GROTON PLAN OF CONSERVATION AND DEVELOPMENT/ MUNICIPAL COASTAL PROGRAM UPDATE

LAND USE

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Town of Groton
Planning Commission

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LAND USE

INTRODUCTION

The built environment—including the type, location and intensity of existing land uses – defines the character of a community. Understanding how much land is presently devoted to commercial, industrial, residential, parks, public, and vacant land are a key component to developing a vision and plan for the future. The land use patterns that were described in the 2002 POCD remain evident in the fabric of Groton today. Knowledge of where specific types of uses are located, particularly on a parcel basis, can help local officials identify areas that may have potential for residential development, economic development, or open space protection. This memorandum describes the existing land use composition of Groton and how it compares to the land uses calculated in 2002, either as a result of new development on once vacant lands, redevelopment of existing properties, or a change in use, such conversion of a single-family home to offices.

The inventory and analysis of Groton's land use and development patterns contained in this memo will help form the foundation for land use potential analysis and recommended future land use changes in the Future Land Use Plan. An analysis that assesses the Town's capacity to accommodate new development, known as a Build-out analysis, will be provided as a separate memorandum.

METHODOLOGY

The initial analysis of current Land Use versus Land Use reported in the 2002 POCD resulted in several discrepancies, which showed more land with a changed Land Use, than subdivision or building permits, or local knowledge of change can account for. After careful accounting for current Land Use, it was decided that there were two areas of concern. The first were methodological differences in the 2002 Plan that resulted in over counting of vacant lands by including under-developed lands, and therefore an under counting of developed/ committed lands, especially residential. The 2002 Plan explained that under-developed lands included, "developed land that is not used to its full potential such as a 10-acre parcel with one house in a half-acre residential zone." In the 2002 POCD *Existing Land Use* map, parcels that fit this criteria are shown as vacant land and their respective acres tabulated as such. In the current analysis, these parcels are instead considered single-family residential lands, and the analysis of under-development or development potential has been saved for the discrete section on Development Potential. In addition, there was an update in the Town parcel data in order to make that data more accurate, which may show some land as having changed its Land Use.

Because there is no way to go back in time and verify the 2002 Land Use, Land Use Change has NOT been calculated by a simple subtraction of 2002 acreage from 2012 acreage. Instead, all parcels were mapped by use in 2002 and 2012 and parcel by parcel comparisons were conducted. Those parcels that were identified as having changed were manually verified through field survey, review of aerial photographs, tax records, and discussions with OPDS staff. In addition, the largest parcels have been individually checked versus ownership records to determine if their use has changed. Conservation easements were reviewed and a partial list was compiled, however these maps may not show all land put aside or encumbered over the last decade. The current land use inventory and change have been individually verified with the OPDS staff in order to ascertain the correct land use categories. However, they do not include projects that have been approved but not developed as of January 1, 2013, or Open Space parcels that have been dedicated but not deeded as of January 1, 2013.

LAND USE CATEGORIES

In recognition of the 2002 POCD, SCCOG 2011 Land Use Study, as well as with input from OPDS staff and the POCD Steering Committee, the following Land Use Categories were developed to track and understand Groton's land use changes over time as well as regionally.

RESIDENTIAL

1-2 Family: Includes single-family and/or two-family houses, along with mobile and manufactured homes on individual parcels

Multi-Family: Three or more units on a parcel.

Mobile Homes: Park sites of mobile homes

Residential Navy Housing: Includes single-family and multi-family housing supporting the naval base, owned or operated by the federal government

COMMERCIAL

Commercial Retail: Includes retail sales and services operations; animal services, eating and drinking establishments; automotive sales and services; driving ranges; and other commercial recreation.

Offices: Includes commercial professional and medical office uses

Lodging: Includes commercial hotel, motel, inn, bed & breakfast, and other lodging uses

Marine Business: Includes commercial and industrial uses dependent on water access or proximity, such as marinas, boatyards, commercial fishing operations, etc.

INDUSTRIAL

Industrial: Includes manufacturing, research and development, warehousing, storage, and earth processing operations

PUBLIC/ INSTITUTIONAL

Community Facilities: Includes local-government owned buildings and facilities such as schools and their associated grounds and facilities; transfer stations; lands dedicated to flood control; water company lands with structures or buildings; and public service facilities such as senior centers, fire stations, police stations, etc.

Naval Base: Include federally owned naval property (as distinguished from naval housing)

Other State Facilities: Includes state lands and facilities otherwise not classified

Institutional: Includes private institutional uses such as places of religious worship, private schools, state or private universities, museums, daycare, and other non-profit facilities

OPEN SPACE AND PARKS

Open Space and parks: Includes parks and recreation that are maintained for active recreation, open space and parks in a natural state that are not maintained for active recreation, public & private parks, playgrounds, camping areas, golf courses, beaches, cemeteries, and water company holdings with no structures

TRANSPORTATION

Airport: Includes Runways, hangars and other supportive aviation facilities.

Parking: Includes standalone surface and structured parking.

ROW: Public rights-of-way including those used for roads and train corridors and "paper" streets.

VACANT

Vacant: Includes undeveloped parcels.

AGRICULTURE

Agriculture: Includes Agriculture, Aquaculture, and Silviculture. Also includes parcels with a Connecticut Public Act 490 Agriculture tax adjustment.

LAND USE INVENTORY

Groton's land records were incorporated into its parcel base map so that information such as land use and zoning can be displayed and analyzed on a town-wide, parcel-by-parcel basis. The existing digital base map and corresponding property records from the assessor's database resulted in a detailed *Existing Land Use Map* and inventory for all parcels within Groton. While utilizing detailed information of this type for quantifying land use patterns and trends, it is important to recognize that the purpose of this analysis is to provide a generalized assessment of land use patterns as a guide for planning purposes.

Table 1 describes the distribution and comparison of land amongst the major land use categories reported in the 2002 POCD and reflective of a 1998 land use survey. It is known that there were some methodological differences in the reporting of Land Use in the 2002 POCD, that may have resulted in an over estimate of vacant land and an under estimation of developed land (see Methodology). According to the 2002 POCD, about 69 percent of the community (14,094 acres) was occupied by residential, commercial, or institutional uses or was dedicated to a specific purpose such as public land or protected open space. Conversely, 31 percent of the land in town (6,231 acres) was vacant or uncommitted to a specific use (which, in the 2002 analysis, included non-protected Agricultural lands and oversized single family residential parcels). The map titled *2002 POCD Land Use* shows this distribution. It's important to note that these figures include the City of Groton, Noank, and Groton Long Point.

TABLE 1: 1998 LAND USE SUMMARY

1998 GROTON LAND USE SUMMARY

Use	Acres	Percent of Committed Land	Percent of Total Land
Residential	4,816	34%	24%
Commercial	660	5%	3%
Industrial	524	4%	3%
Public / Institutional Uses	1,738	12%	9%
Open Space	4,386	31%	22%
Transportation / Roads	1,969	14%	10%
Developed / Committed	**14,094**	**100%**	**69%**
Vacant / Under-Developed	**6,231**		**31%**
Total Land Area	**20,325**		**100%**

Planimetrics (Totals may not add due to rounding.)

An updated 2012 land use inventory has been compiled with assessor's records current as of June 2012, along with current aerial imagery, and in some cases, on the ground field checking and OPDS staff input. Table 2 provides a summary of the major land use categories and a calculation of percent change since the 2002 POCD inventory. Some of the changed acreage are a result of new development of vacant land, some are the result of redevelopment, and some are the result of a shift of land use in the same building, such as the conversion of a single-family house to offices. Therefore, the numbers do not represent only a direct shift from vacant land to developed lands. Additionally, because 14 years has elapsed between the land use surveys, the changes may not represent all change that has taken place on a parcel. For example, a parcel may have been vacant in 1998, subdivided, had houses built on it, and one of the houses may have been converted to offices, all within the elapsed time. Seven major categories of land use are utilized to portray the current land use in the Town.

TABLE 2: LAND USE CHANGE SUMMARY

Land Use Category*	2002 Acres [1]	2012 Acres	Difference	Change due to Methodology	Actual Change (See Methodology)	Actual % Change
Residential	4,816	5,979	1,163	419	744	15%
Commercial	660	704	44	-117	161	24%
Industrial	524	649	125	38	87	17%
Public Institutional	1,738	1,887	149	-72	221	13%
Parks & Open Space [2]	4,386	4,742	356	-89	445	10%
Agriculture	included in vacant	1,084				
Transportation/ Roads [3]	1,969	2,500	531	516	15	1%
Developed/ Committed	**14,094**	**17,545**		**696**	**1,672**	
Vacant	**6,231**	**2,832**	**3,399**			
Total Land Area [4]	**20,325**	**20,377**				

Source: 2002 POCD, Tax Assessor 2012, Groton Office of Planning and Development Services

**Land Use does not include Parcels classified as Water*

[1] Based on 2002 POCD, 1998 Land Use Inventory

[2] For comparison to 1998, this includes the City of Groton reservoir

[3] All Infrastructure, including Airport (489 acres, not included in 1998).

[4] The discrepancy between the 2002 and 2012 Total Land Area is 52 acres and is due to recent mapping updates,

Although differences in inventory methodology and categorization of land uses between 2002 POCD and 2012 exist, it is still helpful to compare land use characteristics between decades in order to identify general trends in land development and uses. As stated in the Methodology section the actual land use change has NOT been calculated by simple subtraction, but takes into account actual development and redevelopment. **Overall there has been a 12.1%, or 1,672 acre actual change in the total amount of committed land in the last 14 years,** either as the result of new development on once vacant land, or of redevelopment or land use change. To aid in comparison and understanding, the following discrepancies between the calculated difference in acreage and the actual land use change can be explained, although they will certainly not account for all land use change:

- Vacant Land discrepancy: The 2002 Land Use included "underdeveloped" lands, which are defined as both agricultural lands with no permanent protections, and very large residential parcels with a single house. They are included in the Developed/ Committed lands calculations in 2012.
- Residential discrepancy (419 acres): Attributed to an over counting of vacant land and resultant undercounting of residential lands, for example a 10 acre parcel with a house counted as vacant in the 2002 POCD, now counted as residential.
- Commercial discrepancy (-117 acres): Largely attributed to a reclassification of storage/ warehousing from commercial to industrial.
- Transportation/ Roads discrepancy (516 acres):
    - The airport (492 acres) was not included in the 1998 Transportation calculation. Adjusting for that results in a much smaller, 24 acre discrepancy.
    - Vacant land along the I-95 and rail road corridors that is owned by DOT or other transportation entities has been classified as a ROW in the 2012 land use calculation.

It is evident form the Land Use assessment that Groton has continued to develop and mature as a community in all respects particularly in the Residential, Industrial and Commercial categories, which experienced growth of 15%, 17%, and 24%, respectively. Vacant lands experienced a decrease since 2002, although, as discussed in the Methodology section, this decrease is much more difficult to quantify due to methodological differences with the 2002 POCD.

The overall distribution of Groton's land use has remained fairly stable over the last two decades. The top land use categories reported in the 2002 POCD remain the same for 2012. The top land uses by percent of land area for 2012 are Residential (29.3%), Parks and Open Space (23.3%), Transportation/Roads (12.3%) and Public (9.3%) as shown in Table 3. In total, approximately 86% of the land within the Town is in a developed or currently committed category while 13.9% is categorized as vacant. The distribution of Groton's 2012 land use is shown on the map titled *Existing Land Use Map* and Table 4, and is summarized in Table 3.

TABLE 3: EXISTING LAND USE SUMMARY, 2012

Land Use Category	Area (Acres)	Percent of Committed Land	Percent of Town's Land Area
Residential	5,979	34%	29.3%
Commercial	704	4%	3.5%
Industrial	649	4%	3.2%
Public Insitutional	1,887	11%	9.3%
Parks & Open Space	4,742	27%	23.3%
Agriculture*	1,084	6%	5.3%
Transportation/ Roads	2,500	14%	12.3%
Developed/ Committed	**17,545**	4,731	**86.1%**
Vacant	**2,832**		**13.9%**
Total Land Area	**20,377**		**100%**

Source: Tax Assessor 2012, Groton Office of Planning and Development Services

**Includes aquaculture in LIS.*

TABLE 4: EXISTING LAND USE, 2012

Residential		
Land Use Category	**Acres**	**Percent of Category**
Residential: 1-2 Family	4,697	78.6%
Residential: Multi-Family	545	9.1%
Residential: Mobile Home	104	1.7%
Residential: Naval Base	632	10.6%
Total Residential (% of total Land):	5,979	29%
Commercial		
Land Use Category	**Acres**	**Percent of Category**
Commercial: Office	81	11.4%
Commercial: Retail	501	71.2%
Commercial: Lodging	65	9.2%
Marine Business	58	8.2%
Total Commercial (% of total Land):	704	3%
Industrial		
Land Use Category	**Acres**	**Percent of Category**
Industrial	649	
Total Industrial (% of total Land):	649	3%
Public/ Institutional		
Land Use Category	**Acres**	**Percent of Category**
Community Facility	1,051	42.1%
Institutional	390	15.6%
Other State Facilities	140	5.6%
Naval Base	306	12.3%
Total Public/Institutional (% of total Land):	1,887	9%
Transportation		
Land Use Category	**Acres**	**Percent of Category**
Airport	492	19.7%
Parking Lot	33	1.3%
ROW	1,975	79.0%
Total Transportation (% of total Land):	2,500	12%
Open Land		
Land Use Category	**Acres**	**Percent of Category**
Parks and Open Space	4,742	54.8%
Agriculture*	1,084	12.5%
Vacant Land	2,832	32.7%
Total Open Land (% of total Land):	8,658	42%
Water	235	
Total Acreage of Town (including Water):		**20,612**

**Includes 41 acres of aquaculture in LIS. .*

REGIONAL COMPARISON

In 2011 The Southeastern Connecticut Council of Governments compiled a land use memo for all towns within its region. In this regional comparison, Groton, along with Norwich and New London are the three Urban Towns. Groton has far more land in low density residential use than the other comparable towns, both in percentage of total land and in the number of acres. It has less of a percentage of its land in medium or high density residential uses than the other towns, however the acreage for this category is comparable to New London. Other land uses are comparable either by acreage or percentage, except for Open Space categories. Groton has far more acreage and percentage of its land in all Open Space categories.

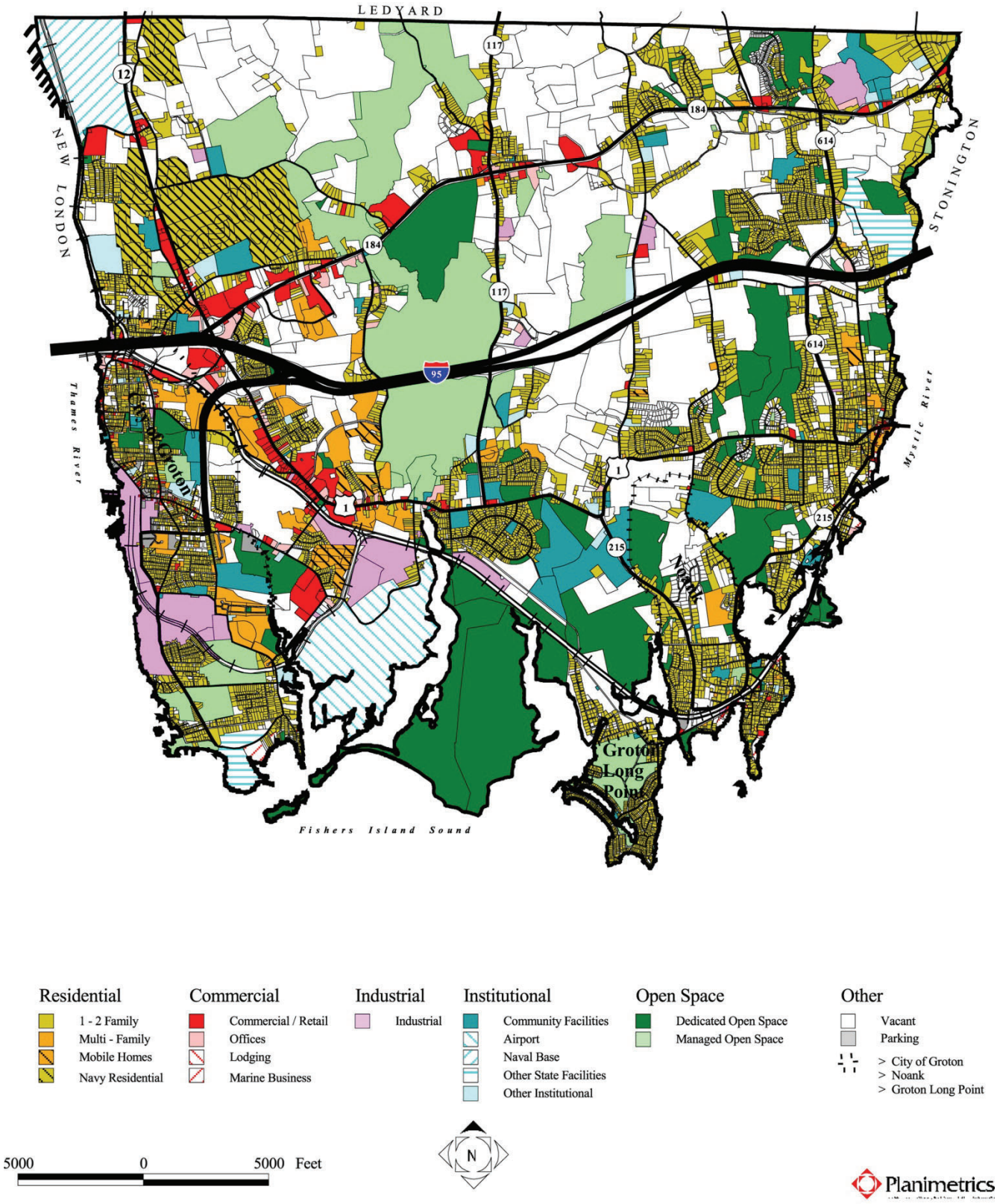
TABLE 5: REGIONAL LAND USE COMPARISON

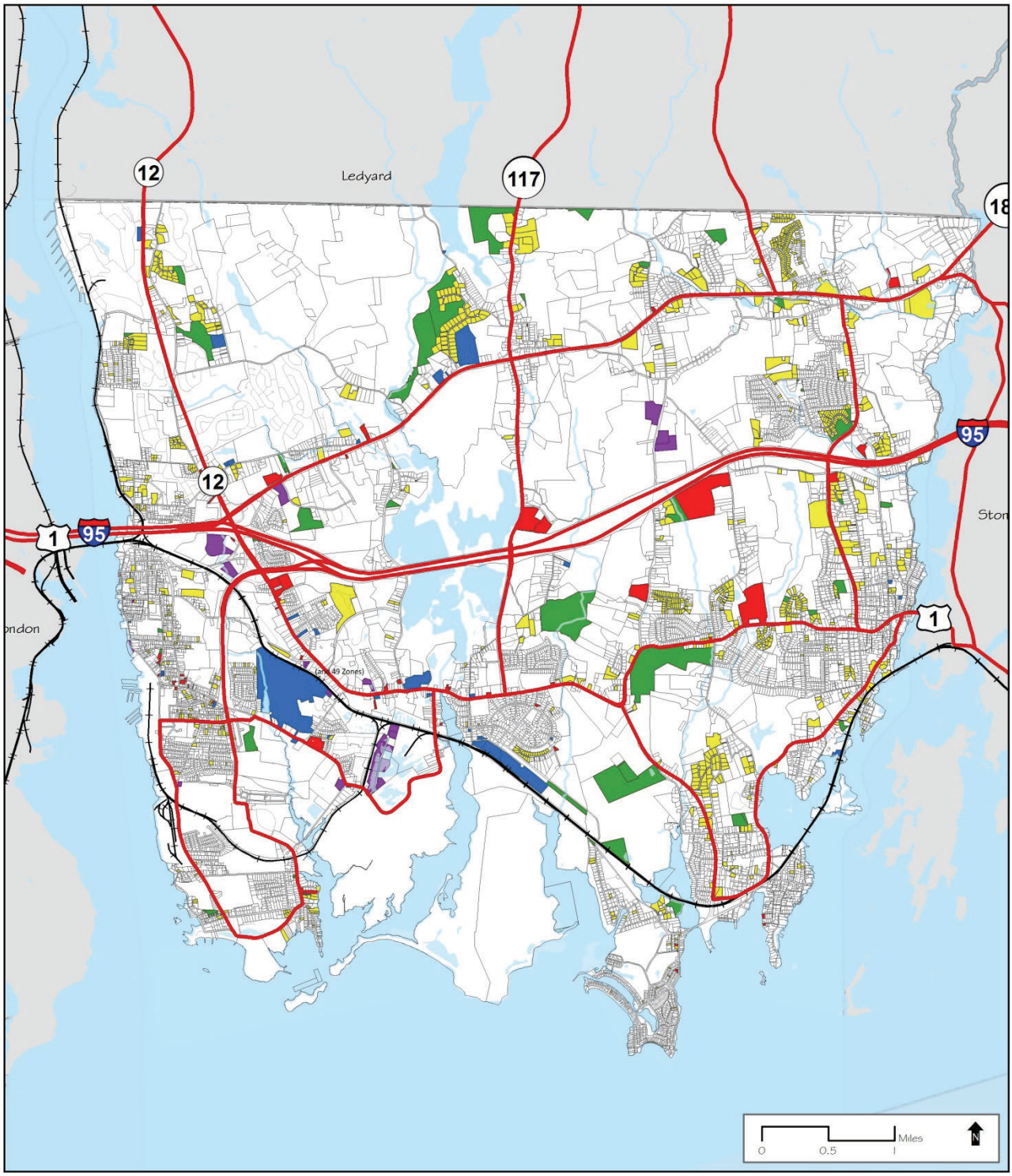
	Groton [(1)]		**Norwich** [(2)]		**New London** [(2)]	
Low Density Residential	4,697	23%	2,335	13%	83	2%
Medium/ High Density Residential	1,281	6%	3,621	20%	1,136	32%
Industrial	649	3%	487	3%	156	4%
Commercial	704	3%	696	4%	248	7%
Insitutional	1,887	9%	843	5%	507	14%
Mixed Urban Use	not classified		15	0%	37	1%
Transportation/ Communication/ and Utility	2,500	12%	1,812	10%	728	21%
Total Developed Land	**11,718**	58%	**9,809**	54%	**2,895**	83%
Open Space (w/ Cemetaries)	4,742	23%	**1,607**	9%	**317**	9%
Active Recreation	**not classified**		**162**	1%	**107**	3%
Agriculture*	1,084	5%	**604**	3%	**0**	0%
Total Open Space	**5,826**	29%	**2,373**	13%	**424**	12%
Vacant/ Undeveloped	**2,832**	14%	**5,818**	32%	**178**	5%
Total Land Area (Inc Aquaculture)	**20,377**		**18,000**		**3,497**	

Source (1): 2012 POCD, MMI. Source (2): SCCOG Land Use 2011

**Includes quaculture in LIS*

2002 POCD LAND USE





Town of Groton

Plan of Conservation & Development Update

Actual Parcel Land Use Change 2002-2012

Actual Change (2002-2012)

Residential
Commercial
Industrial
Public/ Insitutional
Open Space
Agriculture

Date: January 2013

Source:
* Parcels, Street Centerlines: Town of Groton GIS Dept.
* Basemap Data: CT DEP Map & Geographic Information Center (2012)

This map was developed for use as a planning document. Delineations may not be exact.

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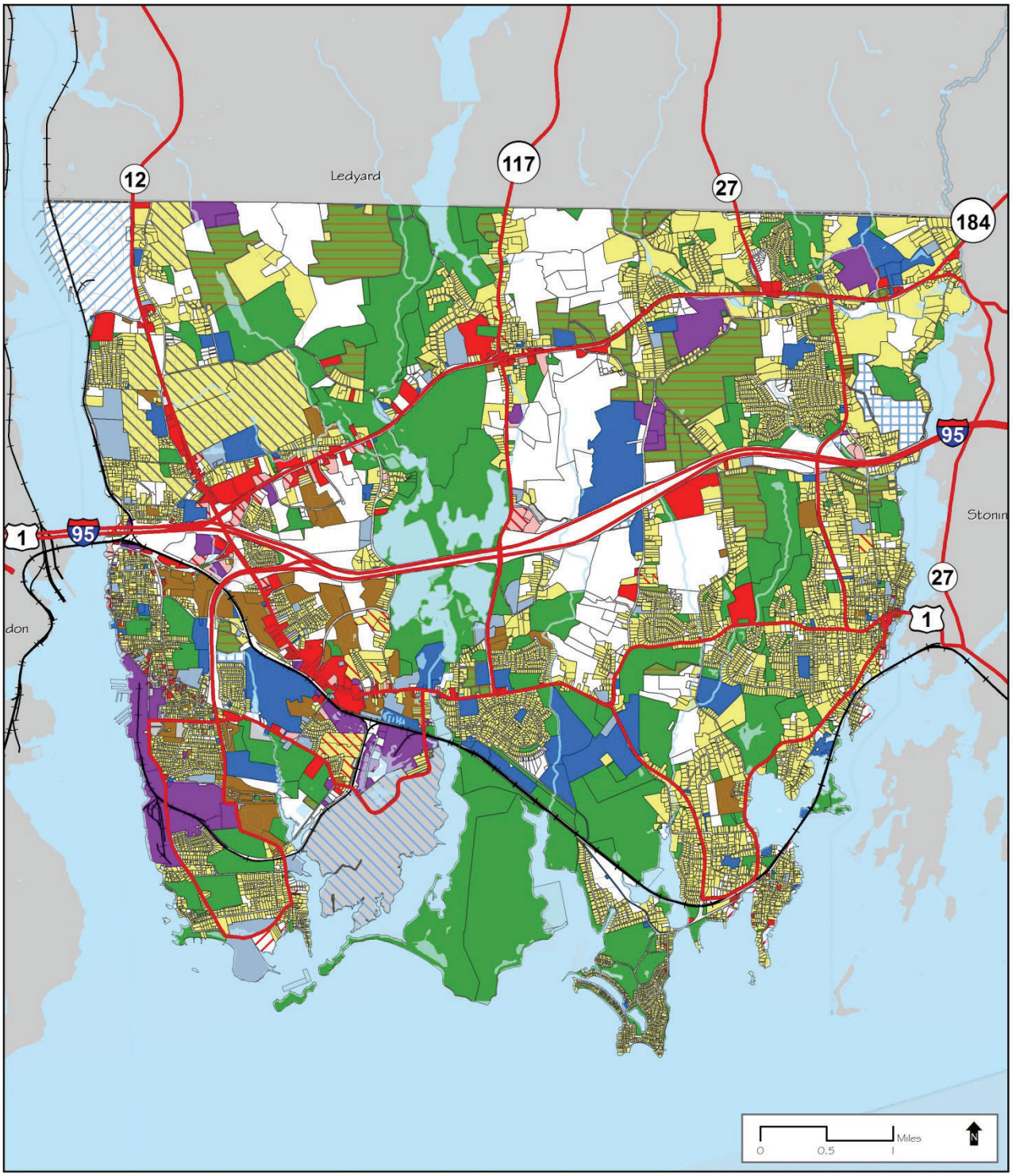

Town of Groton

Plan of Conservation & Development Update

Existing Land Use Map

2013 Land Use

- 1-2 FAMILY
- MULTI-FAMILY
- MOBILE HOMES
- RESIDENTIAL NAVY BASE
- COMMERCIAL RETAIL
- OFFICES
- LODGING
- MARINE BUSINESS
- INDUSTRIAL
- PARKING
- COMMUNITY FACILITIES
- AIRPORT
- NAVAL BASE
- OTHER STATE FACILITIES
- INSTITUTIONAL
- OPEN SPACE
- AGRICULTURE
- VACANT

Source:
* Parcels, Street Centerlines: Town of Groton GIS Dept.
* Basemap Data: CT DEP Map & Geographic Information Center (2012)

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FINDINGS

- Adjusting for changes in methodology, the amount, type, and spatial distribution of land use changes experienced between 1998 and 2012 appear to be diverse and not weighted towards any one particular land use category, area of Town, or project scale. In addition, changes generally appear to reflect objectives contained within the 2002 POCD, land use regulations, and overall comprehensive plan.

- The major land use category in Groton is residential, with over 29% of the land committed to this use. Residential land increased by 15% (744 acres) since the 2002 POCD. Single and two family housing comprises nearly 79% of the total residential acreage.

- The combined area currently in use for commercial and industrial purposes is 6.7% of the Town's land acreage. Since 2002 POCD there was a growth of 248 acres for all commercial and industrial lands.

- Vacant land accounts for 14% of the land area in the Town, or 2,832 acres.

- The growth of 87 industrial acres in the last 14 years is attributed to development within two industrial parks/ areas, north of the Airport and along Flanders Road, that house smaller, niche industrial facilities. Also included is the redevelopment of the former Caldor site, which accounts for 16.2 of the changed acres.

- The growth of 161 commercial acres in the last 14 years is well dispersed throughout the town, but many of the units are a result of parcel build-out within existing commercial areas, especially along Routes 1 and 184.

- The growth of 744 residential acres in the last 14 years is attributed to a mix of smaller lot splits, especially in denser existing neighborhoods including Noank and Mystic, and several large subdivisions, mostly north of Route 184.

- The increase of 445 acres of Park and Open Space lands include new open space acquisitions, along with land set aside from residential subdivisions, and are generally well distributed throughout the town.

- The increase of 221 acres of public/institutional acres since 1998 is largely attributed to the development of Catherine Kolnaski School and expansion of Amtrak properties, along with the construction or conversion of several new religious houses of worship.