Minimize the adverse effect of development upon both the visual and functional role of the natural landscape to preserve Woodbury's quality of life.

4.18.2 Applicability: For each subdivision application that includes subdivision improvements or proposed house sites at or above elevation 400 feet, the Commission shall evaluate the development of that portion of the subdivision land located at or above this elevation and determine whether the applicant will be required to provide watershed and viewshed information contained in this Section. The factors in determining the applicability of this Section shall be the effect that the proposed development has on the following: soil erosion by wind or water, loss of vegetative cover, destabilization of slopes equal to or greater than 20% disruption of significant topographical features, and preservation of significant scenic features, vistas, ridgelines, wildlife corridors, or significant geological features. The Commission encourages all applicants to attend a preliminary meeting, prior to filing an application, to determine the applicability of this Section.

If the Commission determines that this Section is applicable, then it shall have the authority to modify the plan in accordance with the provisions in this Section. The applicant shall submit the following material or shall perform the following analysis as deemed necessary by the Commission:

a. A map at a scale of one inch equals 100 feet showing the entire subdivision and delineating that portion of the subdivision site above 400 feet in elevation including all streambelt corridors and watershed divides.

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b. An aerial photograph of the subdivision at a scale of one inch equals 100 feet with the lot layout, house, driveway, septic, roadways, other improvements, and the limits of clearing for the aforementioned items delineated, along with an overlay indicating all areas on the site containing slopes of twenty (20) percent or greater. Aerial photographs shall be either the latest Connecticut Department of Environmental Protection or Town Assessor's aerial or a more recent independent aerial.

c. In consultation with the Commission, a list of visual impact observation points for the proposed subdivision from regional highways, arterial, or collector streets so designated in the Woodbury Plan of Development, public parks, other areas accessible to the general public. These points shall be located through field delineation and mapping. The applicant shall place aerial markers, balloons, flags or other on-site markers at points corresponding to the highest point of each proposed structure and/or the limits of site clearing for any proposed subdivision improvements as deemed necessary by the Commission to allow evaluation of the visual impacts as seen from various observation points. For any subdivision improvement that requires demarcation, no more than four (4) visual impact observation points shall be required. The applicant shall provide photographs taken from visual impact observation points of the subdivision with aerial markers in place or other on-site markers. In addition to photographs, the Commission may request other graphic illustration or other data sufficient to portray the visual impact of the proposed activity.

d. A view vector plan showing location and dimensions of a sight cone(s) for each lot and other subdivision improvements where removal of vegetation is proposed. Site cone areas shall be designed to minimize visibility of the subdivision improvements from the visual impact observation points and reduce the potential for erosion. This plan shall specify the existing and proposed basal rate of tree stock within the limits of disturbance shown for the lot or subdivision improvement in question. Removal of tree stock within the view sector cone shall be designed to minimize the visual impact and promote the long-term stabilization of the development.

e. A site plan showing all significant vegetation such as large stands of trees, individual trees twelve (12") inches in caliper or more, critical habitat areas, and other sensitive areas such as historic or archeological features contained in the Woodbury Cultural Resource/Open Space Plan or in the records of the Connecticut Historic Commission, Office of the State Archaeologist, State Historic Preservation Officer, or other similar documentation located on the site plan and in cross-section at a scale of one inch equals 100 feet in horizontal and one inch equals 125 feet in the vertical to allow analysis of each lot. For each lot identified by the Commission, the applicant shall provide the existing basal rate of tree stock, as calculated by a State of

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Connecticut Registered Forester located between each proposed or existing structures or other proposed subdivision improvements and the visual impact observation points.

f. The Grading Plan required by Section 3.5 of these Regulations shall depict the areas of twenty (20) percent slope or greater located on the property.

4.18.3 Mitigation Plan: A mitigation plan shall be submitted as a part of the application that specifies mechanisms to minimize the visual and environmental impacts that will result through the development of the subdivision as it relates to existing and proposed structures and other subdivision improvements, public views, streambelt and watershed protection including but not limited to the following:

a. Restrictions on the building materials incorporated into any structures (including but not limited to roofing material), the portion of the structure facing the observation points, building orientation, and the like;

b. Restriction on height and mass of structures and/or accessory structures whenever the height is expected to exceed the height of the existing or proposed vegetation screening the structures and improvements from the visual impact observation points at a point in time five years from the time of installation of any new plant material;

c. Restrictions on the location of any structures and/or accessory structures;

d. Restrictions on the clearing of vegetation on each individual lot and along stream and wetland corridors;

e. Conservation easement areas along stream corridors and other significant site features such as topographic, archeological, geologic and/or historic and the like; and

f. To limit disturbance of slopes equal to twenty (20%) percent or greater located on the property.

4.18.4 Criteria for Decision: In addition to the criteria of these Regulations, the Commission shall evaluate every application under this Section in accordance with the following criteria:

a. Visual Impact: The visual impact of the proposed activities as viewed from regional highways, arterial, or collector streets so designated in the Woodbury Plan of Conservation and Development, public parks, or other areas accessible to the general public. Such impact may include, but not be limited to: unnatural gaps, cuts, projections, or other artificial alterations of existing natural tree lines, ridgelines, prominent topographic features, or rock

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formations; the use of materials which, by their size and/or orientation disrupt the natural or historic character of the ridgeline; the size, height, shape, and location of buildings.

b. Environmental/Habitat Impact: The impact of the proposed activities on any Federal or State rare or endangered species inhabiting, breeding, foraging, or migrating through or over the area of the proposed activity and on any indigenous wildlife of the site. The Commission shall consider the nature of the area as a wildlife resource (habitat, breeding ground, foraging area, migratory pathway, et cetera) and shall consider the impact of the proposed activity on such resources(s).

c. Ground/Surface Water Impact: The groundwater recharge potential of the area of the proposed activity, the aquifer being recharged, and analysis of the possible impacts of the proposed activity on the groundwater recharge; the impact on surface water flow and quality such as the nutrient load, temperature, and turbidity of any surface waters.

d. Archeological and Historic Impact: The impact of the proposed activity on any known or potential archeological resources and on the role which the site may have played in any recorded chapter of American History as noted in the Woodbury Plan of Conservation and Development, Woodbury Cultural Resource/Open Space Plan (1997) or records of the Connecticut Commission, Office of the State Archaeologist, State Historic Preservation Officer, or similar organization.

4.18.5 Modifications, and Safeguards: If the Commission determines after the evaluation of the information requested that the application is in substantial compliance with this Section, the Commission in its sole discretion in order to preserve the objectives of this Section may modify the plans or safeguards as follows:

a. Site Development

1. Designate the location of structures and/or accessory structures on proposed lots within the site cone area including the distance between principal dwellings on adjoining lots;

2. Reduce the vegetative removal by restricting the size of lawn areas or other land clearing in connection with development, require the use of common driveways, require grading to be approximately parallel to existing contours, require the use of retaining walls or other methods to minimize disturbance of the existing topography and vegetation, and reduce cutting and filing of slopes;

3. Restrict the size and location of septic systems; and

4. Require flagging of all vegetative removal on individual lots for approval

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by the Zoning Enforcement Officer prior to issuance of a Zoning Permit.

b. Viewshed Protection

1. Require that clear cutting occur in a staggered or other pattern which reduces the visual impacts of the setting, and/or further require that clear cutting be staged over a period of time to allow for regrowth of remaining vegetation;

2. Require a specific reforestation and screening plan prepared by a State of Connecticut Registered Professional Landscape Architect for an individual lot and/or subdivision improvement and require a bond prior to issuance of any permits;

3. Require building orientation appropriate to minimize the visual impact of the proposed development;

4. Require the use of particular roof lines or other architectural treatments, lighting, pavement materials, or other site or building features in order to ensure the compatibility of the development with existing or planned historic sites, buildings, or landscapes;

5. Require the retention of certain vegetated areas in order to preserve identified historic sites and historic landscapes or vistas; and

6. For areas on proposed lots where it is determined the removal of vegetation would not be appropriate as set forth in these Regulations in addition to the required Open Space in accordance with Section 4.9 of these Regulations, require conservation easement areas and prohibit removal of tree stock greater than twelve inch (12") caliper.

c. Ground/Surface Water Protection

1. Restrict the method of lawn maintenance of lawn and garden areas, and the use of fertilizers, pesticides, and/or herbicides;

2. Prohibit the use of underground tanks for fuel storage;

3. Require the use of biofilters, detention or retention ponds, and other methods of stormwater management which protect the surface water and groundwater;

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4. Regulate or prohibit the use of floor drains or conduct activities within the development, which may impact groundwater resources;

5. Restrict the removal of the vegetation and canopy along streambelts and wetland corridors.

In addition to the above listed items, the Commission may incorporate into an approval any data, plans, or drawings, including architect's plans or drawings, restrictions, and the mitigation plan submitted by the applicant in support of the application.

4.18.6 Recording Requirements: Any subdivision that requires the implementation of this Section shall have a note on the Record Subdivision Map within the boundaries of any affected lot or a note on the plan for any subdivision improvement not so located on the lot stating "All clearing and construction activities must comply with Section 4.18 Ridgeline and Viewshed Protection." In addition, the owner shall record a notice on the Land Records prior to the filing of the Record Subdivision Map indicating the applicability of this section and any conditions required by the Commission.

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Appendix XX

TOWN OF OLD SAYBROOK

ORDINANCE FOR DESIGNATION OF SCENIC TOWN ROADS

Section 1.

Pursuant to the Provisions of Section 7.149a of the Connecticut General Statutes, the Planning Commission may designate town highways or portions of highways as a scenic road under this ordinance.

Section 2.

The Planning Commission shall consider designating as a scenic road only those roads which are free of intensive commercial development and intensive vehicular traffic and meet at least one of the following criteria:

(1) It is unpaved;
(2) It is bordered by mature trees and stone walls;
(3) The traveled portion is no more than 20 feet in width;
(4) It offers scenic views;
(5) It blends naturally into the surrounding terrain; or
(6) It parallels or crosses over brooks, streams, rivers and coves, lakes or ponds.

Section 3.

The consideration of a roadway or portion of a road for designation as a scenic road may be initiated either by the Planning Commission or a majority of owners of property abutting such roadway.

(a) When a highway is to be considered for designation as a scenic road, the Planning Commission shall schedule a public hearing on the proposal. Notice of the public hearing shall be given by publishing notice of the time, place and a brief description of the proposed action in a newspaper having general circulation in the Town of Old Saybrook no fewer than fifteen (15) days prior to the hearing. The Planning Commission shall also notify the Board of Selectmen, the Zoning Commission, and the Conservation Commission for purpose of review and comments at least 42 days prior to the public hearing. Each agency shall study the proposal and shall submit its findings and recommendations to the Planning Commission at least seven (7) days prior to the hearing. If such report of an agency is not submitted at least seven (7) days prior to the hearing, it shall be presumed that such agency has no objection to the proposal. The Planning Commission shall notify by first class mail the owners of lot frontage abutting the highway or portion of the highway of the proposed designation and scheduled public hearing at least fifteen (15) days prior to the hearing.

(b) Following the public hearing, the Planning Commission shall vote on the proposed designation. No highway or portion of a highway may be designated as a scenic road under this section unless the owners of a majority of the lot frontage abutting the highway or portion of the highway agree to the designation by filing a written statement of approval with the Town Clerk of the Town of Old Saybrook. As used in this ordinance, a majority of the lot frontage means more than half of the total linear distance of both sides of the highway combined. The Town Clerk shall notify the Planning Commission when written approval from owners of a majority of lot frontage has been received. Following such notification from the Town Clerk, the designation shall become effective upon such date as the Planning Commission shall establish.

(c) The scenic road designation may be rescinded by the Planning Commission using the same procedure and having the written concurrence of the owners of a majority of the lot frontage abutting the highway.

(d) Any person aggrieved by a designation of a highway or portion of a highway as a scenic road pursuant to this ordinance may appeal such designation in the manner and utilizing the same standards of review provided for appeals from the decisions of planning commissions under Section 8-8 of the Connecticut General Statutes.

Section 4.

(a) No road which has been designated as a scenic road under this ordinance shall be altered or improved, including but not limited to, widening of the right-of-way or of the traveled portion of the highway, paving, changes in grade, straightening, removal of stone walls and removal of mature trees, street lights, traffic signs, guard rails, painting lines, construction of curbs and catch basins and sidewalks, except for good cause as determined by the Planning Commission. The Planning Commission may hold a pubic hearing on the proposed alteration or improvement. The Planning Commission shall state the reasons for such future alterations or improvements in its minutes.

(b) Not withstanding the language of Section 4(a) above, any highway or portion of any highway designated as a scenic road shall be routinely maintained by the town, in good and sufficient repair and passable condition. Routine road maintenance shall include removal of dead or seriously diseased or damaged branches of trees (the Street Tree Committee will be notified of trees to be removed and that Committee will decide what the replacement will be); trimming of tree branches that encroach on the traveled portion of the road below the height needed to allow school buses and emergency vehicles to pass; trimming and removal of brush and removal of boulders or other obstacles that encroach on the traveled portion of the road; necessary trimming for utility lines; trimming of brush to enhance and protect scenic views, stone walls, mature trees and other characteristics of the scenic road; correction of drainage problems and graveling, retreatment and repair of existing highway surfaces. All routine road maintenance shall be performed in a manner to protect and enhance

the scenic characteristics of the road.

(c) Nothing in this Section shall be deemed to prohibit a person owning or occupying land abutting a scenic road from maintaining and repairing the land which abuts the scenic road if the maintenance or repair occurs on land not within the right-of-way, paved or unpaved, of the scenic road.

Section 5.

This ordinance shall become effective fifteen (15) days after publication thereof in a newspaper having circulation in the Town of Old Saybrook.

Adopted at a Special Town Meeting held (insert date of meeting)

Published in the (insert name of newspaper)

Appendix YY

APPENDIX

Preservation Mechanisms and Technical Assistance Programs for Farmland and Managed Forestland

By Erin O'Hare, AICP

The following is a compilation of various tools, and mechanisms, and programs geared toward the preservation/protection/maintenance of agricultural land. At the close, is a statement by the Philip S. Chester, Town Planner in Suffield, CT, detailing the very active on-going farmland preservation program sponsored by the Town.

TOOLS

Preferential Tax Assessment

According to the Town Assessor, approximately 2838.61 acres in Guilford, approximately 9% percent of the Town, is classified as farmland and 5676.57 acres, approximately 19% percent of the Town, is classified as forestland under Public Act 490, a Preferential Tax Assessment program. See NRI **Appendix I-6,** "Public Act 490 Preferential Tax Assessment Program", for a discussion of this program and its usefulness for land preservation.

Purchase of Development Rights

The Purchase of Development Rights is a preservation option the Town of Guilford opted to employ in 2001 when it purchased the development rights to the Wimler farm through the State of Connecticut Department of Agriculture's Agricultural Lands Preservation Program. The farm met certain eligibility criteria requirements to qualify. An agreement was signed with the Town restricting land use practices to the terms specified in the program. Farming and forestry uses and certain pre-existing land use activities will continue. The land can be sold, or leased under certain restrictions, but it can never be subdivided nor are improvements permitted. (There is no public access.)

Agricultural and/or Conservation Zoning

Some Connecticut towns have adopted agricultural and/or conservation zoning to provide for the long term maintenance of land in an undeveloped state by limiting its use to wildlife habitats, the growing of agricultural crops, foresting, and passive recreation. The intent of such zoning is to preserve and protect existing and potential drinking water supplies, preserve and protect plant and animal wildlife and unique natural features, preserve and protect watersheds and stream feeders to promote healthy aquatic life, maintain vistas, protect sensitive archaeological sites, provide recreational opportunities for the general public, and retain agriculture as a beneficial industry.

Lands eligible for designation as a conservation zone may include municipally-owned land, state and federally-owned land, and privately owned forest land, nature preserves, fish or game preserves, undeveloped land, land currently used for any kind of farming, and any land immediately adjacent to any land previously listed or already zoned for conservation.

Agricultural Conservation Easement

An agricultural conservation easement is a deed restriction landowners may place voluntarily on their property for the long-term preservation of productive farmland, viable soils, historical structures, and scenic viewsheds.

Community Land Trust

Community Land Trusts can help preserve agricultural land by purchasing land that comes on the market, holding it in a trust, and establishing long-term (99-year) leases on a portion of the land to continue agricultural production while developing housing on the remaining land to be land-leased to farming families. Currently, the Shoreline Housing Alliance is pursuing this avenue in Guilford, CT, in an effort to make it economic viable for farmers to continue farming. In the spring of 2004, property was acquired for this purpose.

PROGRAMS, AGENCIES, AND ORGANIZATIONS AND OTHER TECHNICAL ASSISTANCE

Working Lands Alliance

Assistance regarding preservation alternatives is available from Working Lands Alliance (WLA), a state-wide agricultural advocacy organization, interested in the full range of options for preserving farmland, from private initiatives to municipally supported efforts and state programs.

Forest Legacy Program

The Forest Legacy Program, administered by the State of Connecticut using USDA funding, purchases development rights on working forest land and provides technical assistance on stewardship and the deeding of conservation rights. Development rights to a forest can be purchased by the Town as well. By statute, any land one acre or greater with wooded vegetation is forestland. The FLP can educate property owners relative to best management practices when harvesting trees to insure water quality is not degraded and the ecosystem is not impacted.

Forest Stewardship Plan

The Connecticut Division of Forestry has Public Service Foresters who are available for no charge to private property owners to identify options, alternatives, and potential forest stewardship goals. The owner of a forest 10-acres or more in size can work with a certified forester to develop a Forest Stewardship Plan. The Plan includes information on plant species occurring in each plant community, their age, health, history, and how they're 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 http://www.canr.uconn.edu/ces/forest/steward.html..

Farm Service Agency

The Farm Service Agency is a branch of the USDA will pay up to 75% of the cost a woodland owner incurs by implementing certain forest management techniques. Reimbursement is provided under the "Stewardship Incentive Program".

Connecticut Farmland Trust

The Connecticut Farmland Trust provides landowners assistance in determining how to best preserve their farmland working with federal, state, and local government agencies, as well as local land trusts, to provide matching funds and technical assistance.

Southern New England Forest Consortium, Inc.

SNEFCI sponsors programs and publications on forestry, estate planning, tax issues, and conservation. One program is "Neighborwoods", a concept that embraces maintaining and enhancing forestland and open space resources as part of development projects. This awards program recognizes the deliberate incorporation of forest and open space conservation into development projects. Examples include conservation of tracts of secure woodlands within a residential development, cores of contiguous open space, working models of forest communities in actual practice, or community plans that have been designed and implemented to foster conservation of farms, forests and open space.

Connecticut Food Policy Council

Created by the Legislature in 1997, the CT Food Policy Council's goals are to recommend and support legislation that promotes food security, educate the public and policy makers about our food system, and promote the preservation of farming and farmland.

Associations

Several associations in CT assist landowners and farmers including the Maple Syrup Producers Association of CT, and the Connecticut Christmas Tree Growers Association.

Other Technical Assistance

Several private organizations and governmental agencies offer technical assistance regarding agricultural practices and concerns, among them:

-the New Haven County Connecticut Farm Bureau - a voluntary, non-governmental organization of farm families,
-the Southwest Conservation District - a non-profit, conservation agency,
-the Natural Resources Conservation Service (NRCS) – an agency of the USDA,
-the CT Agricultural Experiment Station,
-the State of CT Department of Agriculture,
-the U.S. Forest Service (for forestry matters), and
-the CT Forest and Park Association (for forestry matters).

SUFFIELD, CONNECTICUT'S FARMLAND PRESERVATION PROGRAM

As stated by Philip S. Chester, Town Planner in Suffield, CT, below, detailing the very active on-going farmland preservation program sponsored by the Town.

YY

"Suffield recently created a local farmland preservation program, with the Town setting aside varying amounts of funds annually for this purpose. The Town also sponsors a Farmers' Market at a cost of $1K annually. In Dec. 2001 we held an educational workshop entitled "Land Preservation Options" where we invited elected officials from area towns as well as Suffield property owners with >30 acres. We recently purchased a 122-acre farm through matching DEP Open Space funds and now lease the farmland. We keep in touch with Suffield farmers by mail and by phone to keep them up to date on farm preservation options. We publish an article twice a year in the local monthly newspaper on the importance of farming. An article on farmland preservation is found at our web site (www.suffieldtownhall.com) under "Major Projects".

We have established specific criteria by which we rate the farms interested in selling development rights. We rate farms based on size and configuration, location, soil type, view from road, adjacency to open space, natural resource significance, types of development pressures, etc.. Suffield's Plan of C&D calls for preserving 50% of Town as open space which includes farmland, and all Town Board and Commissions are on board with this issue.

PDR stretches conservation dollars, retains working lands on the tax rolls and because it is generally used with working lands such as farmland, it helps maintain rural character. I can see that Town ownership of easements (which is the ultimate product of PDR) which includes stewardship and monitoring could be troubling if not understood properly and this should be explained to the public up front and money set aside for that. Also there is a the negotiable point of public access, which in my opinion is not insurmountable, and can be a trail through woods adjoining farm fields or as simple as a one day open farm day for fun and education; even no public access at all. What are politicians worried about? And why don't they see it as a natural part of your Town Open Space plan implementation? Suffield understands the value to purchasing development rights versus purchasing property outright (i.e., less cost, future taxes generation,
private stewardship, etc). However, we recently did purchased a farm with an ambitious plan to subdivide and sell 2 existing homes. After 2 years of hard work we accomplished our goal and retained 75+ acres of Town (farm) land at very little cost to residents. We now lease the land to farmers."

8/14/2004

Appendix ZZ

BLOW THE WHISTLE
ON
POLLUTION

OIL & CHEMICAL SPILLS:

FIRE DEPARTMENT-341-5000
CONNECTICUT DEP- -860-424-3000

DISCHARGES INTO STREAMS:
DUMPING IN WETLANDS:

CONSERVATION DEPT.-203-341-1170

LITTER IN TOWN PARKS:

PARKS/REC. DEPT.- 203-341-5090

DUMPING ON ROADS:

PUBLIC WORKS DEPT.-203-341-1120

DISCHARGES IN L.I. SOUND:

MARINE POLICE-(5/1 - 11/1) - 454-6151
POLICE HEADQUARTERS - 341-6000
COAST GUARD -203-468-4495 or 4497

SEPTIC SYSTEM LEAKS:

HEALTH DEPARTMENT - 227-9571

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distributed by Town of Westport, CT

22 1/1

Appendix AAA

Ordinance No. 09-02
Date: August 27, 2002

AN ORDINANCE APPROPRIATING $3,000,000 FOR THE ACQUISITION OF LAND FOR OPEN SPACE AND FOR IMPROVEMENTS FOR PARKS AND OTHER RECREATIONAL PURPOSES AND AUTHORIZING THE ISSUANCE OF $3,000,000 BONDS OF THE CITY TO MEET SAID APPROPRIATION AND PENDING THE ISSUANCE THEREOF THE MAKING OF TEMPORARY BORROWINGS FOR SUCH PURPOSE

BE IT ORDAINED BY THE COMMON COUNCIL OF THE CITY OF MIDDLETOWN:

Section 1. The sum of $3,000,000 is appropriated for (i) the acquisition of land for open space preservation or conservation purposes pursuant to the provisions of Section 7-131b(a) of the Connecticut General Statutes, and in accordance with a plan of development adopted by the Planning Commission, (ii) the acquisition and improvements of land for parks and other recreational purposes; and (iii) administrative, printing, legal and financing costs related thereto (collectively, the "Project"), said appropriation to be inclusive of any and all State and Federal grants-in-aid thereof.

Section 2. The estimated useful life of the Project is twenty years. The total estimated cost of the Project is $3,000,000. The portion of the cost of the Project with respect to the acquisition of land for open space may be defrayed by State grants in the estimated amount not to exceed 65% of the fair market value of the land acquired. No portion of the cost of the Project with respect to the acquisition and improvements of land for parks and other recreational purposes is expected to be defrayed from sources other than the bonds.

Section 3. To meet said appropriation $3,000,000 bonds of the City, or so much thereof as shall be necessary for such purpose, shall be issued, maturing not later than the twentieth year after their date. Said bonds may be issued in one or more series in the amount necessary to meet the City's share of the cost of the Project provided that the total amount of bonds to be issued shall not be less than an amount which will provide funds sufficient with other funds available for such purpose to pay the principal of and the interest on all temporary borrowings in anticipation of the receipt of the proceeds of said bonds outstanding at the time of the issuance thereof, and to pay for the administrative, printing and legal costs of issuing the bonds. The bonds shall be in the denomination of $1,000 or a whole multiple thereof, be issued in fully registered form, be executed in the name and on behalf of the City by the facsimile or manual signatures of the Mayor and the City Treasurer, bear the City seal or a facsimile thereof, be certified by a bank or trust company, which bank or trust company may be designated the registrar and transfer agent, be payable at a bank or trust company, and be approved as to their legality by Robinson & Cole LLP, Attorneys-at-Law, Hartford, Connecticut. The bonds shall be general obligations of the City and each of the bonds shall recite that every requirement of law relating to its issue has been duly complied with, that such bond is within every debt and other limit prescribed by law, and that the full faith and credit of the City are pledged to the payment of the principal thereof and interest thereon. The aggregate principal amount of the bonds of each series to be issued, the annual installments of principal, redemption provisions, if any, the certifying, registrar and transfer agent and paying agent, the date, time of issue and sale and

other terms, details and particulars of such bonds, including approval of the rate or rates of interest, shall be determined by the Mayor and the City Treasurer in accordance with the General Statutes of the State of Connecticut, as amended.

Section 4. Said bonds shall be sold by the Mayor and the City Treasurer in a competitive offering or by negotiation, in their discretion. If sold in a competitive offering, the bonds shall be sold at not less than par and accrued interest on the basis of the lowest net or true interest cost to the City. A notice of sale or a summary thereof describing the bonds and setting forth the terms and conditions of the sale shall be published at least seven days in advance of the sale in a recognized publication carrying municipal bond notices and devoted primarily to financial news and the subject of state and municipal bonds. If the bonds are sold by negotiation, the terms and conditions of the purchase agreement shall be approved by the Mayor and the City Treasurer.

Section 5. The Mayor and the City Treasurer are authorized to make temporary borrowings in anticipation of the receipt of the proceeds of said bonds. Notes evidencing such borrowings shall be signed by the Mayor and the City Treasurer, have the seal of the City affixed, be payable at a bank or trust company designated by the Mayor and the City Treasurer, be approved as to their legality by Robinson & Cole LLP, Attorneys-at-Law, of Hartford, and be certified by a bank or trust company designated by the Mayor and the City Treasurer pursuant to Section 7-373 of the General Statutes of Connecticut, as amended. They shall be issued with maturity dates which comply with the provisions of the General Statutes governing the issuance of such notes, as the same may be amended from time to time. The notes shall be general obligations of the City and each of the notes shall recite that every requirement of law relating to its issue has been duly complied with, that such note is within every debt and other limit prescribed by law, and that the full faith and credit of the City are pledged to the payment of the principal thereof and the interest thereon. The net interest cost on such notes, including renewals thereof, and the expense of preparing, issuing and marketing them, to the extent paid from the proceeds of such renewals or said bonds, may be included as a cost of the Project. Upon the sale of the bonds, the proceeds thereof, to the extent required, shall be applied forthwith to the payment of the principal of and the interest on any such notes then outstanding or shall be deposited with a bank or trust company in trust for such purpose.

Section 6. The Mayor is hereby authorized to spend a sum not to exceed the aforesaid appropriation for the purposes set forth herein, and the Mayor is specifically authorized to make, execute and deliver any contract or contracts, and any other documents necessary or convenient to complete the Project authorized herein and the financing thereof.

Section 7. The issuance of bonds and notes authorized hereunder is within any debt limitation prescribed by law, as shown by the following statement as of August 31, 2002:

DEBT STATEMENT
AUGUST 31, 2002
CITY OF MIDDLETOWN, CONNECTICUT

ANNUAL RECEIPTS FROM TAXATION AND REIMBURSEMENTS ("BASE")		
Fiscal Year Ended June 30, 2001		$ 66,185,856
BORROWING CAPACITY FOR EACH CLASS:		
2-1/4 times base for General Purposes		$ 148,918,176
4-1/2 times base for Schools		297,836,352
3-3/4 times base for Sewers		248,196,960
3-1/4 times base for Urban Renewal		215,104,032
3 times base for Unfunded Past Benefit Obligations		198,557,568
MAXIMUM AGGREGATE BORROWING CAPACITY		
7 times Base		$ 463,300,992
INDEBTEDNESS BONDS AND NOTES:		
GENERAL PURPOSES	$ 27,623,400	
SCHOOLS	17,304,772	
SEWERS	6,760,828	
URBAN RENEWAL	0	
UNFUNDED PAST BENEFIT OBLIGATIONS	0	
BONDS AND NOTES AUTHORIZED BUT UNISSUED:		
GENERAL PURPOSES	10,831,256	
SCHOOLS	9,461,000	
SEWERS	10,790,192	
URBAN RENEWAL	0	
UNFUNDED PAST BENEFIT OBLIGATIONS	0	
CLEAN WATER FUND LOANS:		
SEWERS	12,182,416	
SUB-TOTAL INDEBTEDNESS		$ 94,953,864
LESS:		
FEDERAL AND STATE OF CONNECTICUT BUILDING GRANTS, COMMITMENTS AND RECEIVABLES		
GENERAL PURPOSES	$ 0	
SCHOOLS	12,082,414	
SEWERS	3,393,752	
URBAN RENEWAL	0	
TOTAL DEDUCTIONS	$ 15,476,166	
NET INDEBTEDNESS		$ 79,477,698
BALANCE OF BORROWING CAPACITY FOR		

AAA

EACH CLASS:

GENERAL PURPOSES	$ 110,463,520
SCHOOLS	283,152,994
SEWERS	234,039,692
URBAN RENEWAL	215,104,032
UNFUNDED PAST BENEFIT OBLIGATIONS	198,557,568

BALANCE OF MAXIMUM AGGREGATE BORROWING

CAPACITY AVAILABLE $ 383,823,294

Section 8. The City hereby expresses its official intent pursuant to §1.150-2 of the Federal Income Tax Regulations, Title 26 (the "Regulations"), to reimburse expenditures paid sixty days prior to and anytime after the date of passage of this ordinance in the maximum amount of this ordinance for the Project with the proceeds of bonds, notes, or other obligations ("Bonds") authorized to be issued by the City. The Bonds shall be issued to reimburse such expenditures not later than 18 months after the later of the date of the expenditure or the substantial completion of the Project, or such later date the Regulations may authorize. The City hereby certifies that the intention to reimburse as expressed herein is based upon its reasonable expectations as of this date. The Director of Finance or his designee is authorized to pay Project expenses in accordance herewith pending the issuance of reimbursement bonds.

Section 9. The Director of Finance is hereby authorized, on behalf of the City, to enter into agreements or otherwise covenant for the benefit of bondholders to provide information on an annual or other periodic basis to nationally recognized municipal securities information repositories or state based information repositories (the "Repositories") and to provide notices to the Repositories of material events as enumerated in Securities and Exchange Commission Exchange Act Rule 15c2-12, as amended, as may be necessary, appropriate or desirable to effect the sale of the bonds and notes authorized by this resolution. Any agreements or representations to provide information to Repositories made prior hereto are hereby confirmed, ratified and approved.

Section 10. The Planning Commission is authorized in the name and on behalf of the City to apply, or cause an application to be made, to the Commissioner of Environmental Protection for any and all grants-in-aid of the Project described in Section 1.

Section 11. This ordinance shall take effect when the same shall have been approved by a majority of those voting thereon at a referendum called and warned for such purpose. The date of such referendum shall be determined by resolution of the Common Council. In the event that this ordinance shall not be approved at such referendum, it shall be null and void and of no effect.

Submitted by: **Councilman Ronald P. Klattenberg**

Status: PASSED
by Common Council, City of Middletown
at its meeting held on: SEPTEMBER 3, 2002

AAA

Appendix BBB

July 20, 2001

Mr. David Leff
Connecticut DEP
79 Elm Street
Hartford, CT 06106-5127

Re: NU Maromas Landholdings / Natural Heritage Trust Program

Dear Mr. Leff:

As representatives of organizations concerned about the fate of Middletown's Maromas area, we commend the April 2000 Memorandum of Understanding (MOU) that the Department of Environmental Protection entered into with Northeast Utilities. The MOU, which anticipates evaluation and possible state acquisition of certain NU-owned land in Maromas under the Recreation and Natural Heritage Trust Program, is an important step toward preservation of crucial wildlife habitat, wetlands, and the many other natural resources in this unique ecosystem along the Connecticut River.

The Maromas area is a key link in a much larger greenway of relatively unfragmented forest nearly stretching from Long Island Sound to Massachusetts border. This greenway roughly follows the path of the Bolton Range. It begins on the Saltonstall Ridge, passes by Lake Gaillard, through Cockaponset State Forest, crosses the river in the Maromas area, and continues through Meshomasic State Forest. It then continues through eastern Glastonbury and Manchester, narrows through Bolton Notch and the Valley Falls region of Vernon, continues past Shenipsit Lake and widens again into the Shenipsit State Forest.

The Maromas area provides a key 'bridge' between the Cockaponset and Meshomasic forest blocks, both areas being extremely important to nesting birds and other wildlife. The corridor may also be quite important stopover habitat for Neotropical migrant songbirds in the spring migration season due to the amount of oak-dominated woodlands. This corridor is under tremendous development pressure, and any opportunity to conserve land in this area should be fully examined. Maromas's natural resources include wetlands, largely unfragmented forest, and numerous species requiring large tracts of land to support viable populations. In fact, DEP has long managed portions of the Maromas district as important DEP wildlife management areas in cooperation with NU. Moreover, the general area contains portions of Middletown's water-supply watershed.

We ask that the Department of Environmental Protection undertake a thorough analysis of NU's Maromas land as soon as possible, to determine the extent of DEP's interest in the land for possible acquisition under the Recreation and Natural Heritage Trust Program. The analysis should begin soon, as Maromas is threatened by extensive commercial and industrial development. Our organizations are particularly concerned about the

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Connecticut River Interceptor Sewer Project, funding for which the Department of Economic and Community Development has proposed primarily to encourage development on approximately eight hundred acres in Maromas. Such threatened, extensive destruction of the area's natural resources has placed Maromas high on our organizations' list of priorities.

In conclusion, we sincerely hope DEP will commence an evaluation of Maromas within the next few weeks under the Recreation and Natural Heritage Trust Program, as the resources at stake warrant prompt acquisition determinations based upon sound ecological evaluation. In order to discuss this matter in further detail, we request the opportunity to meet with you. Please contact one of the undersigned, who will be happy to arrange such a meeting. Thank you for your consideration.

Sincerely,

Curtis P. Johnson, Esq.,
Senior Staff Attorney
Connecticut Fund for the Environment
1032 Chapel Street
New Haven, CT 06510
(203) 787-0646

Carolyn Hughes,
Deputy Director
Audubon Connecticut
185 East Flat Hill Road
Southbury, CT 06488
(203) 264-5098

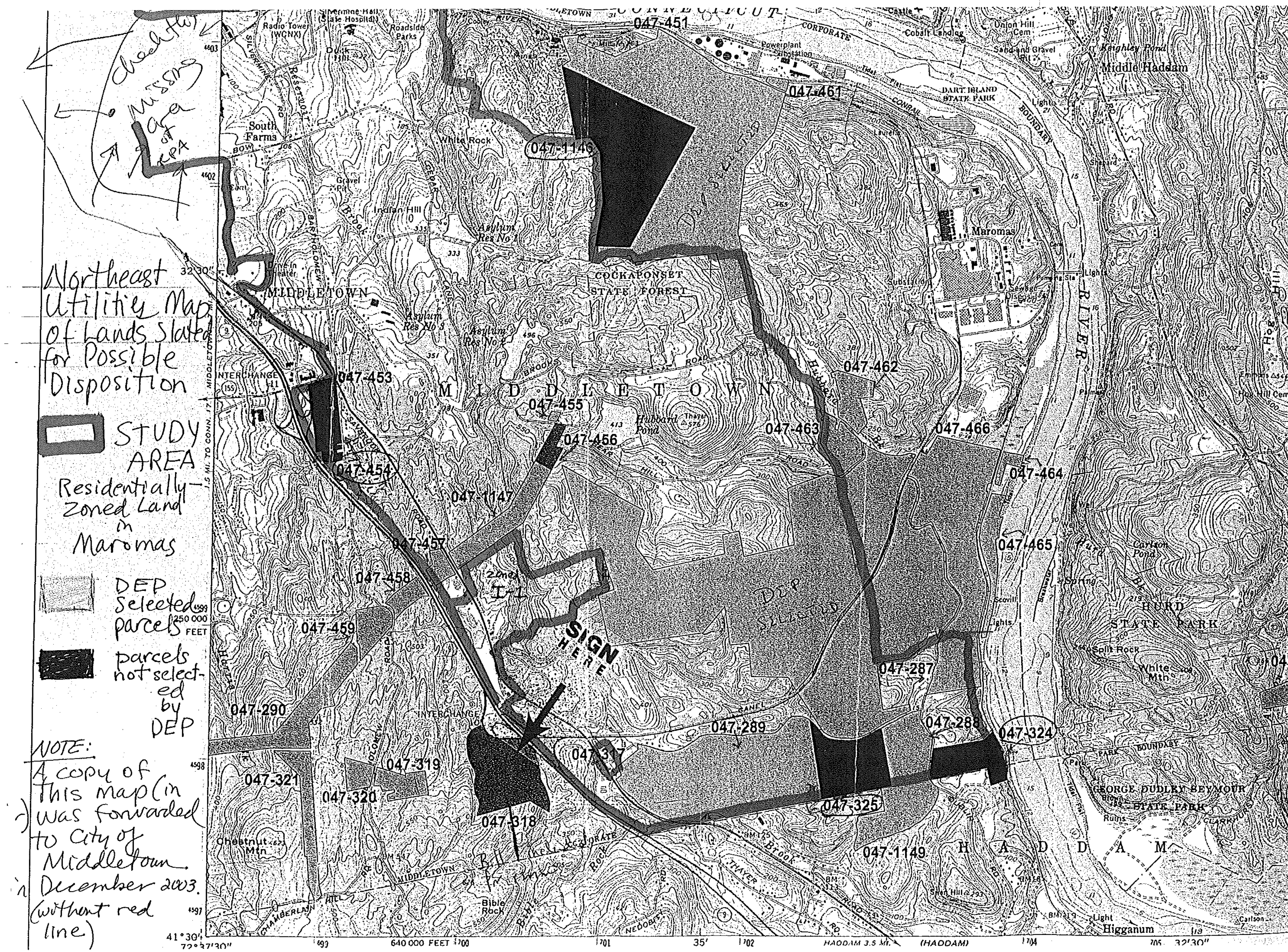
David Titus, President
Mattabeseck Audubon Society
deKoven House
27 Washington Street
Middletown, CT 06457
(860) 346-3735

Lisa Santacroce,
Director of Environmental Affairs
Connecticut Audubon Society
118 Oak Street
Hartford, CT 06106
(860) 527-6750

Tom Miner, Executive Director
Connecticut River Watershed Council
15 Bank Row
Greenfield, MA 01301
(413) 772-2020

BBB

Appendix CCC



check (w) missing area of NEPA
Northeast Utility Map of Lands Slated for Possible Disposition
STUDY AREA
Residentially-Zoned Land in Maromas
DEP Selected parcels
parcels not selected by DEP
NOTE: A copy of this map (in was forwarded to City of Middletown in December 2003. (without red line)
CONNECTICUT
047-451
047-461
047-1146
047-453
047-454
047-455
047-456
047-1147
047-457
047-458
047-459
047-290
047-321
047-320
047-319
047-318
047-317
047-289
047-325
047-1149
047-462
047-463
047-466
047-464
047-465
047-287
047-288
047-324
DEP Selected
zoned I-1
SIGN HERE
MIDDLETOWN
COCKAPONSET STATE FOREST
Maromas
Middle Haddam
DART ISLAND STATE PARK
HURD STATE PARK
GEORGE DUDLEY SEYMOUR STATE PARK
HADDAM
Higganum
South Farms
White Rock
Indian Hill
Hubbard Pond
Chestnut Mtn
Bible Rock
White Mtn
Split Rock
Carlson Pond
Hog Hill Cem
Radio Tower (WCNX)
Silvermine Hall (State Hospital)
Powerplant Substation
Cobalt Landing
Union Hill Cem
Keighley Pond
Asylum Res No 1
Asylum Res No 2
Asylum Res No 3
INTERCHANGE
250 000 FEET
640 000 FEET
41°30'
72°37'30"
32'30"
35'
HADDAM 3.5 MI.
(HADDAM)

* → Consultant determined that None of these parcels are located in Maromas Study Area

Erin -
Let me know if I can be of more help.
Denise

January 6, 2004

Salvatore Giuliano
Manager-Real Estate & Land Planning
Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270

Re: Evaluation of Certain Unimproved Lands of Northeast Utilities as Potential Future Candidates for Municipal Open Space Acquisition

Dear Mr. Giuliano,

I would like to thank you for giving the City of Middletown, specifically the Conservation Commission the opportunity to review the Department of Environmental Protection's Conservation List of properties owned by Connecticut Light & Power and Rocky River Realty. These lands have special value to the City for potential future open space and conservation purposes. From a local perspective, there are additional properties that the City feels should be included in the Conservation List. The additional properties are listed on the reply form. A statement of the open space values that would warrant the acquisition, should those properties become available follows:

047-318 This property is located in the southeast section of the city adjacent to Interchange 10 of Route 9. This property constitutes a vacant woodland area that composes an important buffer. The property is currently zoned for residential uses with a 60,000 square foot minimum lot size.

054-379 This property is located on Higby Mountain, which is part of the Metacomet Trap Rock Ridge Line. This parcel could provide public access to an adjacent property constituting 145 acres owned by Wesleyan University that is being acquired by the city with the help of an Open Space and Land Acquisition Grant from the Department of Environmental Protection. The property is currently zoned for residential use with a 45,000 square foot minimum lot size. This property is shown on the City of Middletown's Plan of Conservation and Development within an area recommended for future acquisition.

054-335 This property abuts property owned by the Middletown Land Trust. The property is currently zoned for residential use with a 30,000 square foot minimum lot size. To the north the property is adjacent to land currently operated by the State Department of Public Safety and zoned Interstate Office Park (IOP Zone). Interstate 91 bounds the southeast portion of this parcel. The property compliments existing open space and provides a buffer for the residential properties to the west from the Interstate and office use.

CCC

This property is shown on the City of Middletown's Plan of Conservation and Development within an area recommended for future acquisition.

054-337 This property is currently zoned for residential use with a 60,000 square foot minimum lot size. The property is southerly bounded by Interstate 91. The property compliments existing open space and provides a buffer for the residential properties to the north and to the west from the Interstate. This property is shown on the City of Middletown's Plan of Conservation and Development within an area recommended for future acquisition.

054-341 This property is currently zoned for residential use with a 60,000 square foot minimum lot size. The property is southeasterly bounded by Interstate 91. The property compliments existing open space and provides a buffer for the residential properties to the north. This property is shown on the City of Middletown's Plan of Conservation and Development within an area recommended for future acquisition.

054-340 This property is currently zoned for residential use with a 60,000 square foot minimum lot size. The property is westerly bounded by Meriden municipal boundary and to the northeast by Preston Avenue. The property compliments existing open space. This property is shown on the City of Middletown's Plan of Conservation and Development within an area recommended for future acquisition.

054-311 This property is adjacent to property currently held as open space.

047-290 This property is adjacent to property that is being targeted for open space acqusition.

Thank you for your consideration. Please contact me if you have any questions.

Sincerely,

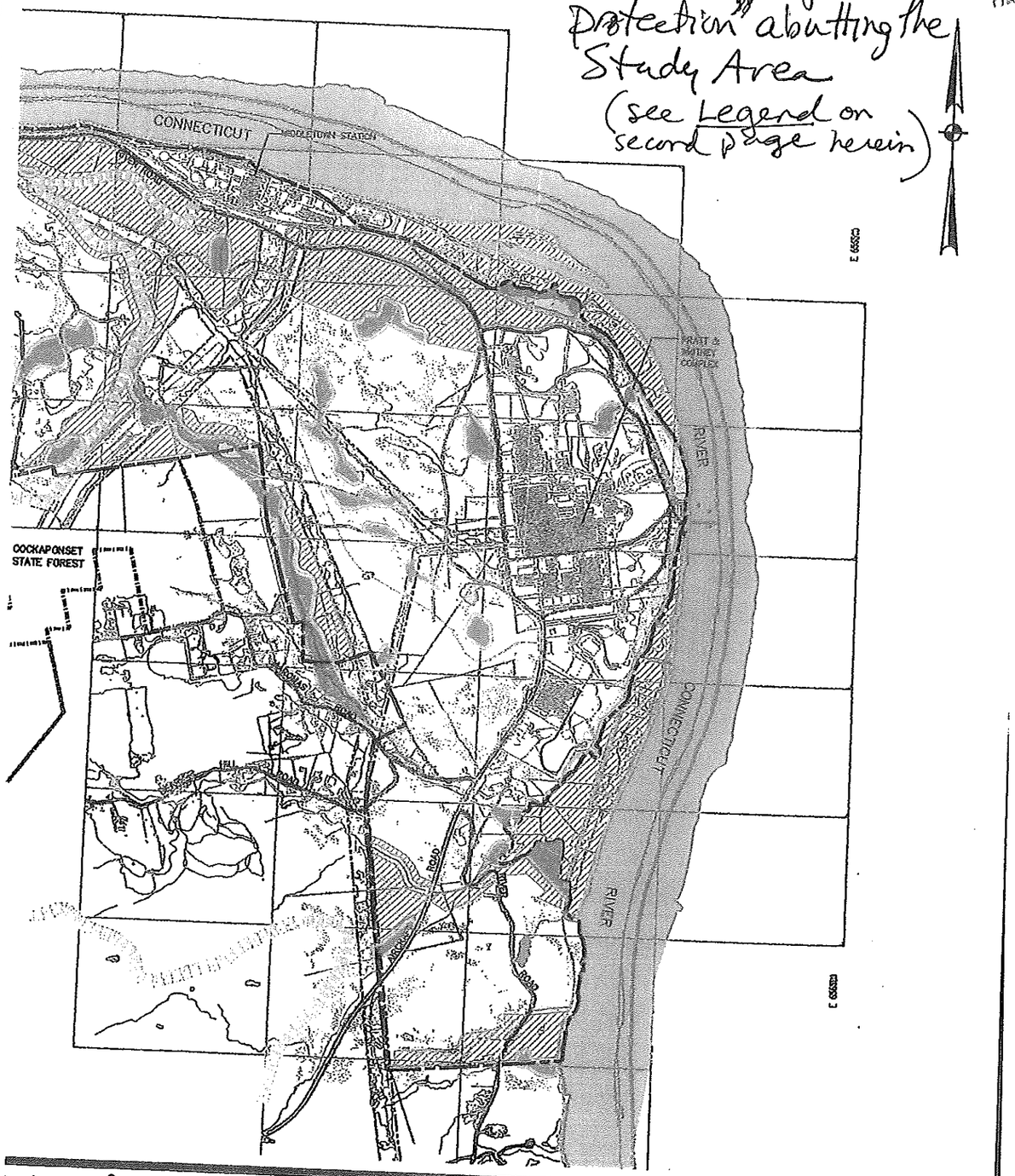
William Warner
AICP, Director of Planning, Conservation & Development

c cc

Appendix DDD

* Included for its "areas recommended for protection" abutting the Study Area (see Legend on second page herein)

DECD - prepared by Frederic Harris

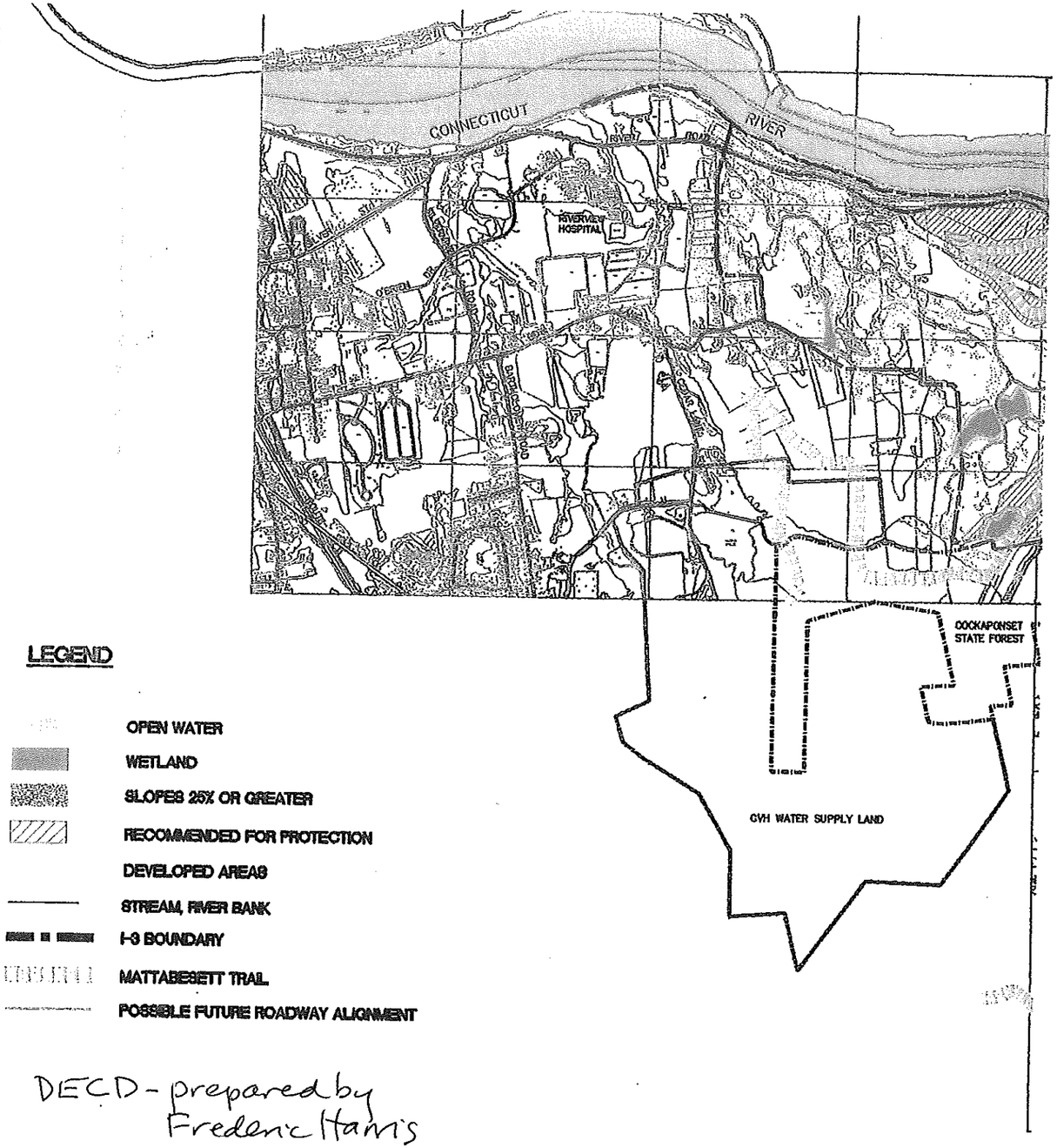


taken from:

Figure 3

"CONNECTICUT RIVER INTERCEPTOR SEWER PROJECT, MIDDLETOWN, CONNECTICUT

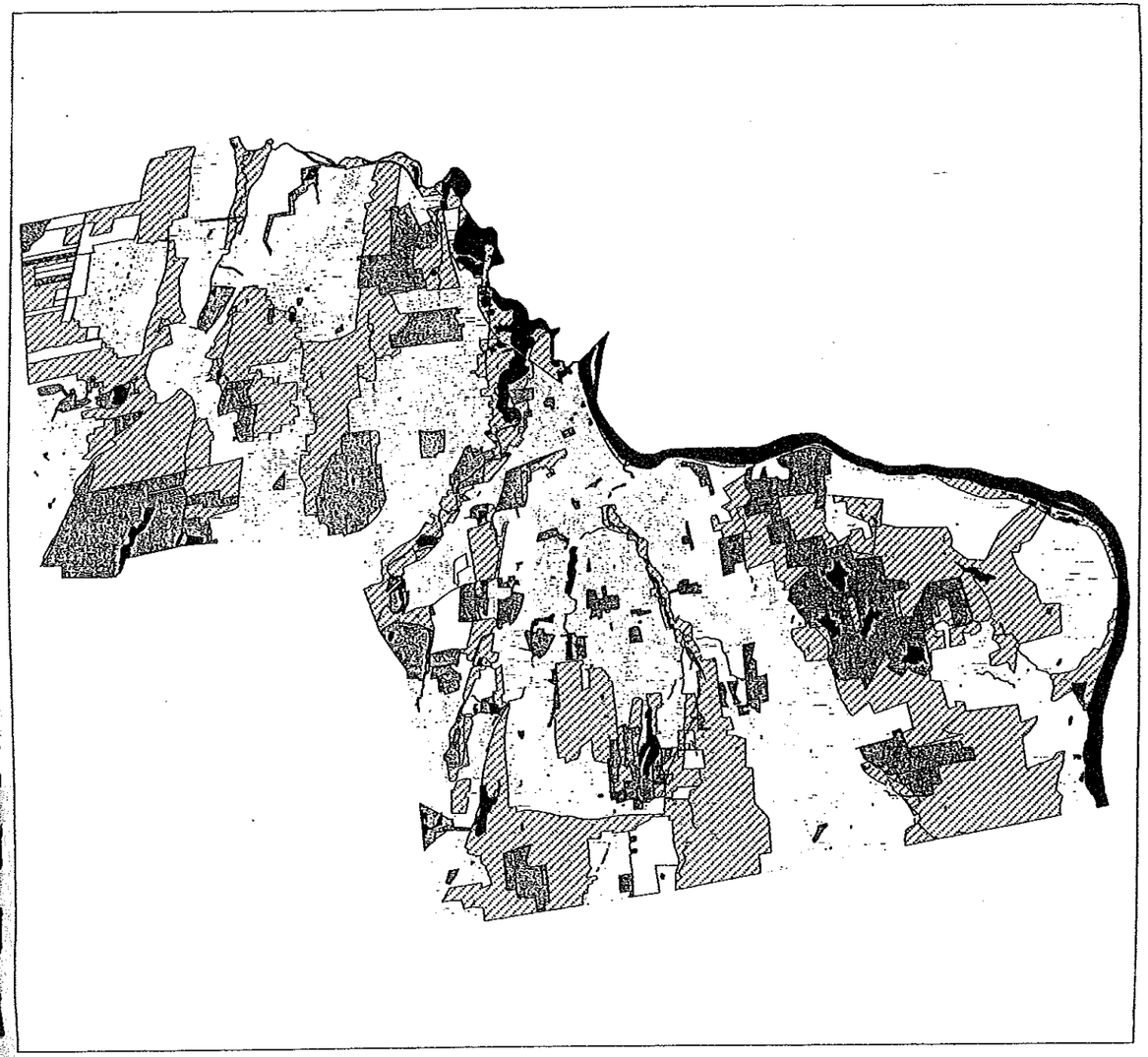
Draft" - January, 2001: DECD - Prepared by Frederic Harris



DECD - prepared by Frederic Harris

300

Appendix EEE



MIDDLETOWN PLAN OF DEVELOPMENT
Middletown, CT

Figure 9.2 **1993 Open Space Plan with Recent Acquisitions**

- Committed Open Space
- Recent Acquisitions
- Areas Recommended for Future Acquisitions

0 5000 10000 15000 Feet

BFJ Buckhurst Fish & Jacquemart, Inc.