TECHNICAL REPORT

SOUTH CENTRAL REGIONAL COUNCIL OF GOVERNMENTS (SCRCOG) REGIONAL BUILD-OUT ANALYSIS

June 2010

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I. INTRODUCTION

As a component of the South Central Regional Council of Government's (SCRCOG) Unified Planning Work Program for Fiscal Year 2010, the SCRCOG had a build-out analysis done to assess the development potential in the region. The purpose of the Regional Build-Out Analysis is to provide congestion management and planning tools to assist the SCRCOG and its individual member municipalities in planning for future growth. The analysis provides data on the potential impacts from future development on major corridors throughout the region. The results of the analysis can be used in Congestion Management reporting to state and federal agencies, and are key components to modeling future conditions in the region's Travel Demand Model (TDM). The following report summarizes the methodologies used and findings from the regional build-out analysis.

II. LAND USE ANALYSIS

The regional build-out study consists of an analysis of each of the fifteen municipalities in the region, which was then aggregated to identify regional patterns. Data from the SCRCOG, municipalities, aerial photographs and UCONN's 2006 Land Cover data were used to determine the total amount of vacant, agricultural and underutilized land.

Table 1
Build-Out Summary Findings

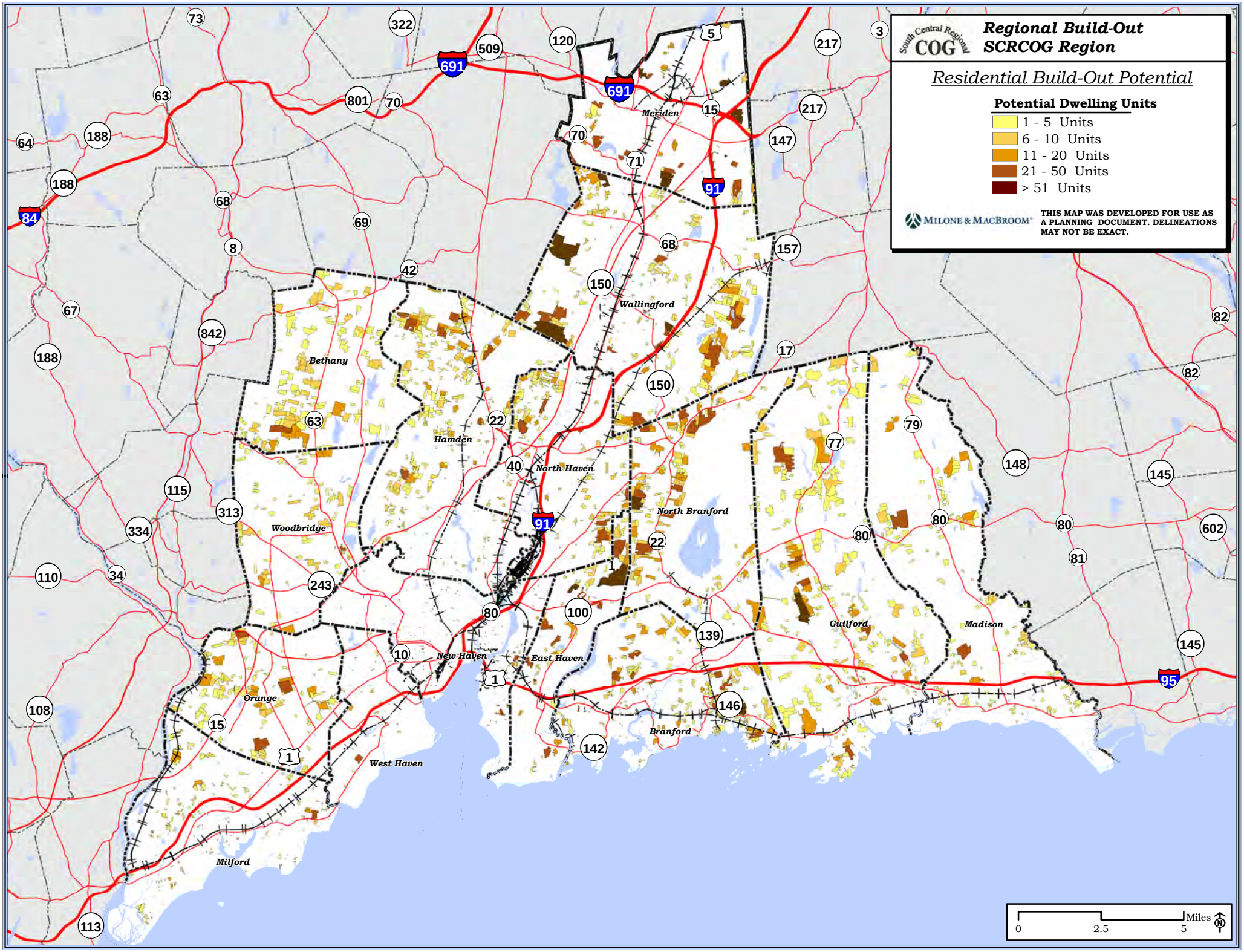
Town	Vacant Land & Agricultural Land (acres)	Dwelling Units	Potential Building sqf
Bethany	1,568.6	533	2,454,270
Branford	1,692.4	1,545	3,865,872
East Haven	1,287.9	725	984,397
Guilford	3,532.6	1,244	6,556,980
Hamden	2,155.8	1,706	3,212,779
Madison	1,660.6	519	36,735
Meriden	1,551.1	2,440	16,193,019
Milford	678.1	596	585,908
New Haven	274.0	529	919,099
North Branford	1,835.0	1,319	4,575,030
North Haven	1,282.7	814	17,050,317
Orange	1,429.7	537	7,729,732
Wallingford	2,402.2	2,055	16,898,885
West Haven	346.1	131	8,650,066
Woodbridge	513.6	334	143,623
Total:	**22,210.5**	**15,027**	**89,856,712**

The analysis then examined the physical capacity of the identified vacant, agricultural and underutilized land to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and potential gross building square footage for non-residentially zoned land. The build-out results for each municipality in the region are summarized in Table 1; more detailed data is available in the attached appendix.

The build-out results for each of the Region's fifteen member municipalities were aggregated in order to identify growth areas spanning municipal boundaries. The mapping of these features, as shown on the maps titled *"Residential Build-Out Potential"* and "*Non-Residential Build-Out Potential,"* also provide an opportunity to observe, on a regional scale, the distribution and clustering of potential residential and non-residential growth areas. For this study, growth areas were defined as clusters of parcels that collectively have significant development potential. The growth area limits were further refined based on a review of market conditions and recent development trends. This iterative process resulted in the identification of five non-residential and thirteen residential growth areas throughout the region. The growth areas are shown on the maps titled *"Residential Growth Areas*" and *"Non-Residential Growth Areas."*

As with any build-out analysis, these numbers are speculative. Land development depends on a number of variables that can greatly affect the type and intensity of land uses. One important factor in land development is the possibility of regulatory changes. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land may be purchased for open space, which would obviously remove acreage from the developable land inventory. Finally, the build-out methodology assumes that all undeveloped land is built to the maximum density allowed under current zoning regulations, which rarely happens on the ground due to a myriad of factors. Therefore, the development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.

It should also be noted that the build-out analysis does not account for reuse and redevelopment of already built-out land. It is likely that many of the new commercial and residential developments that occur in the region's urban centers and inner ring suburbs over the next few decades will involve redevelopment projects or the conversion of obsolete or underutilized structures and lots into new redefined developments. Due to the nature of the build-out analysis, the results are generally reflective of potential greenfield development in predominantly rural


South Central Regional COG
Regional Build-Out
SCRCOG Region
Residential Build-Out Potential
Potential Dwelling Units
1 - 5 Units
6 - 10 Units
11 - 20 Units
21 - 50 Units
> 51 Units
MILONE & MACBROOM
THIS MAP WAS DEVELOPED FOR USE AS A PLANNING DOCUMENT. DELINEATIONS MAY NOT BE EXACT.
Meriden
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Bethany
Hamden
North Haven
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East Haven
Orange
West Haven
Branford
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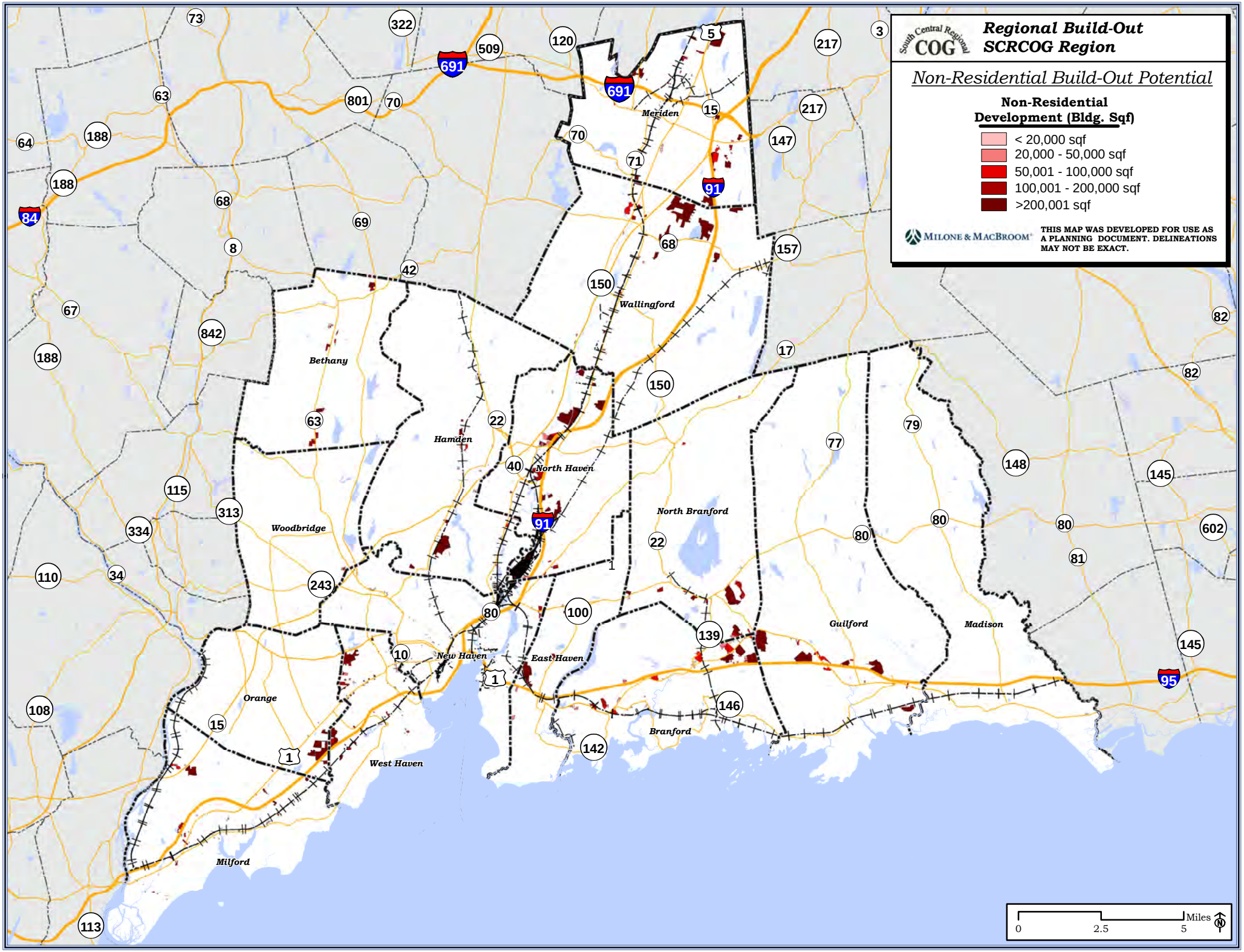
Regional Build-Out
SCRCOG Region
Non-Residential Build-Out Potential
Non-Residential
Development (Bldg. Sqf)
< 20,000 sqf
20,000 - 50,000 sqf
50,001 - 100,000 sqf
100,001 - 200,000 sqf
>200,001 sqf
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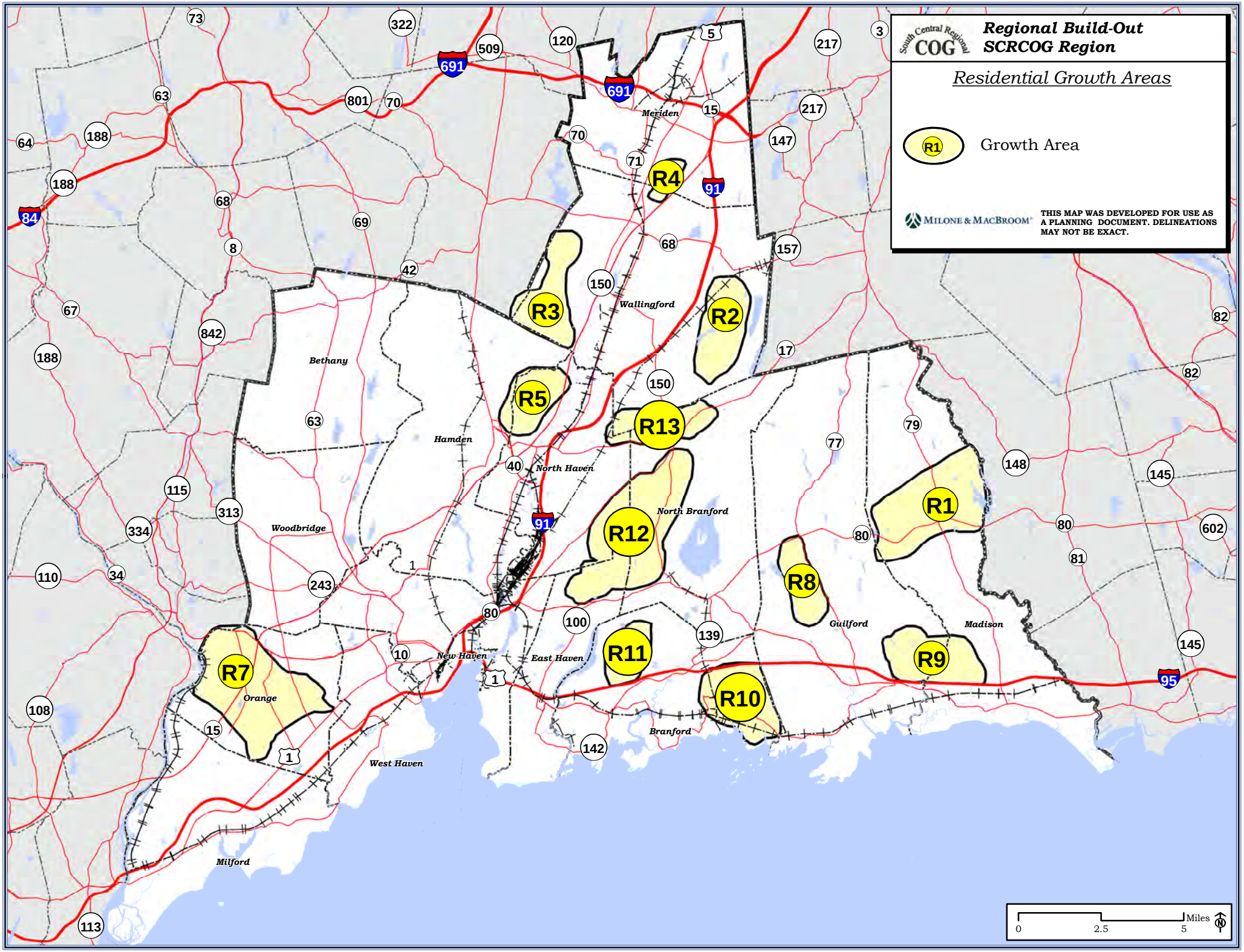
Regional Build-Out
SCRCOG Region
Residential Growth Areas
R1
Growth Area
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R1
R2
R3
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R9
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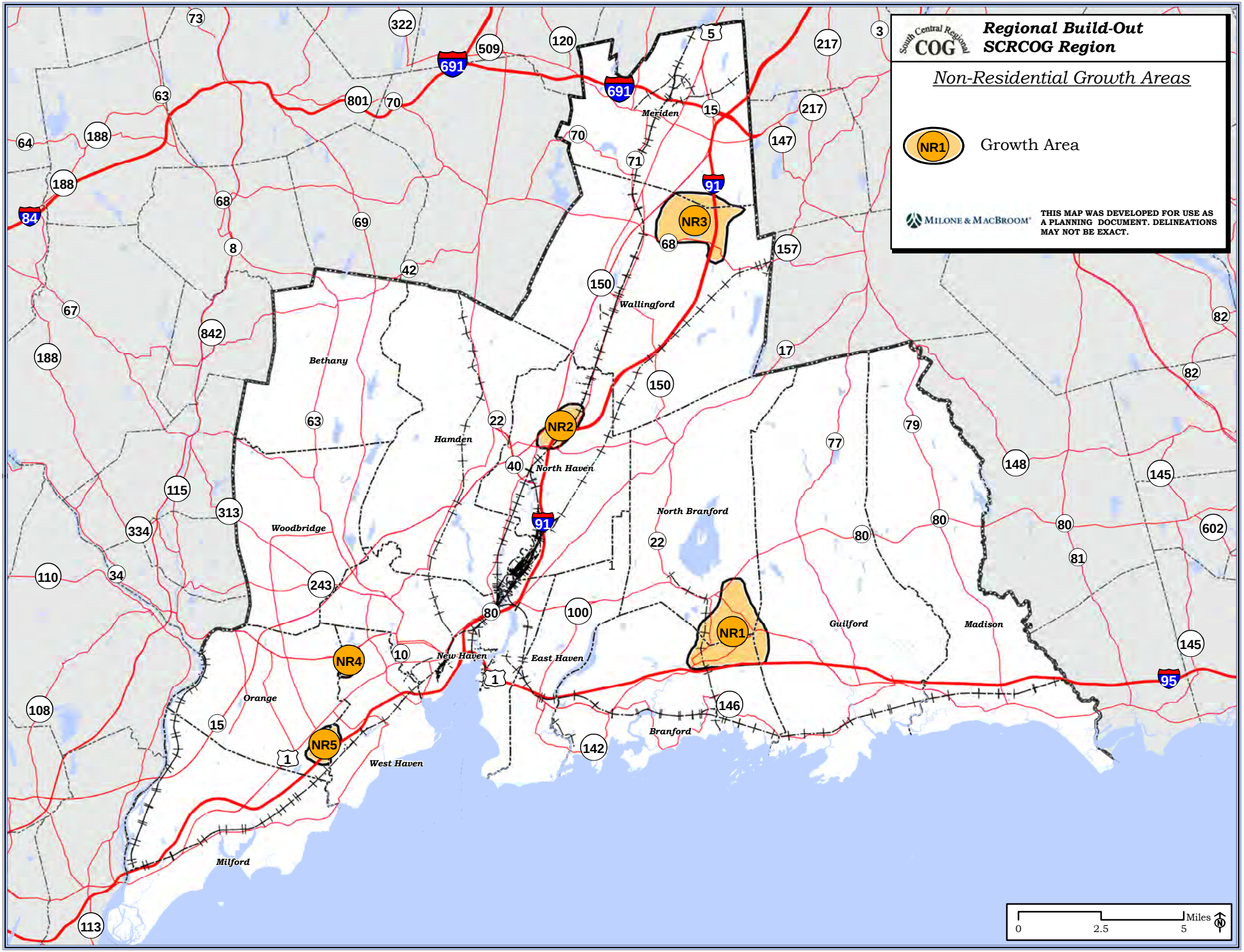
South Central Regional COG
Regional Build-Out
SCRCOG Region
Non-Residential Growth Areas
NR1
Growth Area
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North Haven
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Orange
West Haven
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Branford
NR1
NR2
NR3
NR4
NR5
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Miles
N

and suburban areas of the region and does not take into account adaptive reuse and intensification of use.

III. POTENTIAL TRAFFIC AND TRANSPORTATION IMPACTS

The build-out analysis results were combined with employment and population projections to identify potential impacts on the region's road network. Population and employment estimates developed for SCRCOG's Traffic Demand Model (TDM) update were used to generate the commercial and residential build-out estimates for the 30-year horizon. Table 2 shows the employment and population estimates from the Connecticut Department of Labor, Connecticut State Data Center and Connecticut Economic Resource Center by municipality.

Table 2
Population and Employment Projections for 30-Yr Horizon

Municipality	Group	2000 Model Population	Pop Growth Rate 2000 to 2010	2010 Model Population	Pop Annual Growth Rate 2000 to 2040	2040 Model Population		2000 Model Employment	Emp Growth Rate 2000 to 2010	2010 Model Employment	Emp Annual Growth Rate 2000 to 2040	2040 Model Employment
Bethany	Suburban	5,040	9.18%	5,503	0.74%	6,757		1,755	4.47%	1,833	0.30%	1,978
Branford	Urban Periphery	28,680	1.47%	29,101	0.15%	30,428		7,570	-1.88%	7,427	0.77%	10,276
East Haven	Urban Periphery	28,195	0.81%	28,425	-0.04%	27,799		6,780	8.37%	7,348	0.77%	9,204
Guilford	Suburban	21,395	6.52%	22,789	0.55%	26,622		8,190	7.76%	8,825	0.30%	9,233
Hamden	Urban Periphery	56,910	1.50%	57,765	0.03%	57,707		20,640	8.96%	22,488	0.77%	28,019
Madison	Suburban	17,860	10.07%	19,658	0.82%	24,754		5,375	4.47%	5,615	0.30%	6,059
Meriden	Urban Periphery	58,245	4.76%	61,017	0.49%	70,918		24,130	4.39%	25,190	0.77%	32,757
Milford	Urban Periphery	52,295	2.88%	53,800	0.31%	59,239		30,050	-0.37%	29,939	0.77%	40,793
New Haven	Urban Core	123,635	-3.50%	119,310	0.10%	128,666		75,971	14.86%	87,260	0.93%	110,017
North Branford	Suburban	13,910	4.97%	14,602	0.49%	16,896		10,225	4.47%	10,682	0.30%	11,527
North Haven	Suburban	23,045	1.53%	23,397	0.21%	25,080		21,982	11.66%	24,546	0.30%	24,780
Orange	Suburban	13,225	2.79%	13,594	0.35%	15,211		8,510	4.47%	8,890	0.30%	9,593
Wallingford	Suburban	43,025	4.63%	45,019	0.44%	51,290		25,435	12.70%	28,666	0.50%	31,051
West Haven	Urban Core	52,355	-0.23%	52,237	0.21%	56,961		17,199	-2.31%	16,801	0.93%	24,907
Woodbridge	Suburban	8,980	2.87%	9,238	0.28%	10,054		3,800	4.47%	3,970	0.30%	4,284
TOTAL	Region	546,795		555,456		608,380		267,612	8.17%	289,482	0.70%	354,477

Source: TranSystems TransCAD Model for SCRCOG, Connecticut Department of Transportation, Connecticut Department of Labor, Connecticut Economic Resource Center and Connecticut State Data Center.

For the residential component of the build-out, the estimated population change was calculated out to 2040. A factor of 2.5 persons per household was used to determine the number of dwelling units that would be needed to accommodate the estimated population change. The total number of dwelling units from the population estimate was then proportionately distributed

according to the total number of dwelling units derived from the land-based analysis for each community. This resulted in an estimate of the number of dwelling units that may be developed over the 30 year period within each community. Next, the proportion of dwelling units in each regional growth area, with respect to the community as a whole, was calculated. The dwelling units were then aggregated for growth areas that spanned municipal boundaries. Table 3 shows the final results for each residential growth area.

Table 3
Residential Growth Area 30-Yr Horizon Summary

Residential Growth Area	Dwelling Units
R1	180
R2	237
R3	602
R4	240
R5	250
R6	0
R7	434
R8	338
R9	170
R10	238
R11	98
R12	649
R13	274
Total:	**3,710**

Similiarly, the estimated employment growth for each community was calculated for the 30-year time frame for the non-residential component of the build-out. It is essential to recognize that the type of non-residential development is variable between growth areas. In order to account for this variabiltiy a factor of 750 sq ft per employee was used to calculate the amount of non-residential development necessary to accommodate the estimated growth in employment. The total amount of non-residential building square footage from the employment estimate was then proportionately distributed according to the total potential building square footage derived from the build-out for each community. That distribution yields the amount of non-residential development that may develop over the 30 year period within each community. Next, the proportion of non-residential development in each growth area, with respect to the community as a whole, was calculated. The amount of non-residential development was then aggregated for growth areas that spanned municipal boundaries. Table 4 shows the final results for each non-residential growth area.

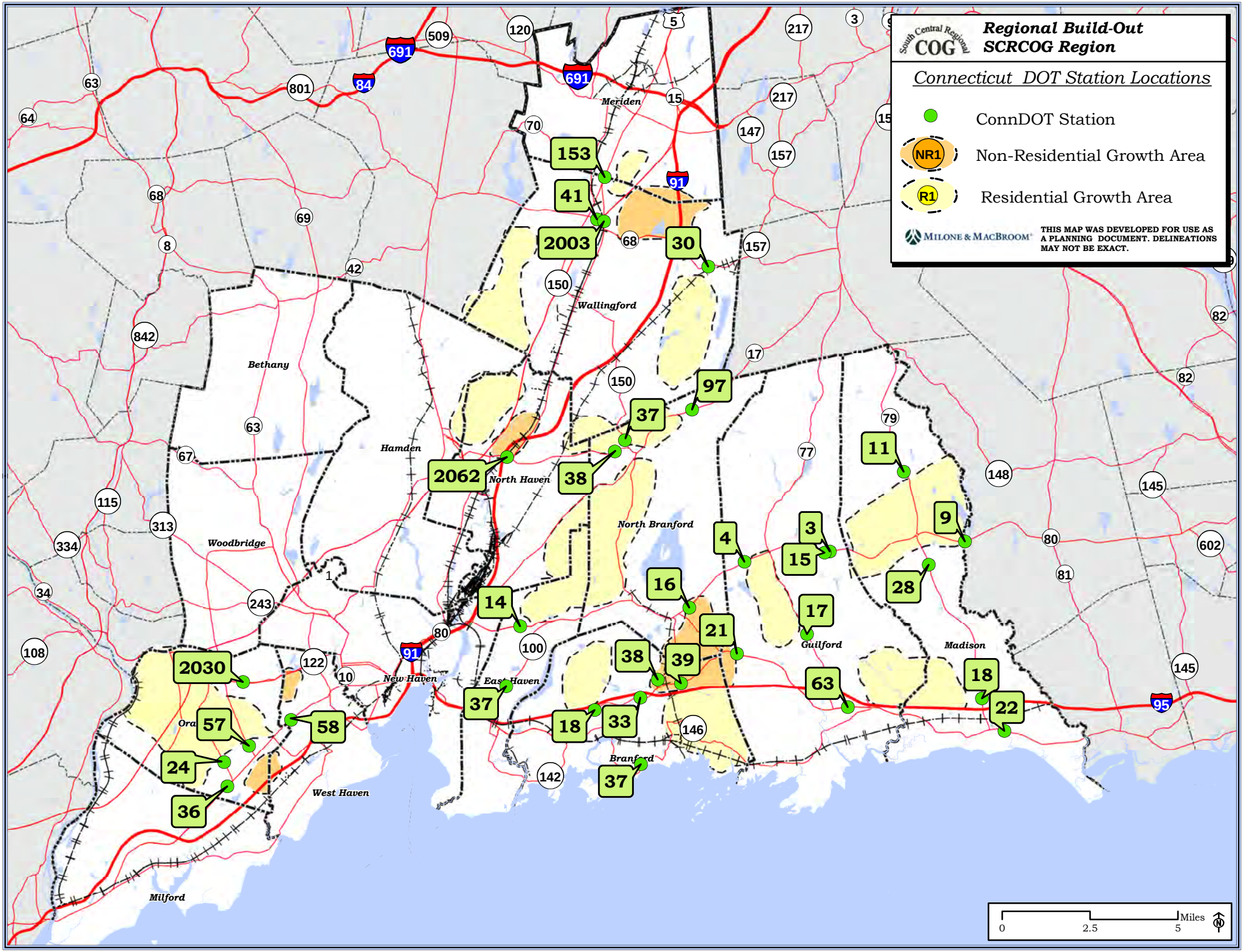
Table 4
Non-Residential Growth Area 30-Yr Horizon Summary

Non-Residential Growth Area	Non-Residential Growth based on 30-Yr Horizon (Bldg. SQF)
NR1	2,204,365
NR2	207,648
NR3	2,470,661
NR4	2,329,165
NR5	1,904,570
Total:	**9,116,407**

The potential traffic impact was analyzed for the 30-year build-out scenario on the state roadways serving communities in the region. Using the results of the build-out analysis and the Highway Capacity Management (HCM) planning level analysis, the number of weekday morning and afternoon peak hour trips and the number of all-day weekday trips for each growth area was estimated. For the weekday afternoon peak hour, typically the period of highest travel demand, the distribution of build-out traffic volumes was determined and trip routes were assigned for those trips. Once the additional trips were assigned to the area roadways in the vicinity of each growth area, the relative impact of the additional traffic was determined by comparing the quality of operations on impacted roadways under existing conditions to the quality of operations anticipated for the 30-year build-out horizon.

The traffic impact analysis was limited to state-owned roadways in the vicinity of each growth area. Limited access highways such as Interstate 91 were not examined because these roadways carry a significant volume of through-traffic, i.e. traffic that has neither an origin nor a destination within the region. It was not feasible to develop a 30-year projection for the highway system within the scope of this study. The roadways analyzed were selected based on the location of major employment and population centers within the vicinity of each growth area and the likely routes connecting these areas. For each section of roadway, the existing weekday afternoon peak hour traffic volumes were obtained from the Connecticut Department of Transportation (ConnDOT). The locations of the ConnDOT Stations relative to the growth areas area shown on the map titled *"Connecticut DOT Station Locations."* For sections of roadway where the directional split of traffic volumes was not available, estimates were generated based on the dominant travel patterns in the area. The speed limit for each selected roadway section was obtained from Streetmap USA roadway centerline files and the number of lanes for each section of roadway was determined using aerial images.

The number of trips anticipated to be generated by the potential development in each growth area was determined using the Institute of Transportation Engineers' (ITE) publication, Trip


South Central Regional COG
Regional Build-Out
SCRCOG Region
Connecticut DOT Station Locations
ConnDOT Station
NR1
Non-Residential Growth Area
R1
Residential Growth Area
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Generation.[1] For the residential land uses ITE Land Use Code #210, "Single Family Detached Housing," was applied. It should be noted that while not all of the anticipated residential development in the region is expected to consist of single-family detached housing, the majority will. This land use code was also chosen because it provides the most conservative estimate of potential traffic impact. Table 5, shows the anticipated traffic from the residential land uses for the weekday morning and afternoon peak hours, and the all-day weekday volumes.

Table 5
Trip Generation for Residential Growth Areas

Growth Area	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekday All Day		
	In	Out	Total	In	Out	Total	In	Out	Total
R1	35	100	135	115	65	180	895	890	1,785
R2	45	130	175	145	85	230	1,150	1,150	2,300
R3	110	320	430	335	195	530	2,710	2,710	5,420
R4	50	140	190	150	90	240	1,200	1,195	2,395
R5	70	210	280	225	130	355	1,795	1,795	3,590
R7	80	235	315	250	145	395	2,010	2,005	4,015
R8	60	185	245	200	115	315	1,595	1,595	3,190
R9	35	100	135	110	70	180	895	890	1,785
R10	150	445	595	445	265	710	3,655	3,655	7,310
R11	65	185	250	200	120	320	1,625	1,620	3,245
R12	180	545	725	560	325	885	4,540	4,540	9,080
R13	80	230	310	245	140	385	1,935	1,925	3,860

For the non-residential land uses an ITE Land Use Code was determined based on a number of factors, including the permitted land uses in each build-out growth area. For clusters NR1, NR3, and NR4, the anticipated traffic generated was based on ITE Land Use Code # 770, "Business Park." For cluster NR2, ITE Land Use Code #110, "Light Industrial," was applied; and for NR5, ITE Land Use Code #820, "Shopping Center," was applied. Table 6 shows the anticipated traffic from the non-residential land uses for the weekday morning and afternoon peak hours, and the all-day weekday volumes.

[1] Trip Generation, Institute of Transportation Engineers, 8th Edition, 2008.

Table 6 Trip Generation for Non Residential Growth Areas									
	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekday All day Trips		
Growth Area	In	Out	Total	In	Out	Total	In	Out	Total
NR5	785	350	1,135	2,755	2,860	5,615	28,635	28,630	57,265
NR4	2,630	500	3,130	630	2,105	2,735	12,895	12,890	25,785
NR2	135	20	155	15	125	140	725	725	1,450
NR1	2,530	480	3,010	640	2,130	2,770	12,970	12,965	25,935
NR3	2,820	535	3,355	700	2,335	3,035	14,030	14,025	28,055

For this study, Highway Capacity Management (HCM) planning analysis techniques were utilized to broadly assess Level of Service (LOS). HCM planning techniques, rather than operational analysis, were selected due to less stringent data requirements. Generally, projecting traffic volumes from HCM planning analysis techniques provides a reasonable assessment of future capacity for situations in which forecasted volumes have limited accuracy. Typically, this analysis is best used to assess levels of delay and ability of the road system to accommodate anticipated future development. The LOS was determined for each roadway segment; however, the analysis did not consider the adequacy of individual intersections, the more traditional definition of LOS. For example, a four lane arterial may function adequately (have ample capacity to carry the volume of traffic on it), but experience delays and poor LOS at specific intersections. The intent of this study is to evaluate the intersection to intersection impacts; i.e. should a two lane road need to be upgraded to a four lane road. The specific intersection impacts should be evaluated thoroughly on a development by development basis through the permitting process.

As shown, in Table 7, the addition of the 30-year build-out traffic has a limited impact on the state roadway system in the communities comprising the SCRCOG. Please refer to the map titled "*Connecticut DOT Station Locations*" for the location of the LOS analysis relative to the Growth Areas. Along most roadway sections analyzed, there is no change in LOS from the additional projected traffic volumes. Along those sections that are impacted by the additional traffic, the LOS never decreases by more than one level.

Table 7

Level of Service (LOS) Summary for Existing Conditions & 30-Yr Horizon by Growth Area

Cluster	Route	Municipality	From	To	ConnDOT Station	Northbound / Eastbound		Southbound / Westbound	
						Existing LOS	30-YR Horizon LOS	Existing LOS	30-YR Horizon LOS
R10	1	Branford	Route 139	Baldwin Drive	39	A	A	A	A
R10 / NR1	1	Branford	Mill Plain Road	Route 139	33	C	D	B	B
R11	1	Branford	Cherry Hill Road	Mill Plain Road	18	C	C	C	C
R10 / R11	139	Branford	Route 1	Thompson Road	38	B	B	A	A
R10 / R11	146	Branford	Spring Rock Road	Sybil Avenue	37	A	A	A	A
R11 / R12	80	East Haven	Route 100	New Haven Town Line	14	B	B	A	A
NR1	1	Guilford	Route 22	W. Lake Avenue	21	B	B	B	B
R9	1	Guilford	Goose Lane	Route 77	63	B	C	B	B
R8 / R9	77	Guilford	Route 80	Route 1	17	B	B	A	B
R1	80	Guilford	Route 79	Maple Hills Rd	3	A	A	A	A
R8	80	Guilford	Route 77	County Road	4	B	B	A	A
R8	80	Guilford	Route 77	Maupas Road North	15	A	A	A	A
R5 / NR2	10	Hamden	Mt. Carmel Connector	Evergreen Avenue	4	B	B	B	B
R1	79	Madison	Route 80	Beechwood Drive	28	A	A	A	A
R1	79	Madison	Route 80	Farm View Dr	11	A	A	A	A
R1 / R9	79	Madison	I-95, Exit 61 SB Off-Ramp	Wellsweep Drive	18	A	B	A	B
R5 / NR2	10	Hamden	Mt. Carmel Connector	Dixwell Avenue	9	B	B	A	A
R9	1	Madison	Route 79	Lovers Lane	22	B	B	A	A
R1	80	Madison	Route 79	Killingworth Town Line	9	A	A	A	A
R12 / R13	17	North Branford	Route 150	White Hollow Road	97	B	B	A	A
R12 / NR1	80	North Branford	Route 22	Guilford Town Line	16	D	D	C	D
R12 / R13	17	North Haven	N. Branford Town Line	Hermitage Lane	152	A	B	A	A
R5 / NR2	5 / 22	North Haven	Route 5 (State Street)	Route 103	2062	B	B	B	B
R12 / R13	22	North Haven / North Branford	Route 150	Fire Lite Pl.	38	B	C	A	B
R3 / R5 / NR3	150	North Haven/Wallingford	Route 22	Route 68	43	C	C	B	B
R7 / NR4 / NR5	1	Orange	Route 152	Peck Lane	36	B	B	A	B
NR5	114	Orange	Route 1	New Haven Avenue	57	B	C	B	C
NR5	152	Orange	Route 1	Pine Tree Drive	24	A	B	A	B
R7 / NR4	34	Orange / West Haven	Route 152	Route 122	2030	D	D	D	E
R7/NR4/ NR5	1	Orange/West Haven	Route 152	Ardale Street	58	B	C	B	C
R4 / NR3	5	Wallingford	Barnes Road Connector	Route 150	2003	B	B	B	B
R2 / NR3	68	Wallingford	I-91	Durham Town Line	30	B	B	B	B
R2 / R12 / R13	150	Wallingford / North Branford	Route 22	W. Dayton Hill Road	37	A	A	A	A
R4	150 / 5	Wallingford/Meriden	Camp Street	Route 68	153	A	A	A	A
11 / R12 / R13 / NR	80	North Branford	Route 139	Route 22	96	C	C	B	C
R7 / NR4	34	West Haven	East of W. Haven Town Line	Route 114	2029	B	C	B	B

APPENDICES

TOWN OF BETHANY

SCRCOG Regional Build-Out Analysis – Town of Bethany

ANALYSIS OF DEVELOPMENT CAPACITY

As a component of the South Central Regional Council of Government's Unified Planning Work Program for Fiscal Year 2010, an analysis was conducted assessing the development potential for the Town of Bethany. This analysis reviewed vacant, agricultural and underutilized land for residential and non-residential uses for its physical capacity to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and gross building square footage for non-residentially zoned land. Underutilized parcels for this analysis have been defined as residentially zoned parcels that are greater than five times the minimum lot size by zone.

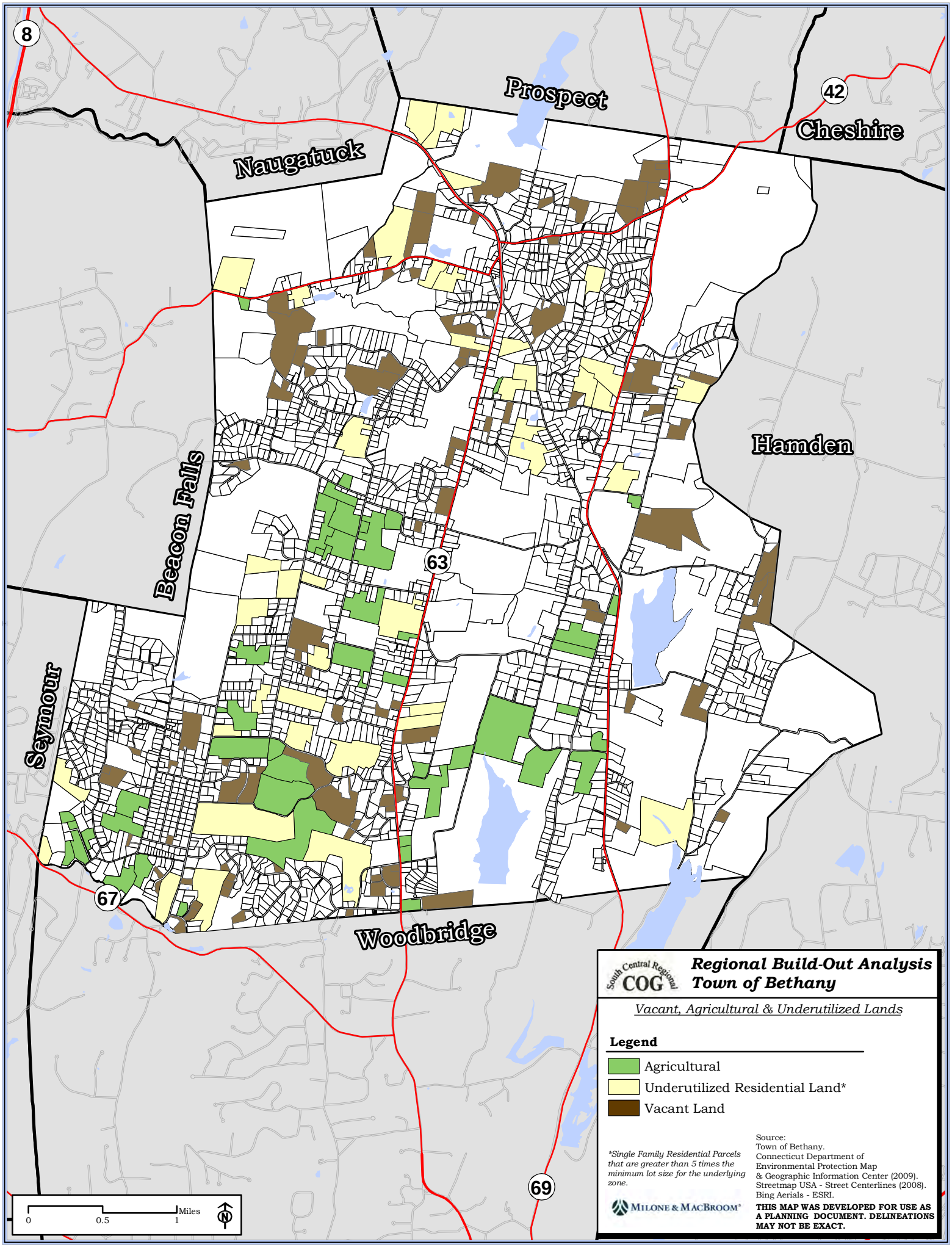
The development capacity calculated represents a reasonable scenario of growth but not an absolute buildout of every parcel in Bethany to a maximum density.

Methodology

The process to calculate development potential for vacant land involves three basic steps. First, the total amount of vacant, agricultural, and underutilized land is determined by reviewing the assessor records through the GIS parcel database. The parcels have been identified on the map titled *Vacant, Agricultural and Underutilized Lands*.

The second step of the development potential process involves calculating the developable area of the vacant, agricultural and underutilized land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slope soils (greater than 15%). These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those parcels that are large enough to be subdivided (greater than five times the minimum lot size as defined by zoning), an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that parcels were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant parcels that have an area less than the minimum lot size of the underlying zone were not included for potential dwelling units.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Prospect
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Cheshire
Naugatuck
Beacon Falls
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Regional Build-Out Analysis
Town of Bethany
Vacant, Agricultural & Underutilized Lands
Legend
Agricultural
Underutilized Residential Land*
Vacant Land
*Single Family Residential Parcels that are greater than 5 times the minimum lot size for the underlying zone.
Source:
Town of Bethany.
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
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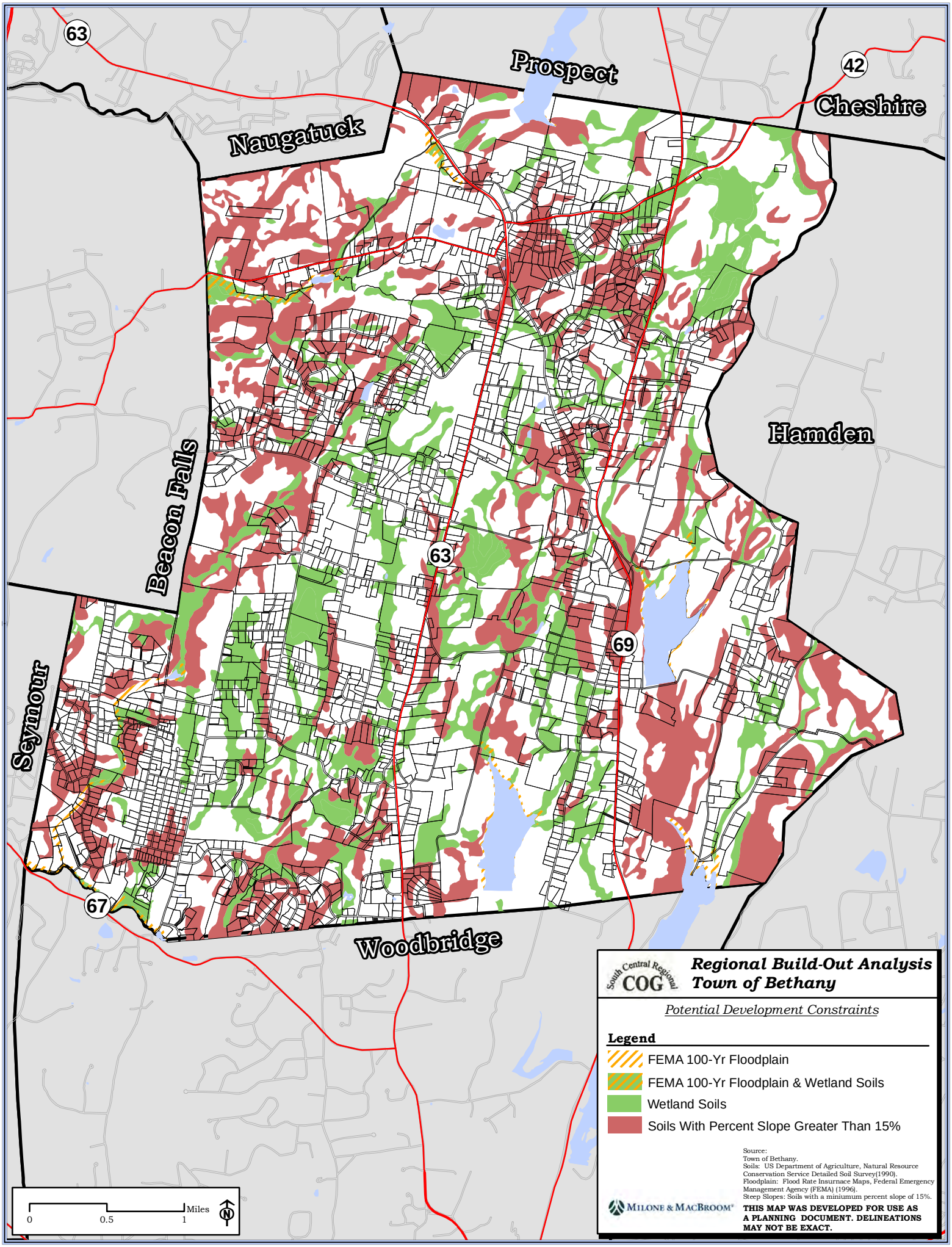
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Potential Development Constraints
Legend
FEMA 100-Yr Floodplain
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Wetland Soils
Soils With Percent Slope Greater Than 15%
Source:
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Soils: US Department of Agriculture, Natural Resource Conservation Service Detailed Soil Survey(1990).
Floodplain: Flood Rate Insurnace Maps, Federal Emergency Management Agency (FEMA) (1996).
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Land Analysis

Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant, Agricultural & Underutilized Lands* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land & Agricultural Land Analysis by Zone District

Zone	Vacant & Agricultural Land (acres)	% of Total Vacant Land
B-1	35.4	**2.3%**
B-1 WSO	61.7	**3.9%**
R-130	3.8	**0.2%**
R-130 WSO	431.0	**27.5%**
R-65	628.5	**40.1%**
R-65 WSO	408.2	**26.0%**
Total:	**1,568.6**	**100.0%**

Residential Development Capacity

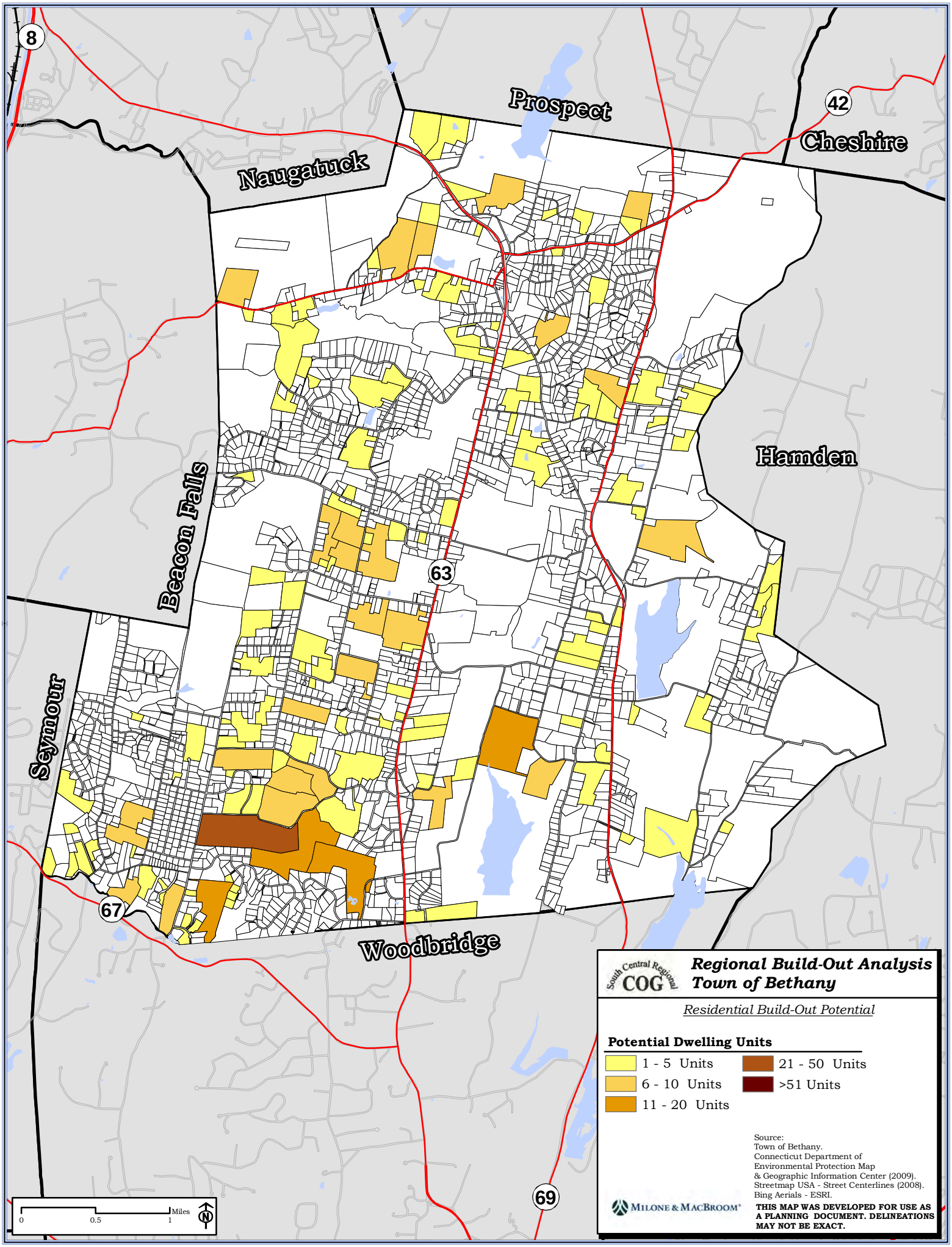
The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 533 additional dwelling units potentially could be built within the town's residential zones. Table 2 below and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.

Table 2
Residential Development Potential Under Existing Zoning Regulations

	Vacant & Agricultural Land				Underutilized Land				
Zone	**Gross Raw Vacant[1] & Agricultural Land (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units From Raw Vacant & Agricultural Land**	**Gross Land from Underutilized Lots[2] (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units Underutilized Lots**	**Total Potential Dwelling Units**
R-130	167,091	0	167,091	1	0	0	0	0	0
R-130 WSO	18,775,604	5,514,460	13,261,144	82	6,551,414	3,021,426	3,529,988	17	99
R-65	27,378,012	15,391,302	11,986,710	147	21,952,661	11,174,855	10,777,806	114	261
R-65 WSO	17,779,861	4,810,268	12,969,593	121	11,781,288	4,588,138	7,193,151	51	172
Total:	**64,100,567**	**25,716,029**	**38,384,538**	**351**	**40,285,363**	**18,784,419**	**21,500,944**	**182**	**533**

[1] *Land in its natural state that has never been developed.*

[2] *Lots that have a single family residence and are greater than 5 times the minimum lot size of the underlying zone.*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South Central Regional COG
Regional Build-Out Analysis
Town of Bethany
Residential Build-Out Potential
Potential Dwelling Units
1 - 5 Units
6 - 10 Units
11 - 20 Units
21 - 50 Units
>51 Units
Source:
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Streetmap USA - Street Centerlines (2008).
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Non-Residential Development Capacity

When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the town are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant & agricultural parcels zoned for non-residential use.

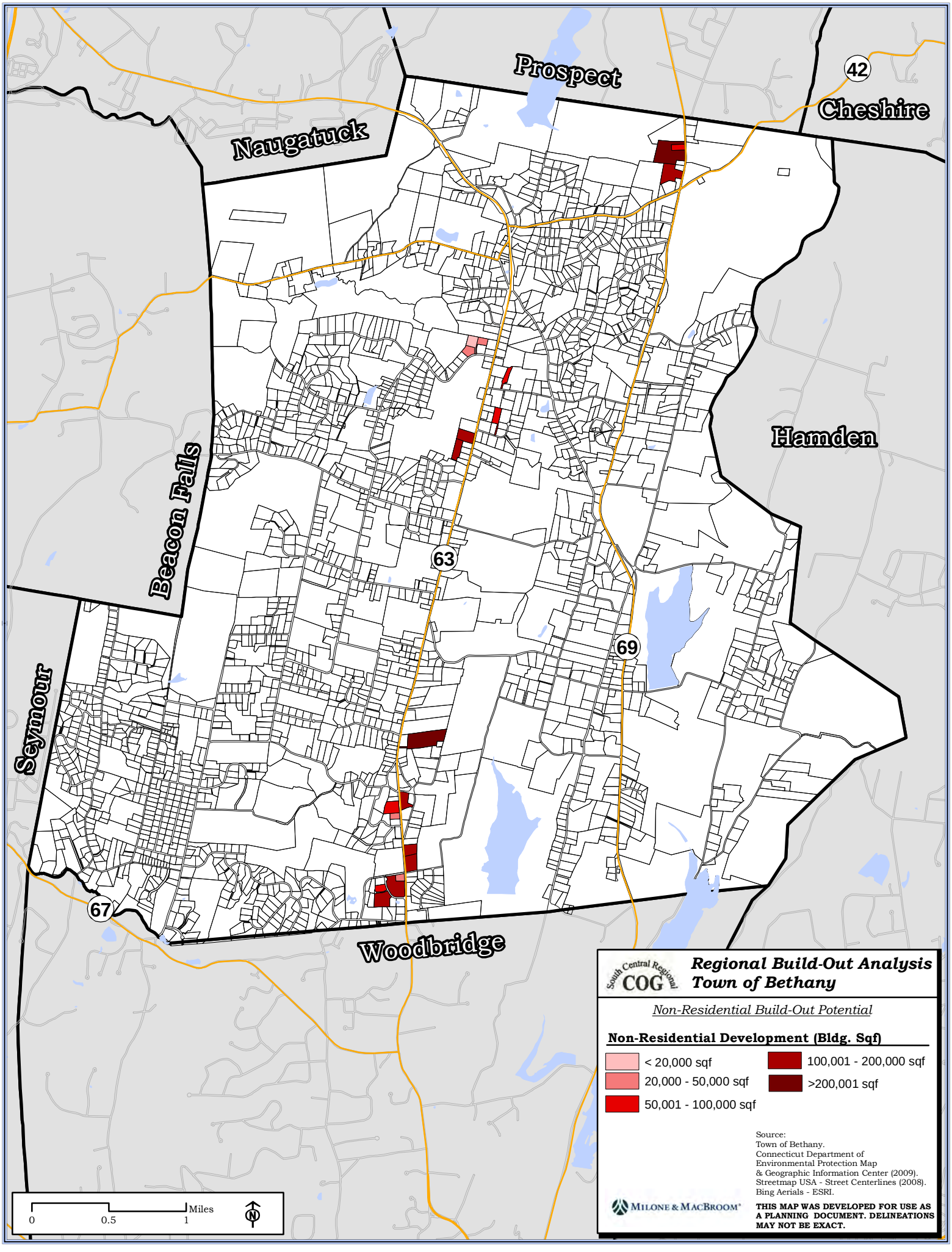
The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

Table 3
Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
B-1	1,542,711	422,900	1,119,810	788,347
B-1 WSO	2,686,951	320,584	2,366,368	1,665,923
Grand Total:	**4,229,662**	**743,484**	**3,486,178**	**2,454,270**

**Based on percent lot coverage and Floor Area Ratio (FAR) for underlying zoning.*

It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables, particularly for multifamily units. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.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Non-Residential Build-Out Potential
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< 20,000 sqf
20,000 - 50,000 sqf
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>200,001 sqf
Source:
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Attachments

SCRCOG Build-Out Land Use Regulatory Summary Table *Bethany, CT*							
Zone	*Zone Description*	*Minimum Lot Size*	*Minimum Lot Area per dwelling unit*	*Max Lot Coverage as percentage of lot area*	*Max Bldg Height*	*FAR*	*Minimum Buildable Area per lot*
R-130	Residential	130,000	130,000	10.0%	35	N/A	43,560
R-130 (WSO)*	Residential	130,000	130,000	10.0%	35	N/A	87,120
R-65	Residential	65,000	65,000	10.0%	35	N/A	43,560
R-65 (WSO)*	Residential	87,120	87,210	10.0%	35	N/A	87,210
B-1	Business and Industrial	65,000	N/A	30.0%	35	0.88	43,560
B-1 (WSO)*	Business and Industrial	87,120	N/A	30.0%	35	0.88	87,210
EH-6	Elderly Housing	130,000	Float	15.0%	25	N/A	Float

*WSO: Public Drinking water supply watershed overlay Zone

TOWN OF BRANFORD

SCRCOG Regional Build-Out Analysis - Town of Branford

ANALYSIS OF DEVELOPMENT CAPACITY

As a component of the South Central Regional Council of Government's Unified Planning Work Program for Fiscal Year 2010, an analysis was conducted assessing the development potential for the Town of Branford. This analysis reviewed vacant, agricultural and underutilized land for residential and non-residential uses for its physical capacity to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and gross building square footage for non-residentially zoned land. Underutilized parcels for this analysis have been defined as residentially zoned parcels that are greater than five times the minimum lot size by zone.

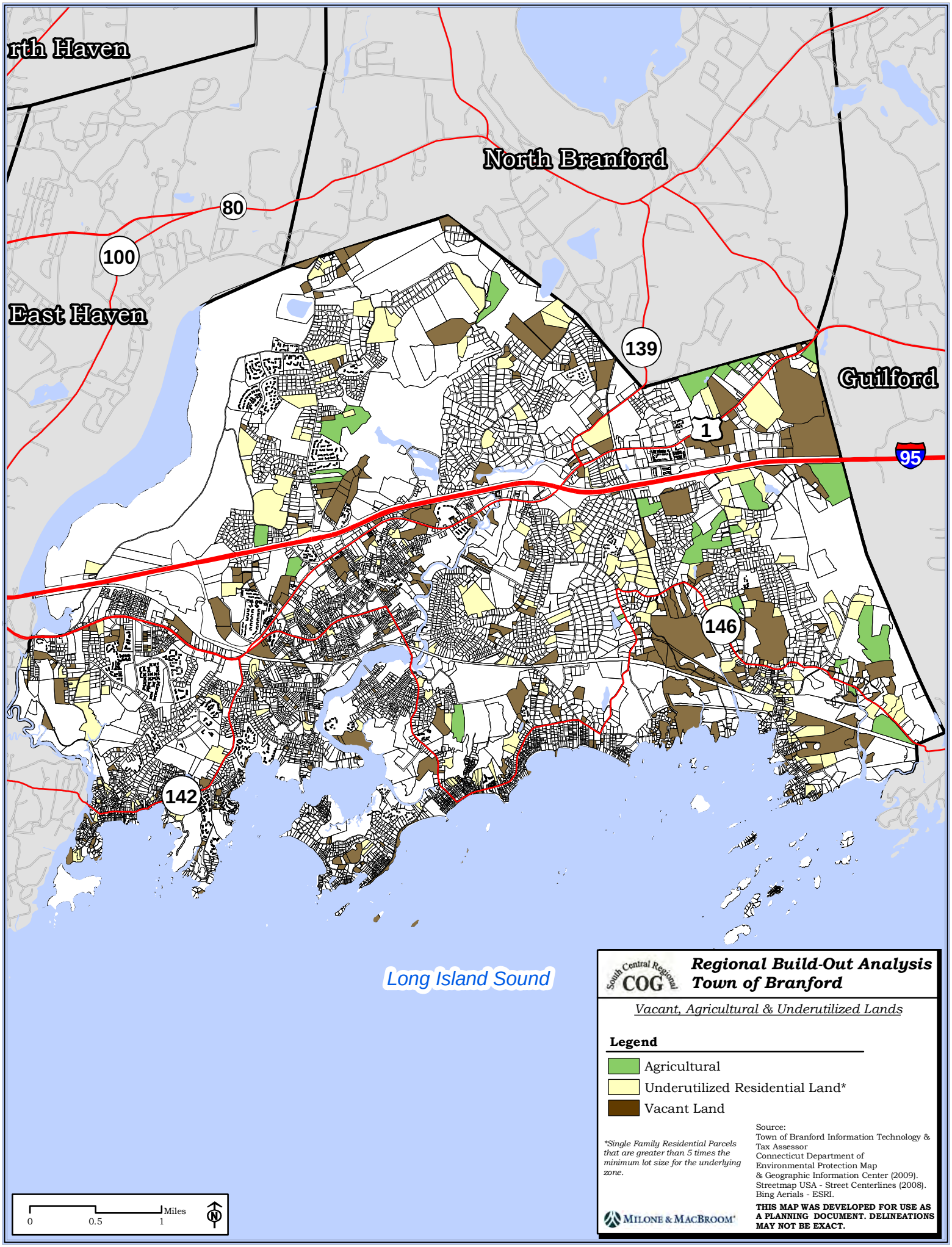
The development capacity calculated represents a reasonable scenario of growth but not an absolute buildout of every parcel in Branford to a maximum density.

Methodology

The process to calculate development potential for vacant land involves three basic steps. First, the total amount of vacant, agricultural, and underutilized land is determined by reviewing the assessor records through the GIS parcel database. The parcels have been identified on the map titled *Vacant, Agricultural and Underutilized Lands*.

The second step of the development potential process involves calculating the developable area of the vacant, agricultural and underutilized land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slope soils (greater than 15%). These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those parcels that are large enough to be subdivided (greater than five times the minimum lot size as defined by zoning), an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that parcels were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant parcels that have an area less than the minimum lot size of the underlying zone were not included for potential dwelling units.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Vacant, Agricultural & Underutilized Lands
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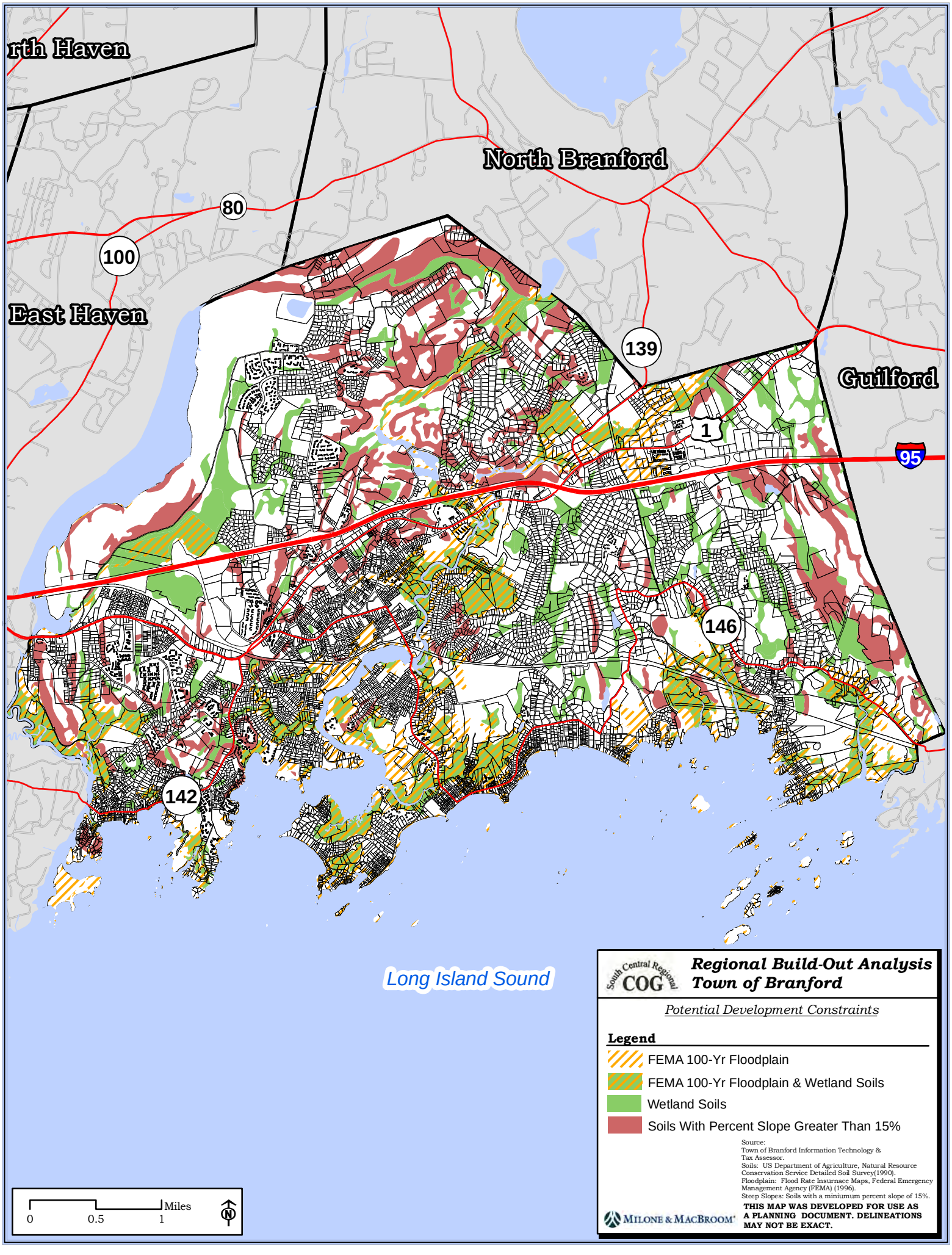
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Land Analysis

Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant, Agricultural & Underutilized Lands* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land & Agricultural Land Analysis by Zone District

Zone	Vacant & Agricultural Land (acres)	% of Total Vacant Land
A	10.3	**0.6%**
A1	25.2	**1.5%**
A2	3.7	**0.2%**
AA1	74.3	**4.4%**
B	2.6	**0.2%**
BC	0.2	**0.0%**
BL	72.6	**4.3%**
BR	13.9	**0.8%**
CP	14.1	**0.8%**
IG-1	6.8	**0.4%**
IG-2	292.3	**17.3%**
MF	4.6	**0.3%**
R-1	44.9	**2.7%**
R-2	10.1	**0.6%**
R-3	130.4	**7.7%**
R-4	395.4	**23.4%**
R-5	590.9	**34.9%**
Total:	**1,692.4**	**100.0%**

Residential Development Capacity

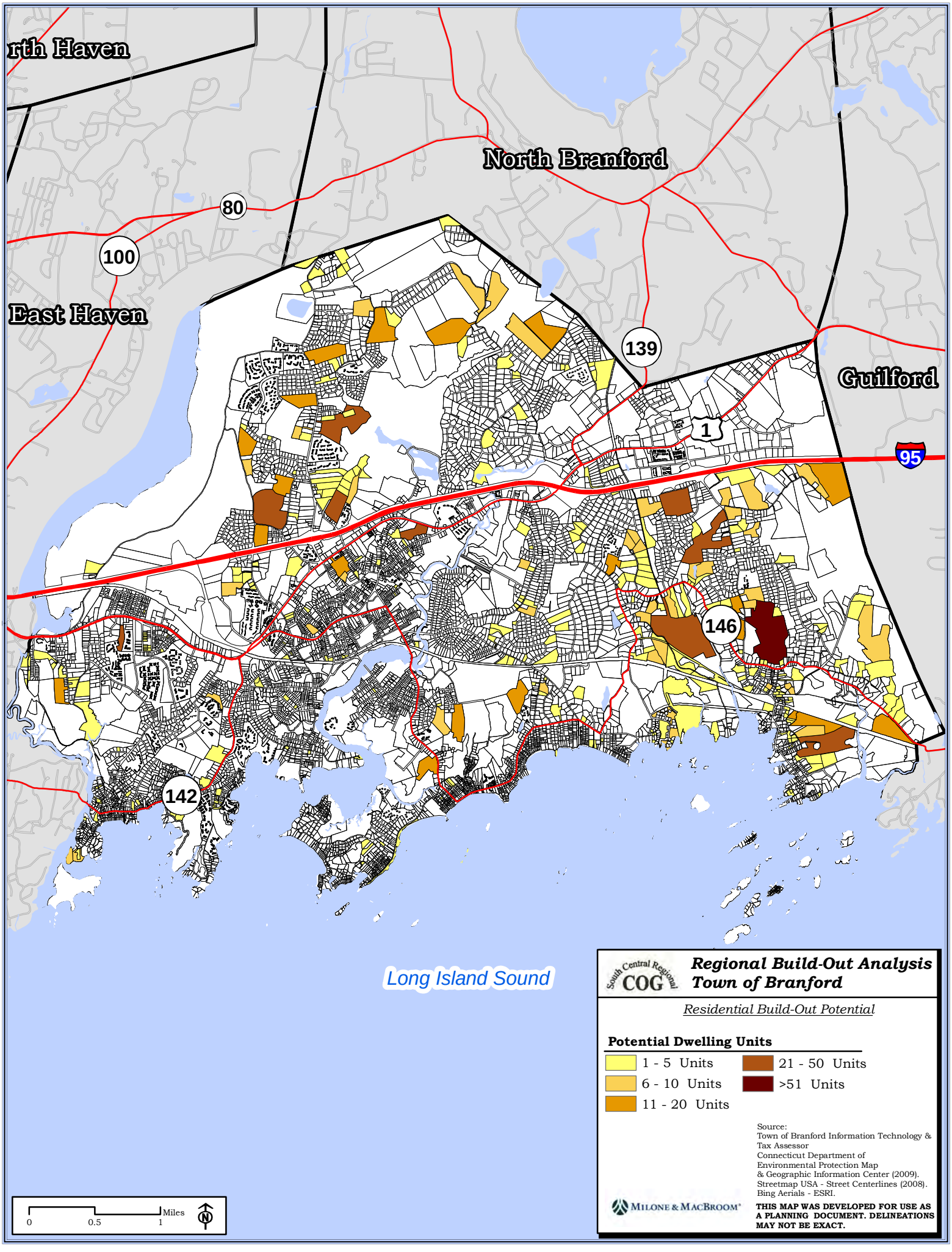
The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 1,545 additional dwelling units potentially could be built within the town's residential zones. Table 2 below and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.

Table 2
Residential Development Potential Under Existing Zoning Regulations

	Vacant & Agricultural Land				Underutilized Land				
Zone	Gross Raw Vacant[(1)] & Agricultural Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Dwelling Units From Raw Vacant and Agricultural Land	Gross Land from Underutilized Lots[(2)] (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Dwelling Units Underutilized Lots	Total Potential Dwelling Units
A	435,713	342,801	92,912	9	226,061	52,613	173,447	15	24
A1	1,072,872	544,220	528,652	20	0	0	0	0	20
A2	154,958	76,266	78,692	7	0	0	0	0	7
AA1	3,217,486	2,000,848	1,216,638	26	231,424	113,323	118,101	1	27
B	90,246	63,962	26,284	6	258,405	152,149	106,255	12	18
MF	199,545	0	199,545	22	0	0	0	0	22
R-1	1,935,475	1,278,365	657,110	85	617,096	282,509	334,587	33	118
R-2	378,089	205,540	172,549	30	1,308,145	476,750	831,395	119	149
R-3	5,305,743	3,673,193	1,632,551	86	3,175,515	2,325,869	849,645	31	117
R-4	16,970,071	7,033,082	9,936,988	397	15,258,907	6,164,642	9,094,265	308	705
R-5	25,100,815	12,107,264	12,993,551	256	9,149,541	4,013,630	5,135,911	82	338
Total:	**54,861,014**	**27,325,542**	**27,535,472**	**944**	**30,225,093**	**13,581,486**	**16,643,607**	**601**	**1,545**

[(1)] *Land in its natural state that has never been developed.*

[(2)] *Lots that have a single family residence and are greater than 5 times the minimum lot size of the underlying zone.*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Residential Build-Out Potential
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Non-Residential Development Capacity

When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the town are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant & agricultural parcels zoned for non-residential use.

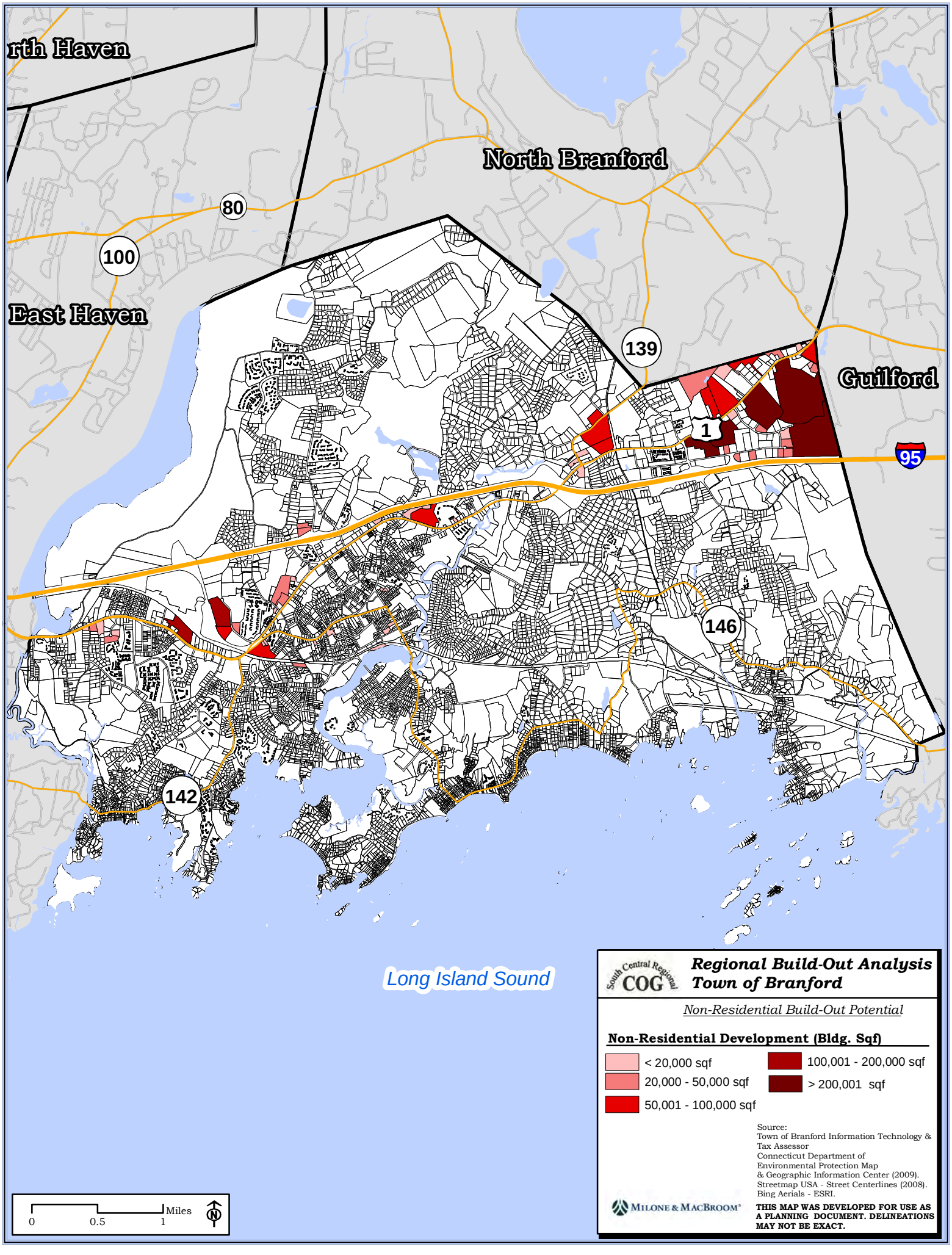
The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

Table 3
Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
BL	3,230,364	984,294	2,246,070	539,057
BR	839,063	57,461	781,602	187,585
CP	701,524	227,956	473,568	113,657
IG-1	259,775	66,221	193,554	61,937
IG-2	15,655,858	6,394,496	9,261,362	2,963,636
Grand Total:	**20,686,583**	**7,730,427**	**12,956,156**	**3,865,872**

**Based on percent lot coverage and Floor Area Ratio (FAR) for underlying zoning.*

It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables, particularly for multifamily units. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.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Non-Residential Development (Bldg. Sqf)
< 20,000 sqf
20,000 - 50,000 sqf
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Attachments

SCRCOG Build-Out Land Use Regulatory Summary Table *Branford, CT*						
Zone	*Zone Description*	*Minimum Lot Size*	*Minimum Lot Area per dwelling unit*	*Max Lot Coverage as percentage of lot area*	*Max Bldg Height*	*FAR*
R-1	Residential	6,000	4,000	25.0%	40/0.5	0.5
R-2	Residential	4,500	4,000	25.0%	40/0.5	0.5
R-3	Residential	15,000	15,000	25.0%	40/0.5	0.5
R-4	Residential	20,000	20,000	20.0%	40/0.4	0.4
R-5	Residential	40,000	40,000	15.0%	40/0.3	0.3
MF	Multi-Family Residential	130,680	7,260	20.0%	35/0.4	0.4
AHD	Affordable Housing District	4,500	4,500	25.0%	35/0.5	0.5
BC	Center Business	None	1,400	100.0%	40/2.0	2
BR	Restricted Business	6,000	4,000	25.0%	40/0.3	0.3
BL	Local Business	20,000	N/A	25.0%	40/0.3	0.3
IG-1	General Industrial	20,000	N/A	30.0%	40/0.4	0.4
IG-2	General Industrial	60,000	N/A	30.0%	40/0.4	0.4
CP	Commerce Park	20,000	N/A	25.0%	40/0.3	0.3
A	Residence	7,500	N/A	30.0%	30	0.75
B	Residence	4,500	N/A	30.0%	30	0.75
C	Business	4,500	N/A	30.0%	30	0.75
A1	Residential	20,000	N/A	25.0%	30	0.63
A2	Residential	9,000	N/A	30.0%	30	0.75
A3	Residential	7,000	N/A	35.0%	30	0.88
A4	Residential	4,500	N/A	40.0%	30	1.00
AA1	Residential	40,000	N/A	20.0%	30	0.50

TOWN OF EAST HAVEN

SCRCOG Regional Build-Out Analysis - Town of East Haven

ANALYSIS OF DEVELOPMENT CAPACITY

As a component of the South Central Regional Council of Government's Unified Planning Work Program for Fiscal Year 2010, an analysis was conducted assessing the development potential for the Town of East Haven. This analysis reviewed vacant land for residential and non-residential uses for its physical capacity to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and gross building square footage for non-residentially zoned land. Underutilized parcels for this analysis have been defined as residentially zoned parcels that are greater than five times the minimum lot size by zone.

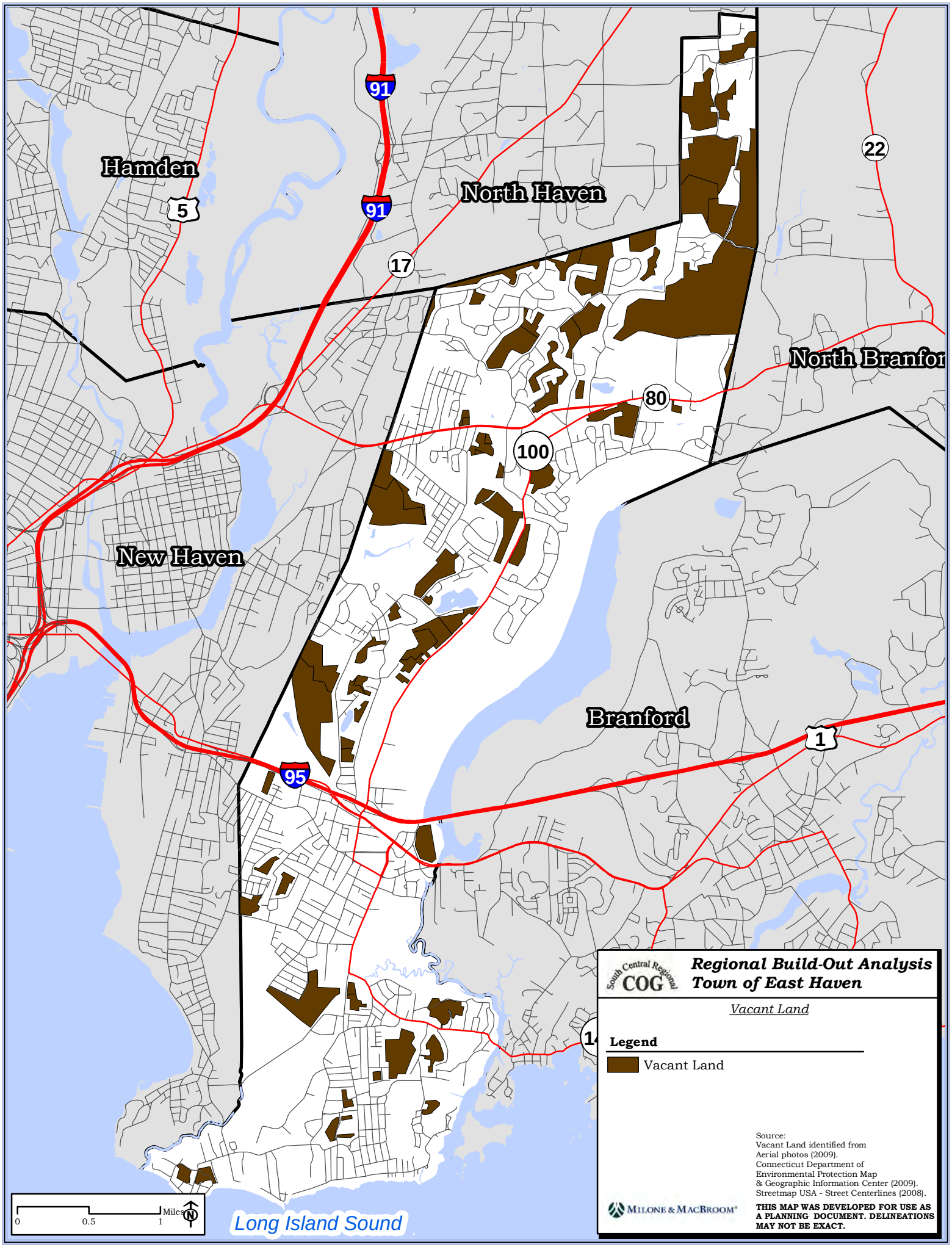
The development capacity calculated represents a reasonable scenario of growth but not an absolute buildout of every parcel in East Haven to a maximum density.

Methodology

The process to calculate development potential for vacant land involves three basic steps. First, the total amount of vacant land is determined by identifying vacant tracts of land from aerial photographs. The vacant tracts of land have been identified on the map titled *Vacant Land*. It is important to note that since East Haven did not have a digital parcel base map, the vacant tracts of land do not correspond to lot lines.

The second step of the development potential process involves calculating the developable area of the vacant land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slope soils (greater than 15%). These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those vacant tracts of land that are large enough to be subdivided an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that vacant tracts were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant lands that have an area less than the minimum lot size of the underlying zone were not included.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Source:
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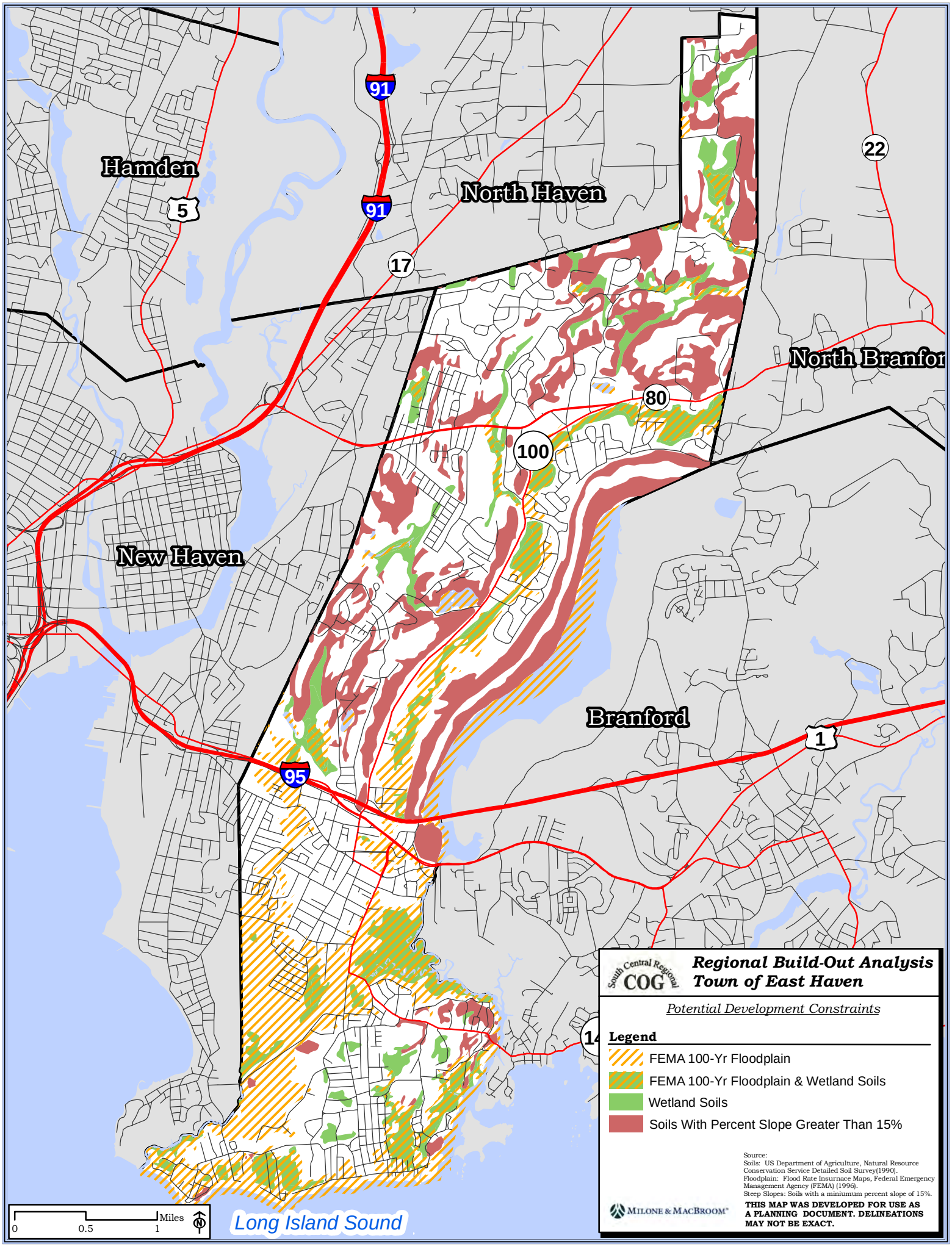
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Regional Build-Out Analysis
Town of East Haven
Potential Development Constraints
Legend
FEMA 100-Yr Floodplain
FEMA 100-Yr Floodplain & Wetland Soils
Wetland Soils
Soils With Percent Slope Greater Than 15%
Source:
Soils: US Department of Agriculture, Natural Resource Conservation Service Detailed Soil Survey(1990).
Floodplain: Flood Rate Insurnace Maps, Federal Emergency Management Agency (FEMA) (1996).
Steep Slopes: Soils with a miniumum percent slope of 15%.
THIS MAP WAS DEVELOPED FOR USE AS A PLANNING DOCUMENT. DELINEATIONS MAY NOT BE EXACT.

Land Analysis

Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant Land* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land Analysis by Zone District

Zone	Vacant Land (acres)	% of Total Vacant Land
CB-2	1.6	**0.1%**
CC	1.6	**0.1%**
DRA-1	30.3	**2.4%**
LI-1	4.7	**0.4%**
LI-2	81.9	**6.4%**
LI-3	84.1	**6.5%**
PDD	11.8	**0.9%**
PEFD	8.3	**0.6%**
R-1	39.9	**3.1%**
R-2	108.7	**8.4%**
R-3	314.0	**24.4%**
R-4	53.3	**4.1%**
R-5	536.0	**41.6%**
RA-1	11.7	**0.9%**
Total:	**1,287.9**	**100.0%**

Residential Development Capacity

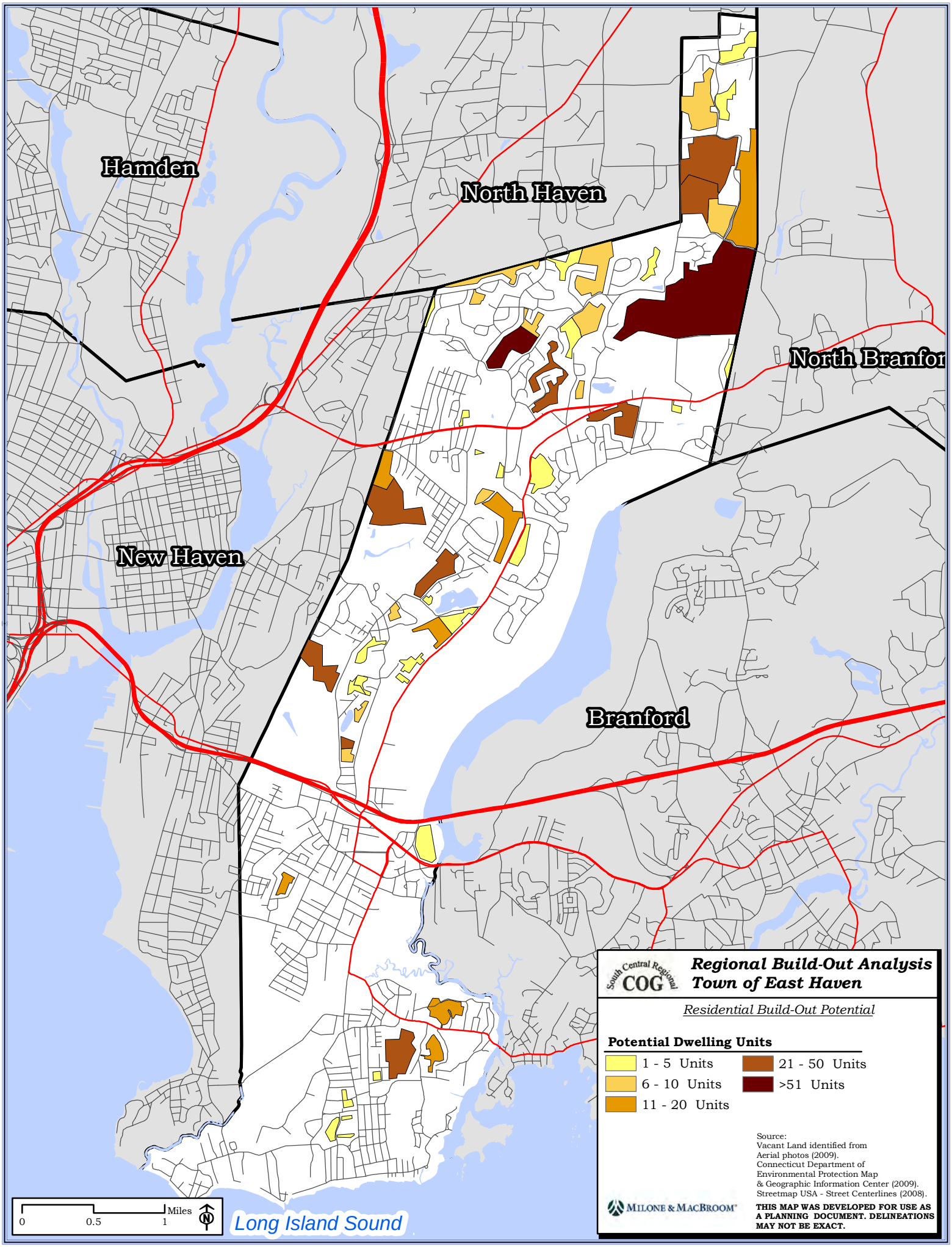
The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 725 additional dwelling units potentially could be built within the town's residential zones. Table 2 below and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.

Table 2
Residential Development Potential Under Existing Zoning Regulations

	Vacant Land			
Zone	**Gross Raw Vacant[(1)] (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units From Raw Vacant Land**
DRA-1	1,318,792	391,278	927,514	106
PDD*	516,029	425,516	90,513	0
PEFD	360,450	261,315	99,135	0
R-1	1,736,919	1,423,690	313,229	34
R-2	4,737,095	2,696,767	2,040,327	128
R-3	13,677,157	7,777,194	5,899,963	237
R-4	2,321,444	1,198,571	1,122,873	35
R-5	23,346,203	15,490,490	7,855,713	158
RA-1	509,993	364,720	145,273	27
Total:	**48,524,082**	**30,029,541**	**18,494,541**	**725**

**Number of dwelling units based on siteplan.*

[(1)] Land in its natural state that has never been developed.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South Central Regional COG
Regional Build-Out Analysis
Town of East Haven
Residential Build-Out Potential
Potential Dwelling Units
1 - 5 Units
6 - 10 Units
11 - 20 Units
21 - 50 Units
>51 Units
Source:
Vacant Land identified from
Aerial photos (2009).
Connecticut Department of
Environmental Protection Map
& Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
MILONE & MACBROOM
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Non-Residential Development Capacity

When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the town are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant land zoned for non-residential use.

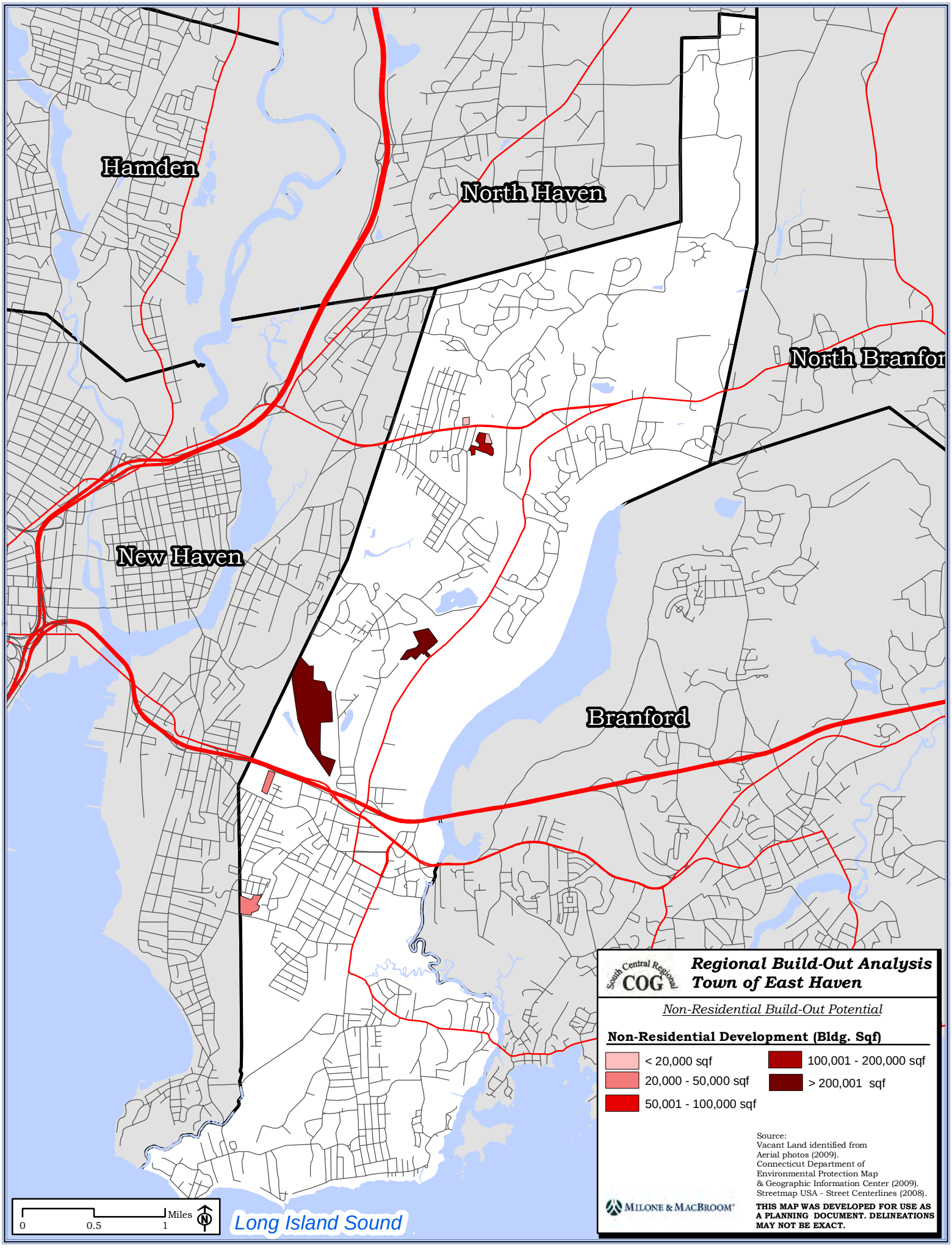
The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

Table 3
Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
CB-2	68,909	57,112	11,797	9,437
CC	71,301	48,884	22,417	17,933
LI-1	206,429	179,198	27,232	21,785
LI-2	3,567,558	2,743,355	824,203	527,490
LI-3	3,662,222	2,642,843	1,019,380	407,752
Grand Total:	**7,576,419**	**5,671,392**	**1,905,027**	**984,397**

**Based on percent lot coverage and Floor Area Ratio (FAR) for underlying zoning.*

It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables, particularly for multifamily units. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.


Hamden
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Long Island Sound
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South Central Regional COG
Regional Build-Out Analysis
Town of East Haven
Non-Residential Build-Out Potential
Non-Residential Development (Bldg. Sqf)
< 20,000 sqf
20,000 - 50,000 sqf
50,001 - 100,000 sqf
100,001 - 200,000 sqf
> 200,001 sqf
Source:
Vacant Land identified from
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Connecticut Department of
Environmental Protection Map
& Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
MILONE & MACBROOM
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Attachments

SCRCOG Build-Out Land Use Regulatory Summary Table *East Haven, CT*						
Zone	*Zone Description*	*Minimum Lot Size*	*Minimum Lot Area per dwelling unit*	*Max Lot Coverage as percentage of lot area*	*Max Bldg Height*	*FAR*
R-1	Residence	7,200	7,200	25.0%	40	0.5
R-2	Residence	12,800	12,800	25.0%	40	0.5
R-3	Residence	20,000	20,000	20.0%	40	0.4
R-4	Residence	25,000	25,000	20.0%	40	0.4
R-5	Residence	40,000	40,000	15.0%	40	0.3
RA-1	Residence	20,000	4,300	20.0%	40	0.4
RA-2	Residence	20,000	2,500	20.0%	100	0.4
CA-1	Commercial	5,000	2,500	100.0%	60	2.0
CA-2	Commercial	20,000	N/A	50.0%	40	1.0
CB-1	Commercial	5,000	N/A	50.0%	40	1.0
CB-2	Commercial	20,000	N/A	50.0%	40	1.0
CC	Commercial	20,000	N/A	50.0%	60	1.0
CD	Commercial	20,000	N/A	30.0%	40	0.5
LI-1	Light Industrial	20,000	N/A	50.0%	60	1.0
LI-2	Light Industrial	40,000	N/A	40.0%	60	0.8
LI-3	Light Industrial	80,000	N/A	30.0%	40	0.5
PEFD	Planned Elderly Facilities District	217,800	Varies	Varies	120	N/A
PEALFD	Planned Elderly Assisted Living District	435,600	Varies	25.0%	50	0.4
S-1	Shoreline Development District 1	12,800	3,600	25.0%	40	0.5
SDA	Shoreline Development Area	N/A	N/A	N/A	N/A	N/A
PDD	Planned Development District	N/A	N/A	N/A	N/A	N/A
DRA-1	Design Residence	20,000	7,000	20.0%	40	0.4

TOWN OF GUILFORD

SCRCOG Regional Build-Out Analysis – Town of Guilford

ANALYSIS OF DEVELOPMENT CAPACITY

As a component of the South Central Regional Council of Government's Unified Planning Work Program for Fiscal Year 2010, an analysis was conducted assessing the development potential for the Town of Guilford. This analysis reviewed vacant, agricultural and underutilized land for residential and non-residential uses for its physical capacity to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and gross building square footage for non-residentially zoned land. Underutilized parcels for this analysis have been defined as residentially zoned parcels that are greater than five times the minimum lot size by zone.

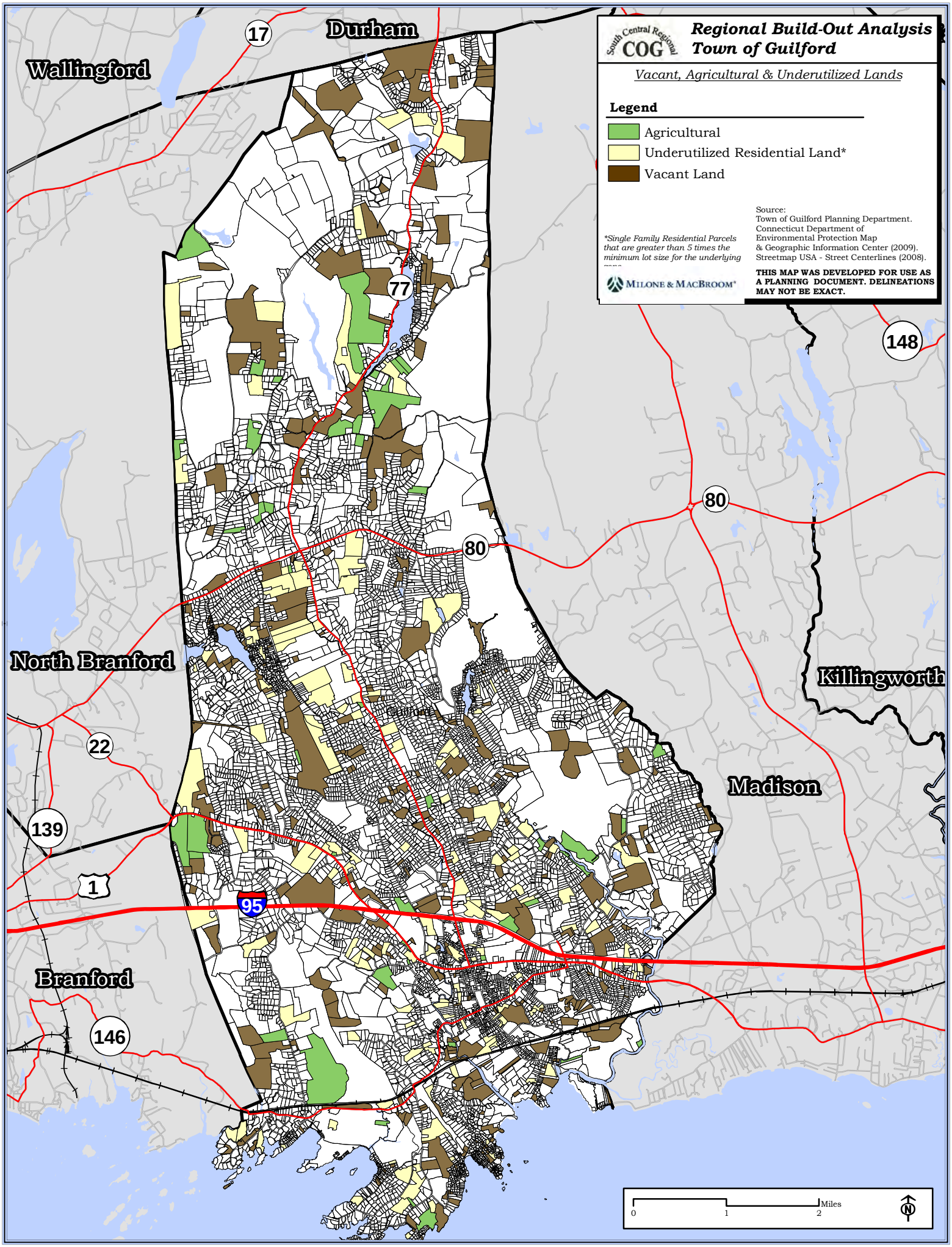
The development capacity calculated represents a reasonable scenario of growth but not an absolute buildout of every parcel in Guilford to a maximum density.

Methodology

The process to calculate development potential for vacant land involves three basic steps. First, the total amount of vacant, agricultural, and underutilized land is determined by reviewing the assessor records through the GIS parcel database. The parcels have been identified on the map titled *Vacant, Agricultural and Underutilized Lands*.

The second step of the development potential process involves calculating the developable area of the vacant, agricultural and underutilized land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slope soils (greater than 15%). These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those parcels that are large enough to be subdivided (greater than five times the minimum lot size as defined by zoning), an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that parcels were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant parcels that have an area less than the minimum lot size of the underlying zone were not included for potential dwelling units.


South Central Regional COG
Regional Build-Out Analysis
Town of Guilford
Vacant, Agricultural & Underutilized Lands
Legend
Agricultural
Underutilized Residential Land*
Vacant Land
*Single Family Residential Parcels that are greater than 5 times the minimum lot size for the underlying zone.
Milone & MacBroom
Source:
Town of Guilford Planning Department.
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
THIS MAP WAS DEVELOPED FOR USE AS A PLANNING DOCUMENT. DELINEATIONS MAY NOT BE EXACT.
Durham
Wallingford
North Branford
Killingworth
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Branford
Guilford
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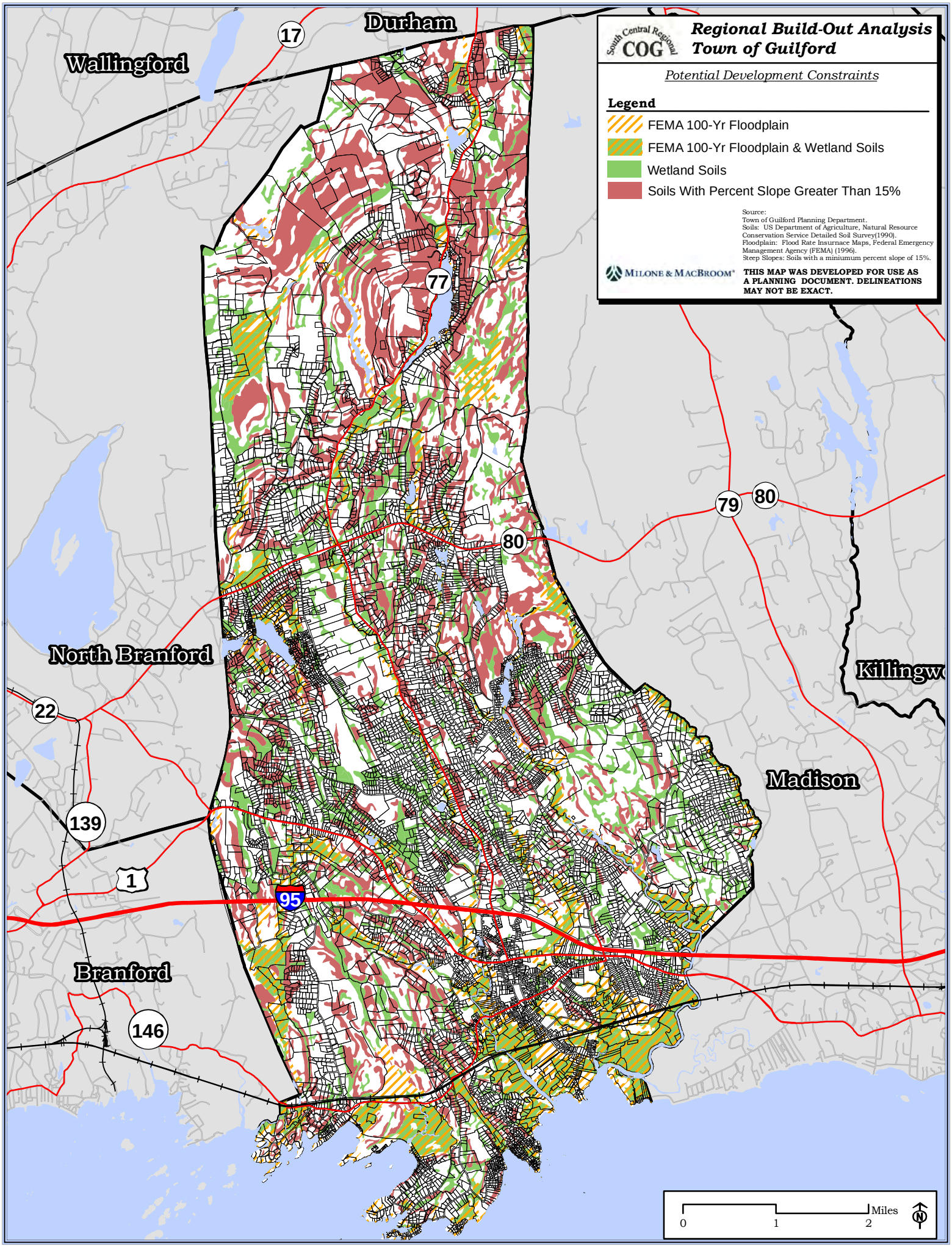
Regional Build-Out Analysis
Town of Guilford
Potential Development Constraints
Legend
FEMA 100-Yr Floodplain
FEMA 100-Yr Floodplain & Wetland Soils
Wetland Soils
Soils With Percent Slope Greater Than 15%
Source:
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Soils: US Department of Agriculture, Natural Resource Conservation Service Detailed Soil Survey(1990).
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Land Analysis

Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant, Agricultural and Underutilized Lands* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land & Agricultural Land Analysis by Zone District

Zone	Vacant & Agricultural Land (acres)	% of Total Vacant Land
C-1	120.1	**3.4%**
C-2	84.3	**2.4%**
CD	17.9	**0.5%**
I-1	10.4	**0.3%**
I-2	172.8	**4.9%**
MR-1	6.9	**0.2%**
PV	1.3	**0.0%**
PV2	11.2	**0.3%**
R-1	4.4	**0.1%**
R-2	13.8	**0.4%**
R-3	93.2	**2.6%**
R-4	7.7	**0.2%**
R-5	503.4	**14.3%**
R-6	163.0	**4.6%**
R-7	91.6	**2.6%**
R-8	2,197.1	**62.2%**
SCW	19.1	**0.5%**
TS	14.4	**0.4%**
Total:	**3,532.6**	**100.0%**

Residential Development Capacity

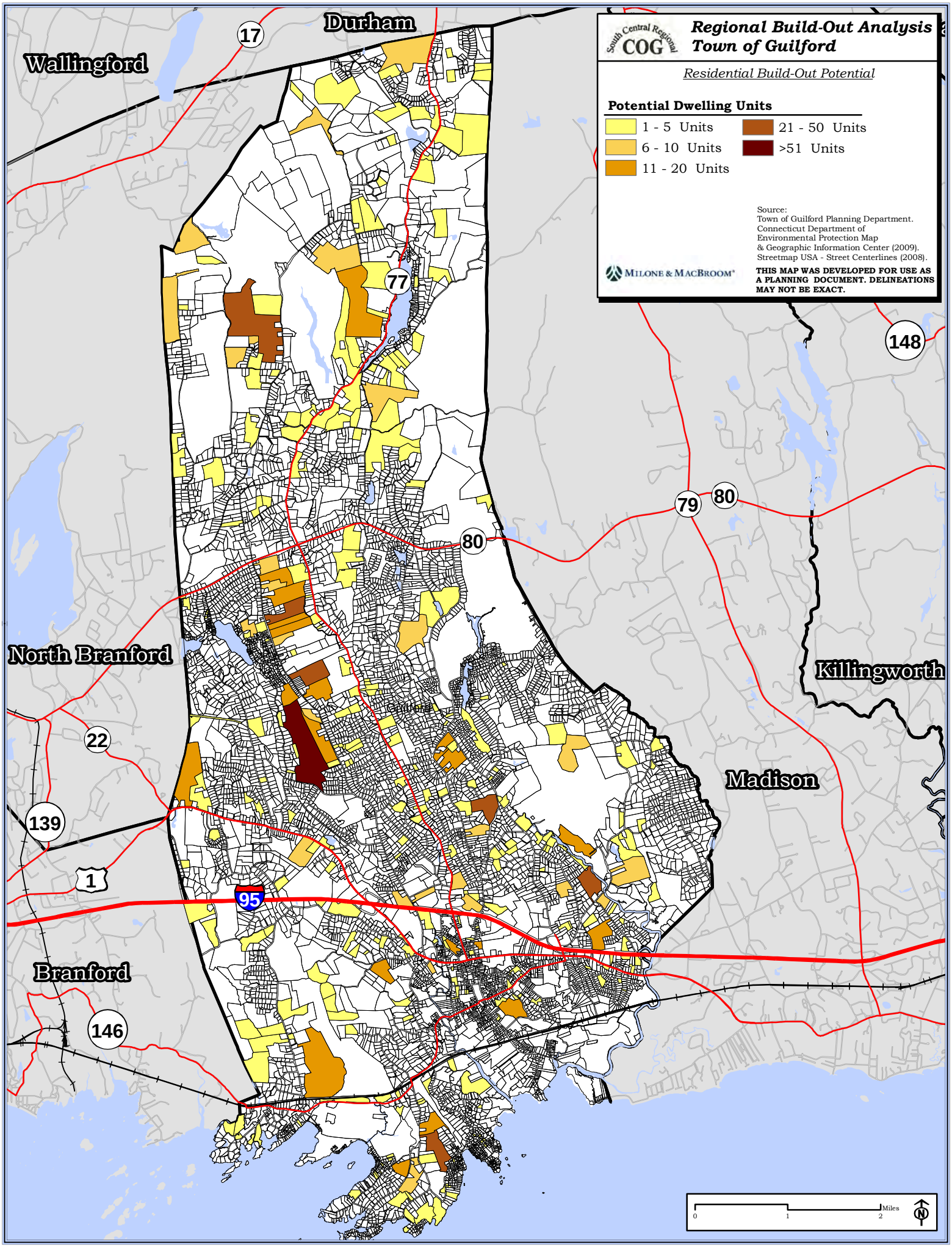
The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 1,244 additional dwelling units potentially could be built within the town's residential zones. Table 2 below and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.

Table 2
Residential Development Potential Under Existing Zoning Regulations

	Vacant & Agricultural Land				Underutilized Land				
Zone	**Gross Raw Vacant[(1)] & Agricultural Land (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units From Raw Vacant & Agricultural Land**	**Gross Land from Underutilized Lots[(2)] (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units Underutilized Lots**	**Total Potential Dwelling Units**
PV	43,758	17,851	25,907	1	0	0	0	0	1
R-1	191,723	72,581	119,142	9	970,971	411,173	559,798	38	47
R-2	600,165	325,494	274,671	21	276,408	207,487	68,921	2	23
R-3	5,466,347	3,559,665	1,906,682	72	3,808,434	2,360,297	1,448,137	39	111
R-4	334,765	193,409	141,356	3	240,464	67,097	173,367	4	7
R-5	33,001,326	14,119,273	18,882,052	371	34,219,759	15,094,137	19,125,621	321	692
R-6	7,100,989	6,139,289	961,700	14	2,664,858	2,221,249	443,610	2	16
R-7	3,988,753	2,563,527	1,425,226	14	3,993,779	1,761,225	2,232,554	20	34
R-8	107,789,805	57,051,840	50,737,966	250	26,570,989	10,794,443	15,776,546	63	313
Total:	**158,517,630**	**84,042,930**	**74,474,701**	**755**	**72,745,662**	**32,917,109**	**39,828,553**	**489**	**1,244**

[(1)] *Land in its natural state that has never been developed.*

[(2)] *Lots that have a single family residence and are greater than 5 times the minimum lot size of the underlying zone.*


Regional Build-Out Analysis
Town of Guilford
Residential Build-Out Potential
Potential Dwelling Units
1 - 5 Units
6 - 10 Units
11 - 20 Units
21 - 50 Units
>51 Units
Source:
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Non-Residential Development Capacity

When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the town are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant & agricultural parcels zoned for non-residential use.

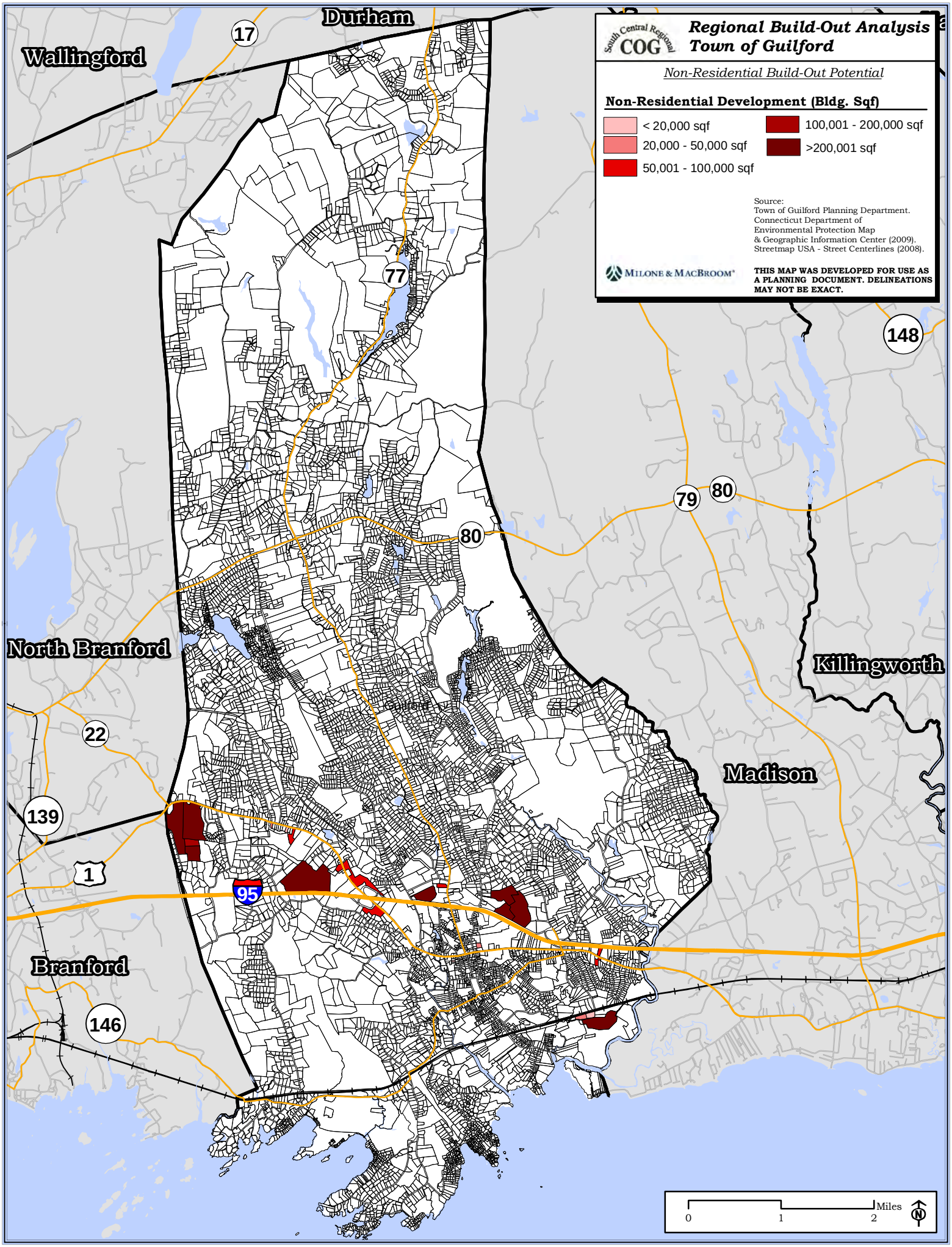
The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

Table 3
Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
C-1	5,229,594	2,621,962	2,607,631	3,483,796
C-2	3,673,570	2,712,353	961,217	638,248
CD	778,730	110,936	667,794	0
I-1	453,879	309,957	143,922	115,137
I-2	7,525,154	5,218,621	2,306,533	1,839,241
MR-1	300,126	300,126	0	0
PV	14,487	0	14,487	9,619
PV2	488,394	390,924	97,470	64,483
SCW	830,054	376,120	453,934	90,787
TS	628,998	153,594	475,404	315,669
Grand Total:	**19,922,988**	**12,194,594**	**7,728,393**	**6,556,980**

**Based on percent lot coverage and Floor Area Ratio (FAR) for underlying zoning.*

It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables, particularly for multifamily units. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.


Regional Build-Out Analysis
Town of Guilford
Non-Residential Build-Out Potential
Non-Residential Development (Bldg. Sqf)
< 20,000 sqf
20,000 - 50,000 sqf
50,001 - 100,000 sqf
100,001 - 200,000 sqf
>200,001 sqf
Source:
Town of Guilford Planning Department.
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Environmental Protection Map
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Durham
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Killingworth
Madison
Branford
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Attachments

SCRCOG Build-Out Land Use Regulatory Summary Table

Guilford, CT

Zoning	*Zone Description*	*Minimum Lot Size*	*Minimum Lot Area per dwelling unit*	*Max Lot Coverage as percentage of lot area*	*Max Bldg Height*	*FAR*
R-1	Residential	10,000	5,000	15.0%	35	N/A
R-2	Residential	10,000	10,000	15.0%	35	N/A
R-3	Residential	20,000	20,000	20.0%	35	N/A
R-4	Residential	30,000	30,000	20.0%	35	N/A
R-5	Residential	40,000	40,000	20.0%	35	N/A
R-6	Residential	60,000	60,000	15.0%	35	N/A
R-7	Residential	80,000	80,000	10.0%	35	N/A
R-8	Residential	160,000	160,000	5.0%	40	N/A
RS-1	Residential	10,000	10,000	15.0%	35	N/A
C-1	Commercial	5,000	5,000	50.0%	40	1.67
C-2	Commercial	10,000	Varies	25.0%	40	0.83
C-3	Commercial	20,000	Varies	25.0%	40	0.83
C-4	Commercial	20,000	20,000	25.0%	40	0.83
C-2M	Commercial	10,000	10,000	25.0%	40	0.83
C-D	Commercial	Varies	Varies	Varies	Varies	N/A
PV	Post Road Village District	10,000	5,445	25.0%	35	0.73
PV2	Post Road Village District	20,000	7,260	25.0%	40	0.83
TS	Transitional and Service District	20,000	5,445	25.0%	40	0.83
SC	Shopping Center	200,000	N/A	25.0%	40	0.83
MR-1	Marine Recreational	80,000	80,000	20.0%	40	0.67
I-1	Industrial	40,000	N/A	30.0%	40	1.00
I-2	Industrial	120,000	N/A	35.0%	40	1.17
WS		N/A	N/A	10.0%	N/A	N/A
GW		N/A	N/A	50.0%	N/A	N/A

TOWN OF HAMDEN

SCRCOG Regional Build-Out Analysis - Town of Hamden

ANALYSIS OF DEVELOPMENT CAPACITY

As a component of the South Central Regional Council of Government's Unified Planning Work Program for Fiscal Year 2010, an analysis was conducted assessing the development potential for the Town of Hamden. This analysis reviewed vacant, agricultural and underutilized land for residential and non-residential uses for its physical capacity to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and gross building square footage for non-residentially zoned land. Underutilized parcels for this analysis have been defined as residentially zoned parcels that are greater than five times the minimum lot size by zone.

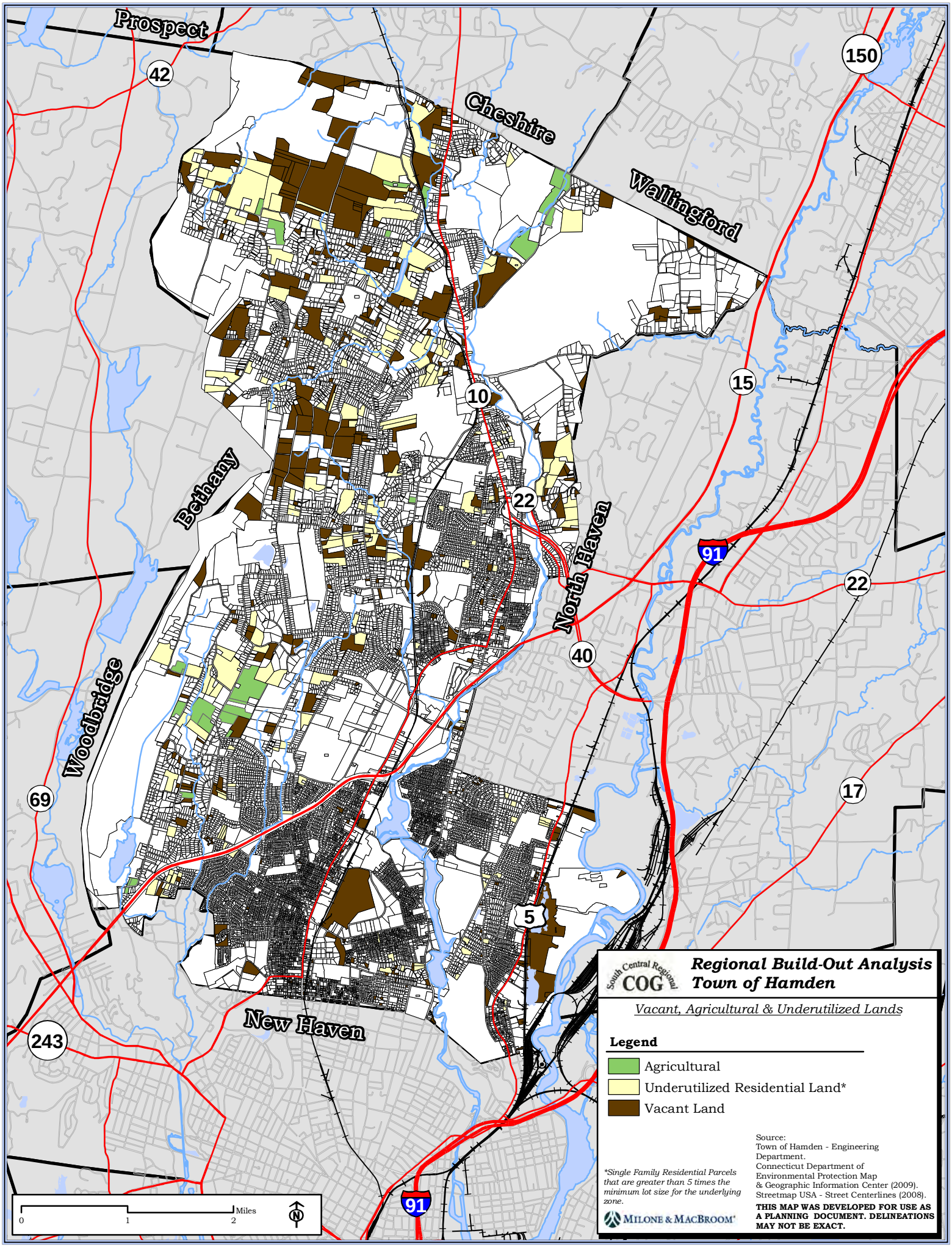
The development capacity calculated represents a reasonable scenario of growth but not an absolute buildout of every parcel in Hamden to a maximum density.

Methodology

The process to calculate development potential for vacant land involves three basic steps. First, the total amount of vacant, agricultural, and underutilized land is determined by reviewing the assessor records through the GIS parcel database. The parcels have been identified on the map titled *Vacant, Agricultural and Underutilized Lands*.

The second step of the development potential process involves calculating the developable area of the vacant, agricultural and underutilized land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slope soils (greater than 15%). These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those parcels that are large enough to be subdivided (greater than five times the minimum lot size as defined by zoning), an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that parcels were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant parcels that have an area less than the minimum lot size of the underlying zone were not included for potential dwelling units.


Prospect
Cheshire
Wallingford
Bethany
Woodbridge
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Regional Build-Out Analysis
Town of Hamden
Vacant, Agricultural & Underutilized Lands
Legend
Agricultural
Underutilized Residential Land*
Vacant Land
*Single Family Residential Parcels that are greater than 5 times the minimum lot size for the underlying zone.
Source:
Town of Hamden - Engineering Department.
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
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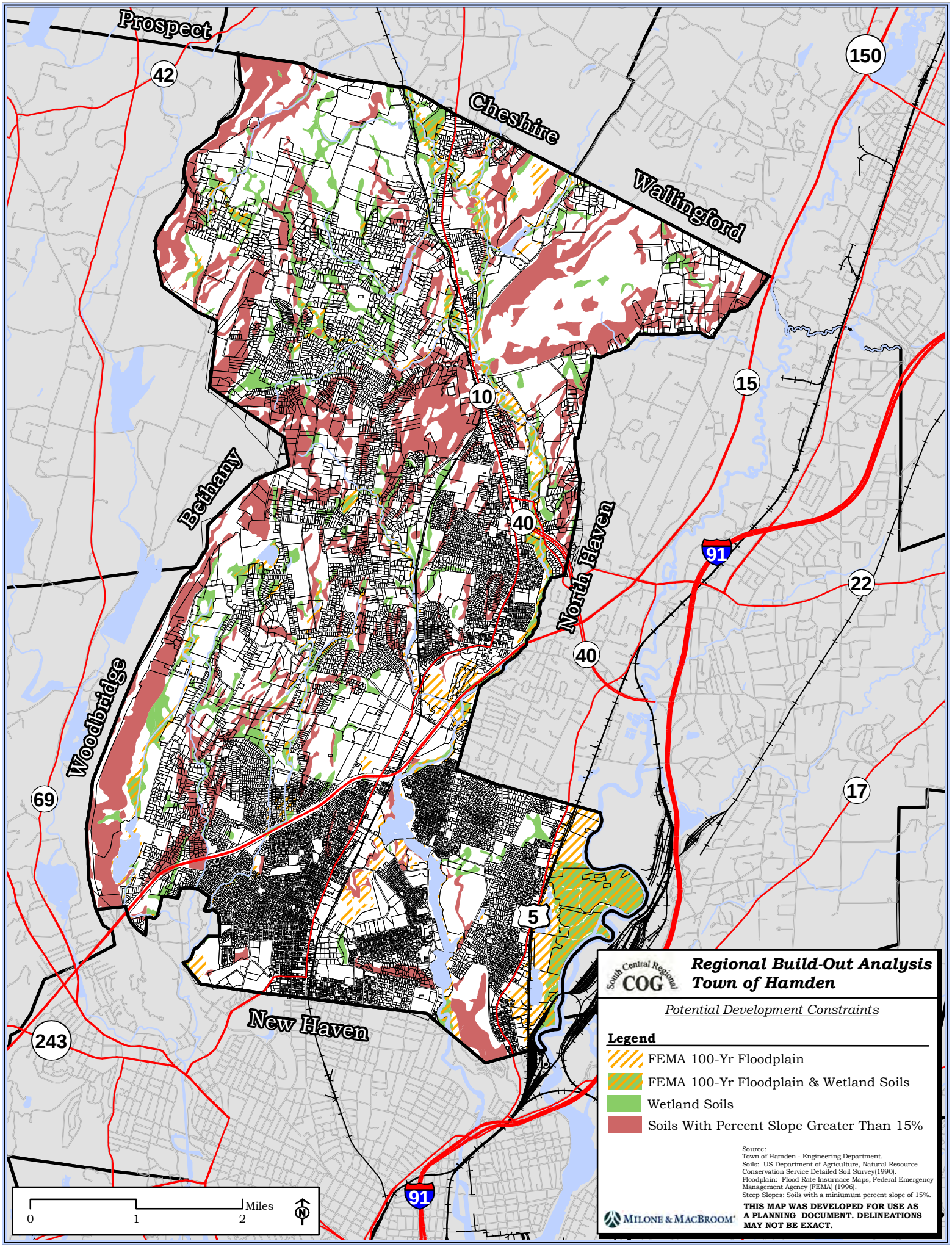
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Regional Build-Out Analysis
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South Central Regional COG
Potential Development Constraints
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FEMA 100-Yr Floodplain
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Soils With Percent Slope Greater Than 15%
Source:
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Soils: US Department of Agriculture, Natural Resource Conservation Service Detailed Soil Survey(1990).
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Land Analysis

Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant, Agricultural and Underutilized Lands* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land & Agricultural Land Analysis by Zone District

Zone	Vacant & Agricultural Land (acres)	% of Total Vacant Land
B-1	1	0.0%
B-2	8	0.4%
CDD-1	313	14.5%
CDD-2	7	0.3%
CDD-4	2	0.1%
M-1	32	1.5%
R-1	393	18.2%
R-2	1,124	52.2%
R-3	177	8.2%
R-4	81	3.7%
R-5	18	0.8%
Total:	**2,155.8**	**100.0%**

Residential Development Capacity

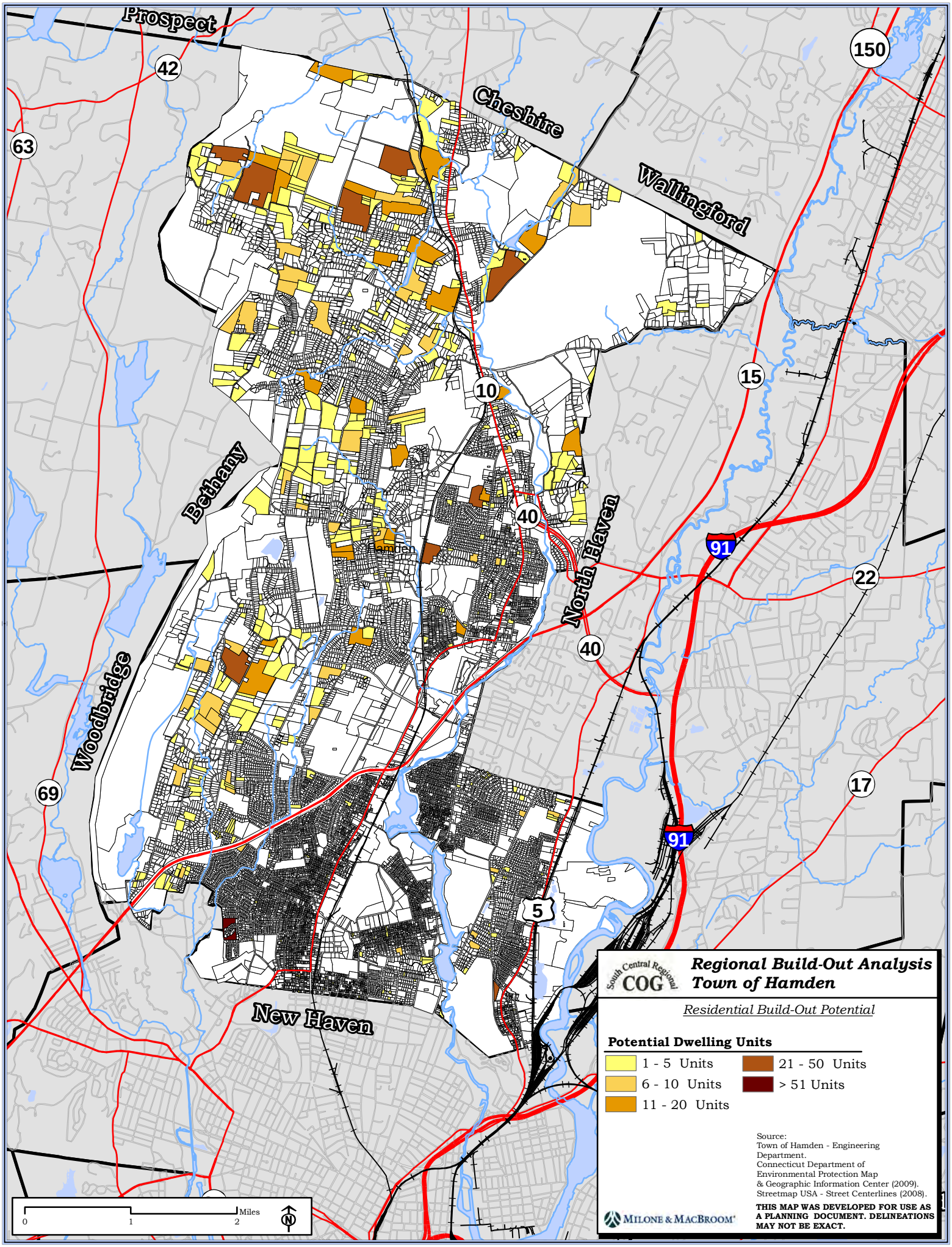
The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 1,706 additional dwelling units potentially could be built within the town's residential zones. Table 2 and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.

Table 2
Residential Development Potential Under Existing Zoning Regulations

	Vacant & Agricultural Land				Underutilized Land				
Zone	Gross Raw Vacant[(1)] & Agricultural Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Dwelling Units From Raw Vacant & Agricultural Land	Gross Land from Underutilized Lots[(2)] (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Dwelling Units Underutilized Lots	Total Potential Dwelling Units
R-1	15,469,659	6,455,591	9,014,067	91	3,138,634	989,075	2,149,559	16	107
R-2	36,110,439	13,357,086	22,753,351	462	30,356,226	9,914,548	20,441,678	354	816
R-3	6,911,499	3,452,052	3,459,447	143	7,172,754	3,187,476	3,985,276	128	271
R-4	3,162,754	1,078,555	2,084,199	169	4,284,873	702,874	3,582,002	239	408
R-5	780,479	33,816	746,661	100	39,119	0	39,119	4	104
Total:	**62,434,830**	**24,377,100**	**38,057,725**	**965**	**44,991,606**	**14,793,973**	**30,197,634**	**741**	**1,706**

(1) Land in its natural state that has never been developed.

(2) Lots that have a single family residence and are greater than 5 times the minimum lot size of the underlying zone.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Non-Residential Development Capacity

When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the town are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant & agricultural parcels zoned for non-residential use.

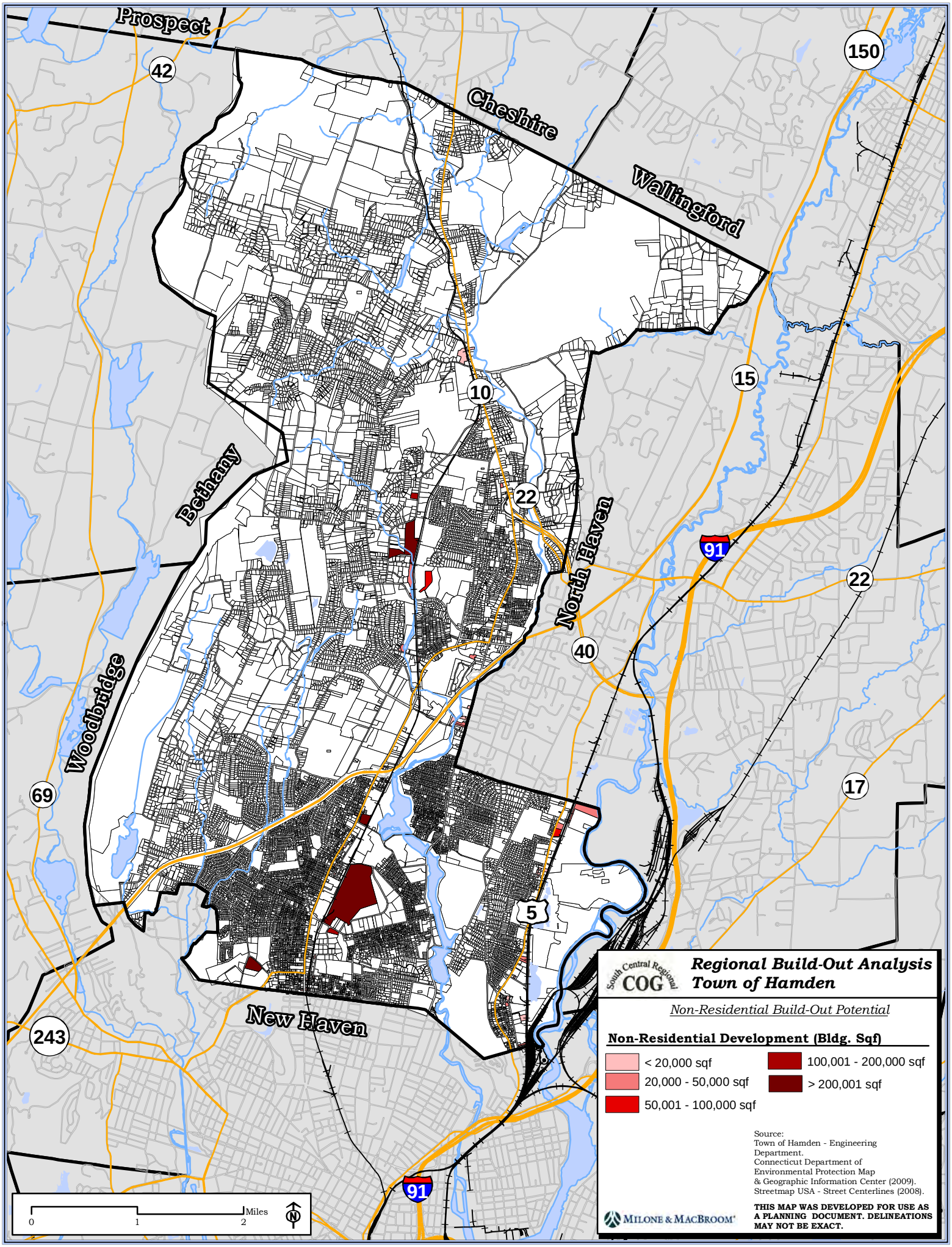
The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

Table 3
Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
B-1	70,811	0	70,810	62,313
B-2	427,587	259,317	168,269	148,076
CDD-1	6,608,990	3,498,177	1,685,765	1,972,344
CDD-2	285,484	192,076	93,408	58,847
CDD-4	69,639	10,287	59,352	59,352
M-1	1,626,639	941,041	685,599	911,847
Grand Total:	**9,089,151**	**4,900,898**	**2,763,203**	**3,212,779**

**Based on percent lot coverage and Floor Area Ratio (FAR) for underlying zoning.*

It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables, particularly for multifamily units. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.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Non-Residential Build-Out Potential
Non-Residential Development (Bldg. Sqf)
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20,000 - 50,000 sqf
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> 200,001 sqf
Source:
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Attachments

SCRCOG Build-Out Land Use Regulatory Summary Table *Hamden, CT*						
Zoning	*Zone Description*	*Minimum Lot Size*	*Minimum Lot Area per dwelling unit*	*Max Lot Coverage as percentage of lot area*	*Max Bldg Height*	*FAR*
R-1	Residential	80,000	80,000	15.0%	35	N/A
R-2	Residential	40,000	40,000	15.0%	35	N/A
R-3	Residential	20,000	20,000	20.0%	35	N/A
R-4	Residential	10,000	10,000	25.0%	35	N/A
R-5	Residential	6,000	3,000	30.0%	35	N/A
B-1	Business	5,000	N/A	30.0%	35	0.88
B-2	Business	5,000	N/A	30.0%	35	0.88
M-1	Manufacturing	20,000	N/A	40.0%	40	1.33
CDD-1[(1)]	Controlled Development	5,000	N/A	35.0%	40	1.17
CDD-2[(1)]	Controlled Development	20,000	10,000*	25.0%*	30*	0.63
CDD-3	Controlled Development	5,000	N/A	30.0%	40	1.00
CDD-4	Controlled Development	5,000	N/A	30.0%	40	1.00
TG	Town Green	N/A	N/A	N/A	N/A	N/A
OSD	Open Space Development	435,600	Varies	Varies	Varies	N/A

[(1)] Minimum lot size varies (5,000 sqf, 10,000 sqf, 20,000 sqf & 40,000sqf) depending on Group. For this build-out analysis the requirements for Group A uses will be used.

TOWN OF MADISON

SCRCOG Regional Build-Out Analysis - Town of Madison

ANALYSIS OF DEVELOPMENT CAPACITY

As a component of the South Central Regional Council of Government's Unified Planning Work Program for Fiscal Year 2010, an analysis was conducted assessing the development potential for the Town of Madison. This analysis reviewed vacant, agricultural and underutilized land for residential and non-residential uses for its physical capacity to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and gross building square footage for non-residentially zoned land. Underutilized parcels for this analysis have been defined as residentially zoned parcels that are greater than five times the minimum lot size by zone.

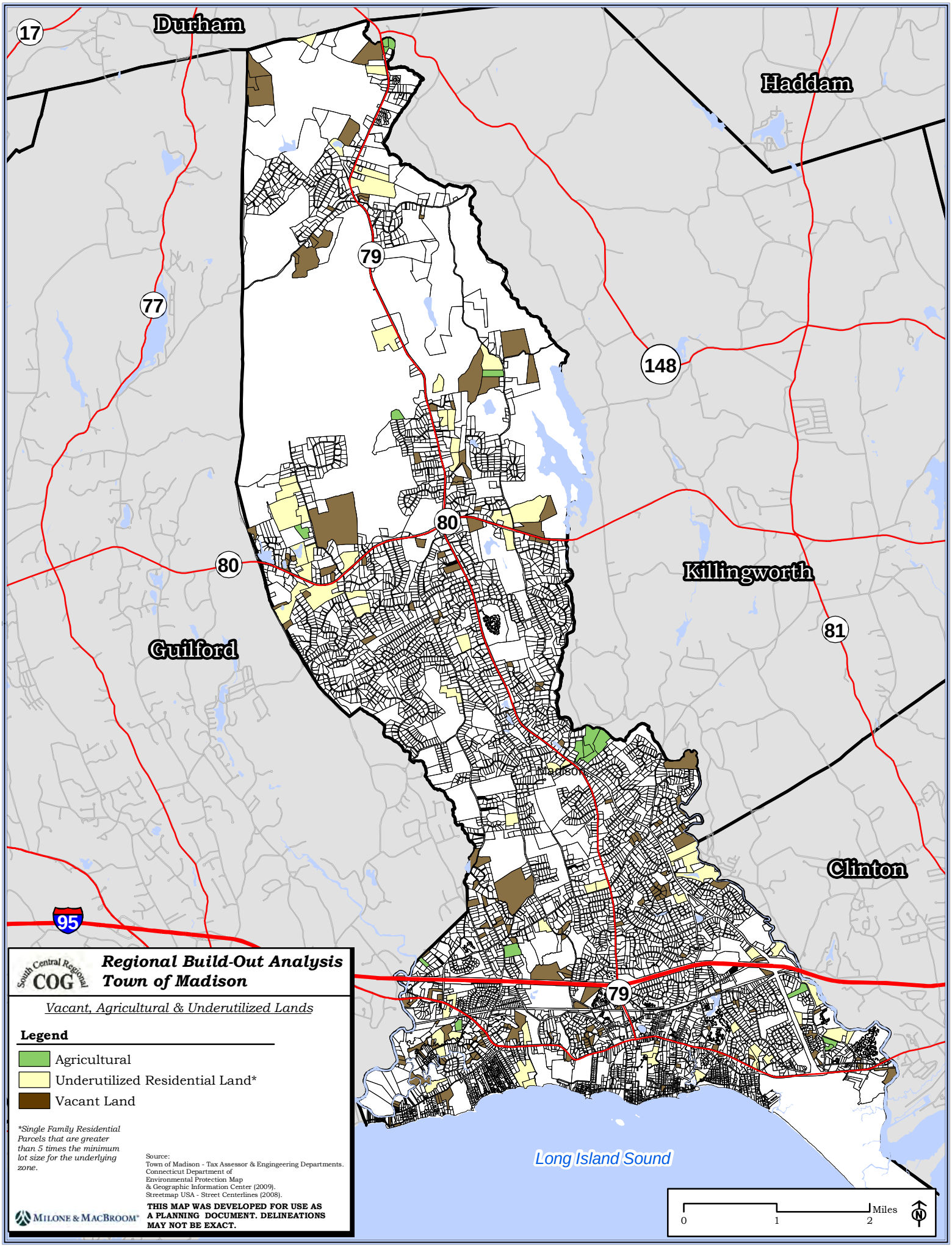
The development capacity calculated represents a reasonable scenario of growth but not an absolute buildout of every parcel in Madison to a maximum density.

Methodology

The process to calculate development potential for vacant land involves three basic steps. First, the total amount of vacant, agricultural, and underutilized land is determined by reviewing the assessor records through the GIS parcel database. The parcels have been identified on the map titled *Vacant, Agricultural and Underutilized Lands*.

The second step of the development potential process involves calculating the developable area of the vacant, agricultural and underutilized land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slope soils (greater than 15%). These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those parcels that are large enough to be subdivided (greater than five times the minimum lot size as defined by zoning), an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that parcels were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant parcels that have an area less than the minimum lot size of the underlying zone were not included for potential dwelling units.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Regional Build-Out Analysis
Town of Madison
Vacant, Agricultural & Underutilized Lands
Legend
Agricultural
Underutilized Residential Land*
Vacant Land
*Single Family Residential Parcels that are greater than 5 times the minimum lot size for the underlying zone.
Source:
Town of Madison - Tax Assessor & Engingeering Departments.
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
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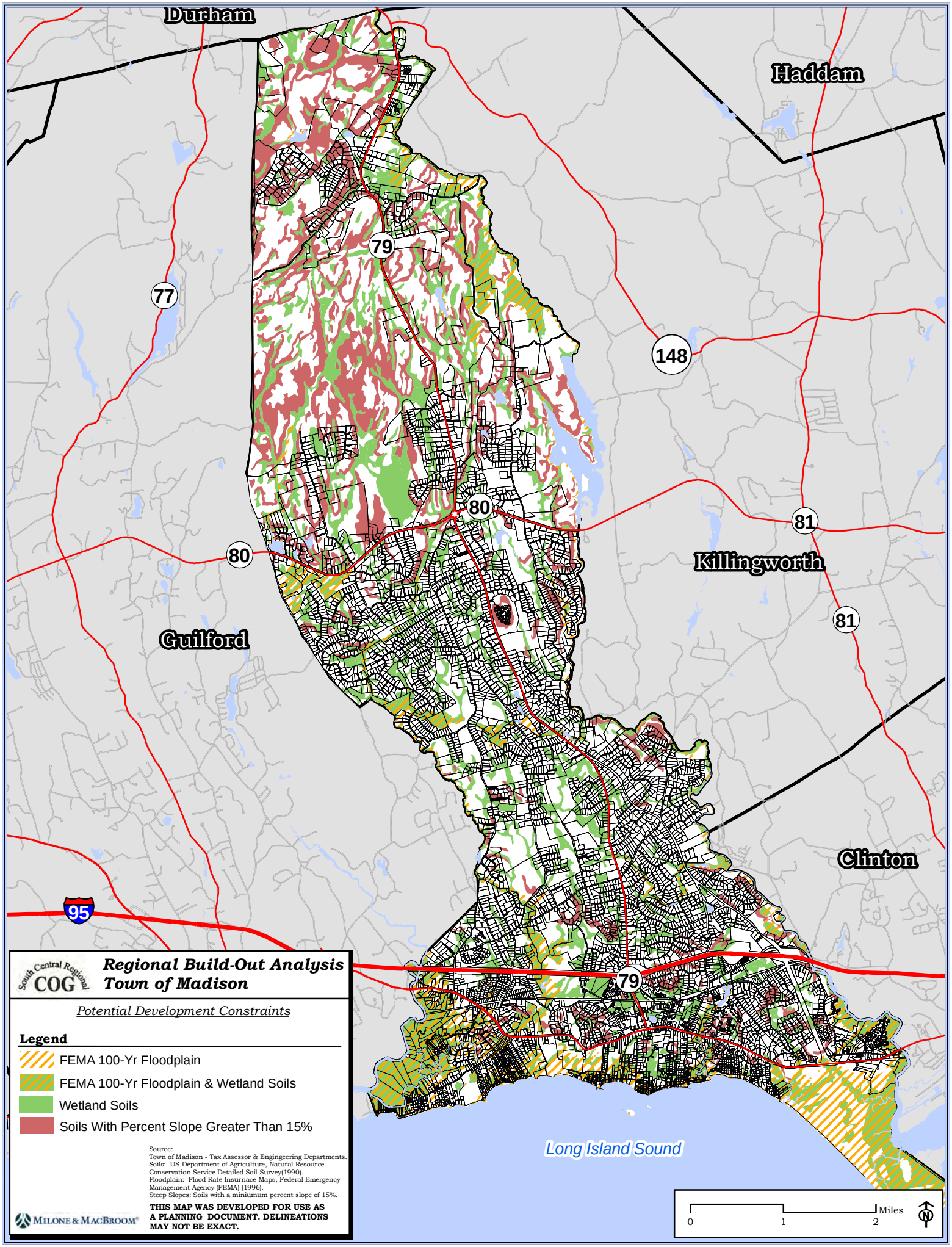
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Land Analysis

Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant, Agricultural and Underutilized Lands* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land & Agricultural Land by Zoning District

Zone	Vacant & Agricultural Land (acres)	% of Total Vacant Land
AHD/OSC	3.2	**0.2%**
CB-1	9.5	**0.6%**
LI	0.8	**0.0%**
OSCD	20.7	**1.2%**
R-1	135.8	**8.2%**
R-2	164.9	**9.9%**
R-S	4.0	**0.2%**
RU-1	1,121.0	**67.5%**
RU-2	200.7	**12.1%**
Total:	**1,660.6**	**100.0%**

Residential Development Capacity

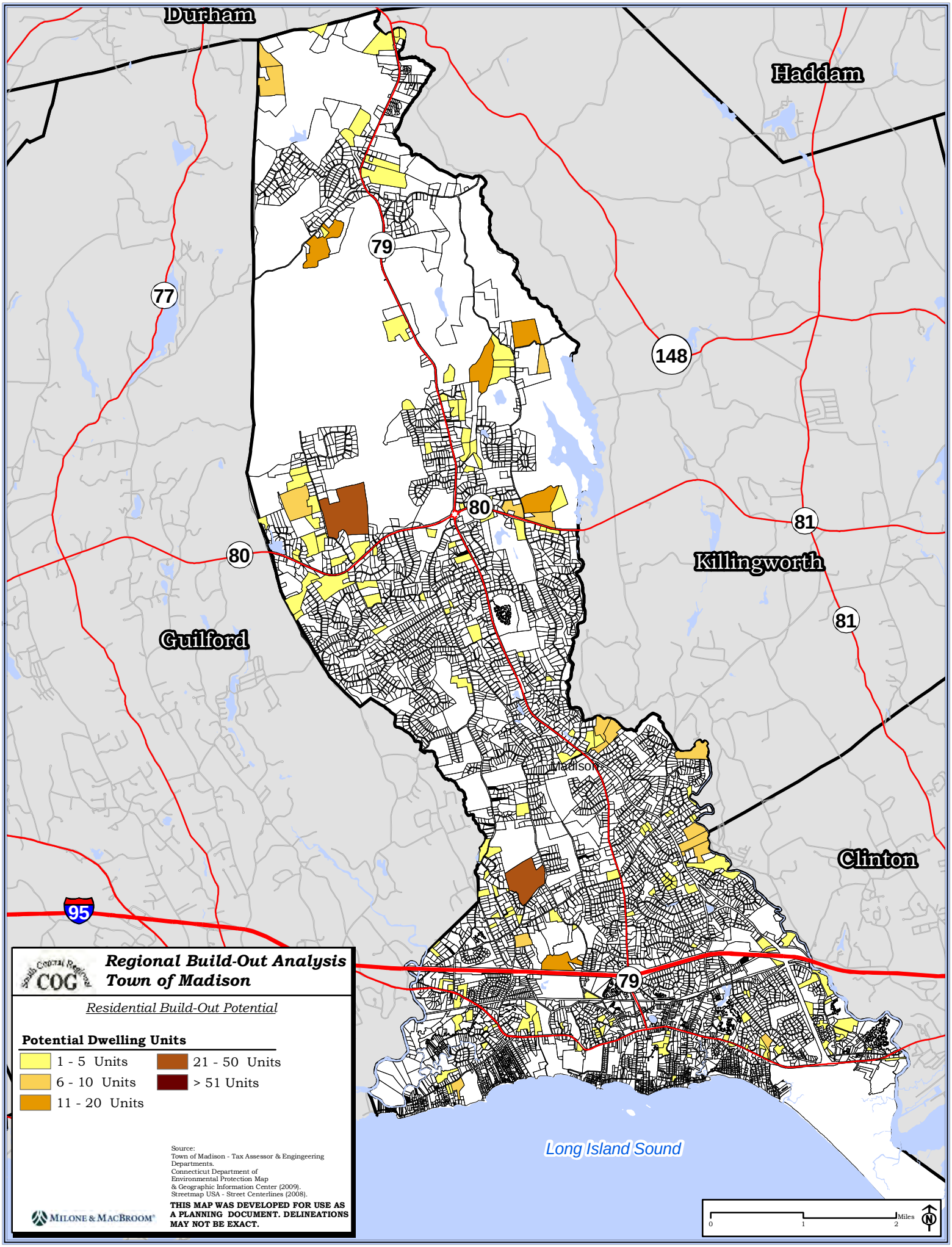
The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 867 additional dwelling units potentially could be built within the town's residential zones. Table 2 below and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.

Table 2
Residential Development Potential Under Existing Zoning Regulations

	Vacant & Agricultural Land				Underutilized Land				
Zone	**Gross Raw Vacant[(1)] & Agricultural Land (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units From Raw Vacant & Agricultural Land**	**Gross Land from Underutilized Lots[(2)] (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units Underutilized Lots**	**Total Potential Dwelling Units**
R-1	5,528,579	3,792,816	1,735,763	34	3,387,420	1,718,276	1,669,144	25	59
R-2	3,631,076	1,931,978	1,699,098	34	3,669,078	2,614,043	1,055,035	9	43
RU-1	38,314,084	16,823,600	21,490,484	213	25,697,839	12,156,828	13,541,011	105	318
RU-2	7,248,777	2,476,567	4,772,210	67	4,970,734	1,878,350	3,092,384	32	99
Total:	**54,722,516**	**25,024,961**	**29,697,555**	**348**	**37,725,071**	**18,367,497**	**19,357,574**	**171**	**519**

(1) Land in its natural state that has never been developed.

(2) Lots that have a single family residence and are greater than 5 times the minimum lot size of the underlying zone.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Non-Residential Development Capacity

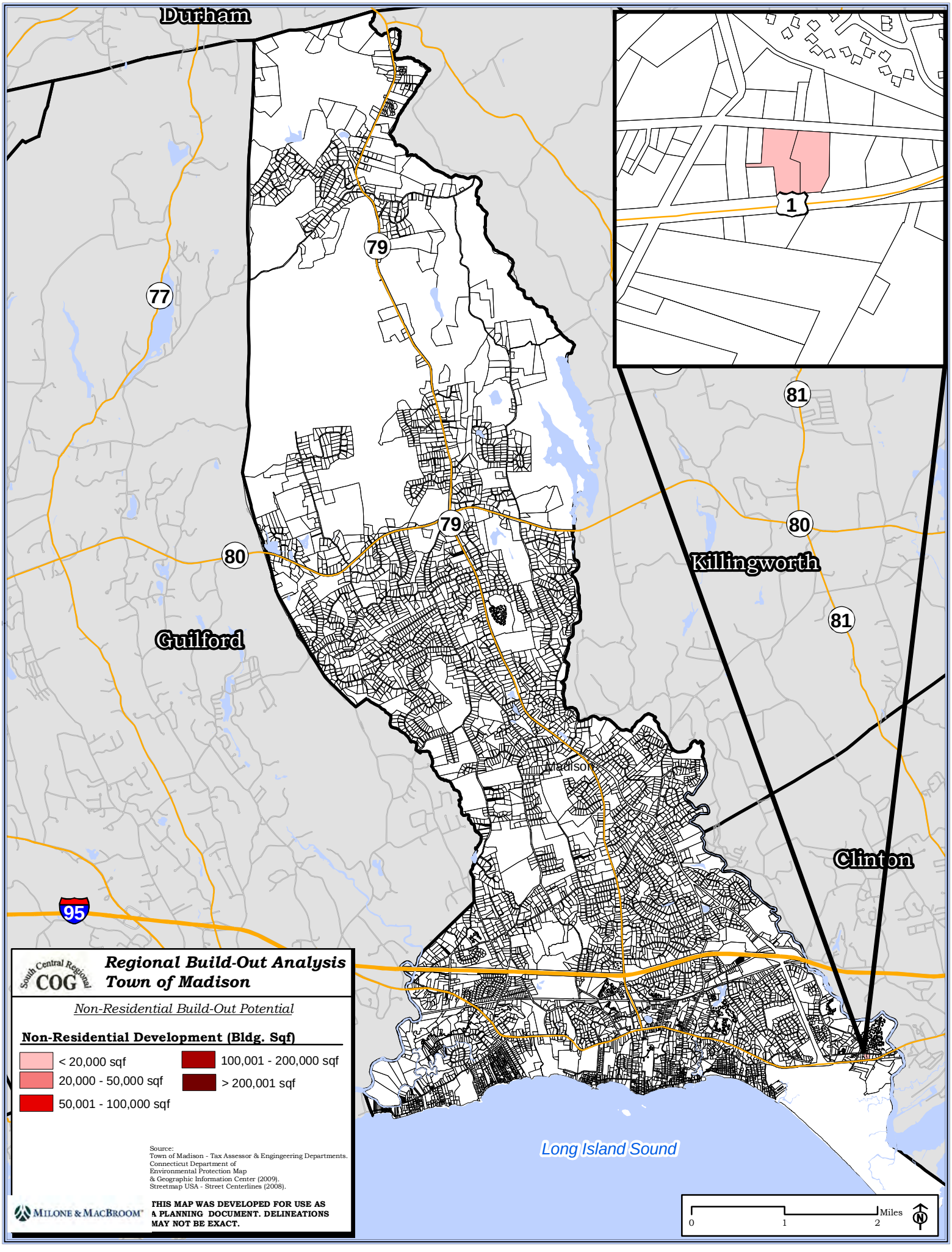
When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the town are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant & agricultural parcels zoned for non-residential use. The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

Table 3
Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
CB-1	394,351	303,232	91,119	36,448
LI	30,216	29,947	270	287
Grand Total:	**424,568**	**333,179**	**91,388**	**36,735**

**Based on percent lot coverage and Floor Area Ratio (FAR) for underlying zoning.*

It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.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Attachments

SCRCOG Build-Out Land Use Regulatory Summary Table

Madison, CT

Zone	*Zone Description*	*Minimum Lot Size*	*Minimum Lot Area per dwelling unit*	*Minimum Buildable Area per lot*	*Max Bldg.Coverage as percentage of lot area*	*Max Bldg Height**	*FAR*
AHD	Affordable Housing District	130,680	Varies	N/A	20.0%	30	N/A
AHD/OSC	Affordable Housing/Open Space Conservation District	217,800	Varies	N/A	N/A	N/A	N/A
CA-1	Commercial	20,000	20,000	N/A	20.0%	30	0.50
CB-1	Commercial	20,000	20,000	N/A	20.0%	30	0.50
CB-2	Commercial	10,000	10,000	N/A	33.3%	30	0.83
D	Downtown District	20,000	Varies	N/A	25.0%	30	0.63
DC	Downtown Commercial District	20,000	Varies	N/A	30.0%	30	0.75
DW	Downtown Water Restriction District	20,000	Varies	N/A	30.0%	30	0.75
HCFD	Health Care Facilities District	348,480	2,500**	N/A	15.0%	30	0.38
HOD	Housing Opportunity District	174,240	Varies	N/A	20.0%	30	0.50
LI	Light Industrial District	30,000	N/A	N/A	40.0%	40	1.33
OSCD	Open Space Conservation District	217,800	Varies	Varies	10.0%	30	0.25
R-1	Single Family Residence	40,000	40,000	32,000	10.0%	30	0.25
R-2	Single Family Residence	40,000	40,000	32,000	10.0%	30	0.25
RS	Rural Shopping District	120,000	Varies	N/A	20.0%	30	0.50
RU-1	Rural Residence	80,000	80,000	48,000	10.0%	30	0.25
RU-2	Rural Residence	60,000	60,000	40,000	10.0%	30	0.25

* Building height is reduced for narrow lots (90 feet or less in width) by 1 foot in height per 10 feet less than 90 feet in width, to a minimum height of 24 feet.

** Per bed. Based upon lot area minus wetlands.

CITY OF MERIDEN

SCRCOG Regional Build-Out Analysis – City of Meriden

ANALYSIS OF DEVELOPMENT CAPACITY

As a component of the South Central Regional Council of Government's Unified Planning Work Program for Fiscal Year 2010, an analysis was conducted assessing the development potential for the City of Meriden. This analysis reviewed vacant, agricultural and underutilized land for residential and non-residential uses for its physical capacity to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and gross building square footage for non-residentially zoned land. Underutilized parcels for this analysis have been defined as residentially zoned parcels that are greater than five times the minimum lot size by zone.

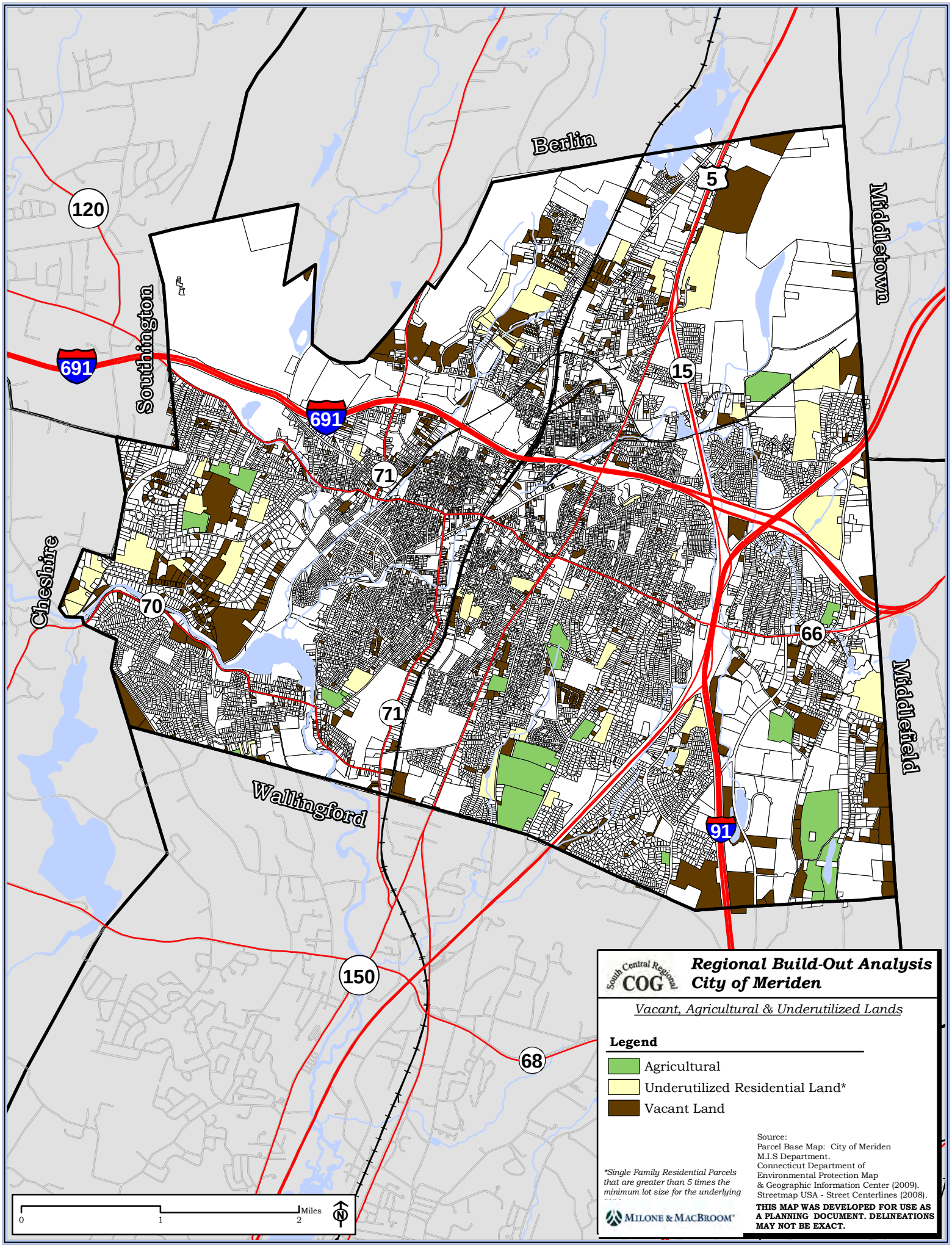
The development capacity calculated represents a reasonable scenario of growth but not an absolute buildout of every parcel in Meriden to a maximum density.

Methodology

The process to calculate development potential for vacant land involves three basic steps. First, the total amount of vacant, agricultural, and underutilized land is determined by reviewing the assessor records through the GIS parcel database. The parcels have been identified on the map titled *Vacant, Agricultural and Underutilized Lands*.

The second step of the development potential process involves calculating the developable area of the vacant, agricultural and underutilized land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slopes (greater than 20%). Steep slopes were calculated from the City's 2' contour lines using ESRI Spatial Analyst extension. These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those parcels that are large enough to be subdivided (greater than five times the minimum lot size as defined by zoning), an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that parcels were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant parcels that have an area less than the minimum lot size of the underlying zone were not included for potential dwelling units.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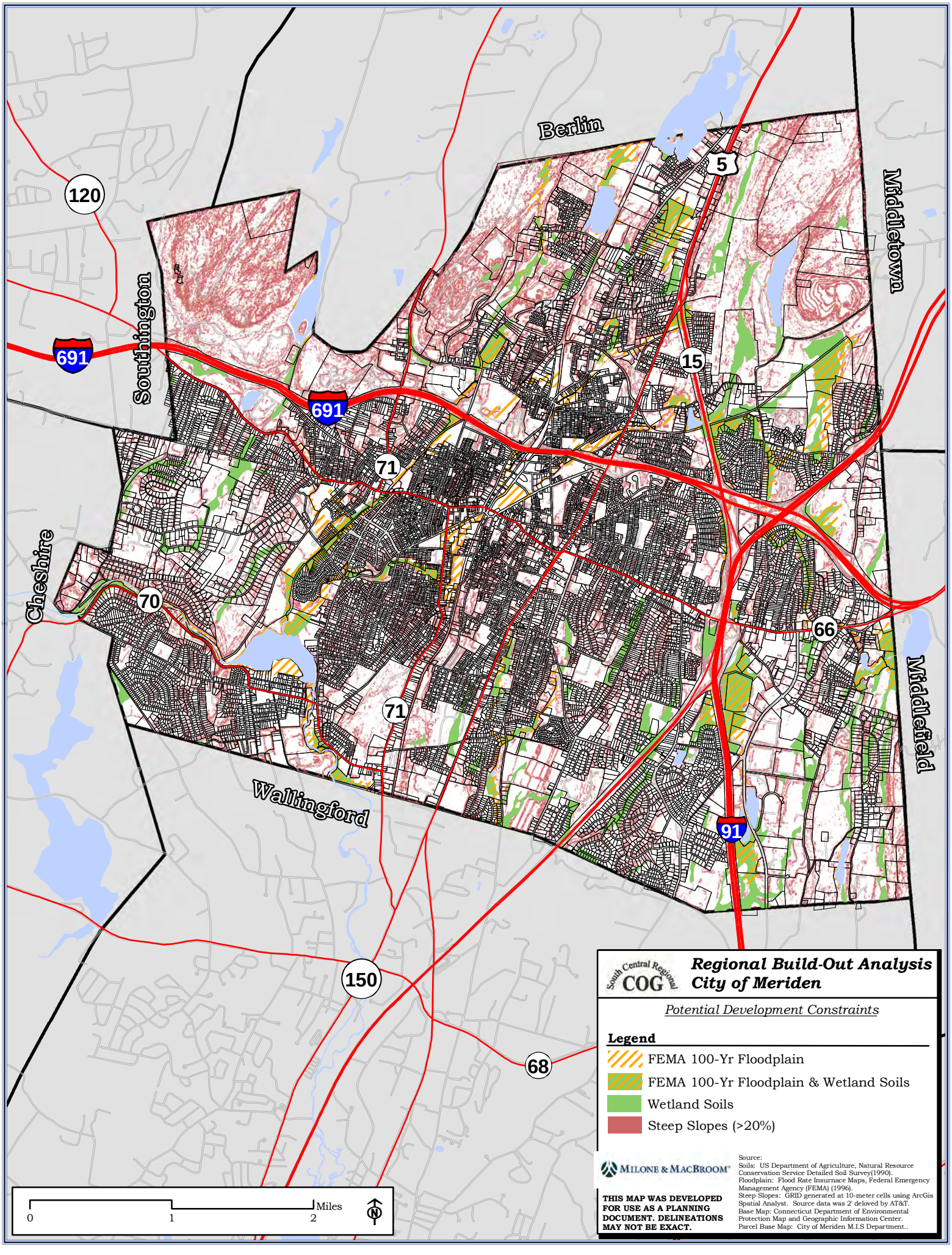
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Steep Slopes (>20%)
Milone & MacBroom
THIS MAP WAS DEVELOPED FOR USE AS A PLANNING DOCUMENT. DELINEATIONS MAY NOT BE EXACT.
Source:
Soils: US Department of Agriculture, Natural Resource Conservation Service Detailed Soil Survey(1990).
Floodplain: Flood Rate Insurnace Maps, Federal Emergency Management Agency (FEMA) (1996).
Steep Slopes: GRID generated at 10-meter cells using ArcGis Spatial Analyst. Source data was 2' deloved by AT&T.
Base Map: Connecticut Department of Environmental Protection Map and Geographic Information Center.
Parcel Base Map: City of Meriden M.I.S Department..
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Land Analysis

Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant, Agricultural and Underutilized Lands* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land & Agricultural Land Analysis by Zone District

Zone	Vacant & Agricultural Land (acres)	% of Total Vacant Land
C-1/C-1A	7.8	**0.5%**
C-2	47.0	**3.0%**
C-3	140.4	**9.1%**
C-4	0.3	**0.0%**
M-1	38.9	**2.5%**
M-2	32.0	**2.1%**
M-3	32.0	**2.1%**
M-4	71.6	**4.6%**
NCDD	0.4	**0.0%**
PDD	24.9	**1.6%**
PRD	8.9	**0.6%**
R-1	312.5	**20.1%**
R-2	47.4	**3.1%**
R-3	25.4	**1.6%**
R-4	5.3	**0.3%**
R-R	503.4	**32.5%**
RDD	50.1	**3.2%**
S-R	202.7	**13.1%**
Total:	**1,551.1**	**100.0%**

Residential Development Capacity

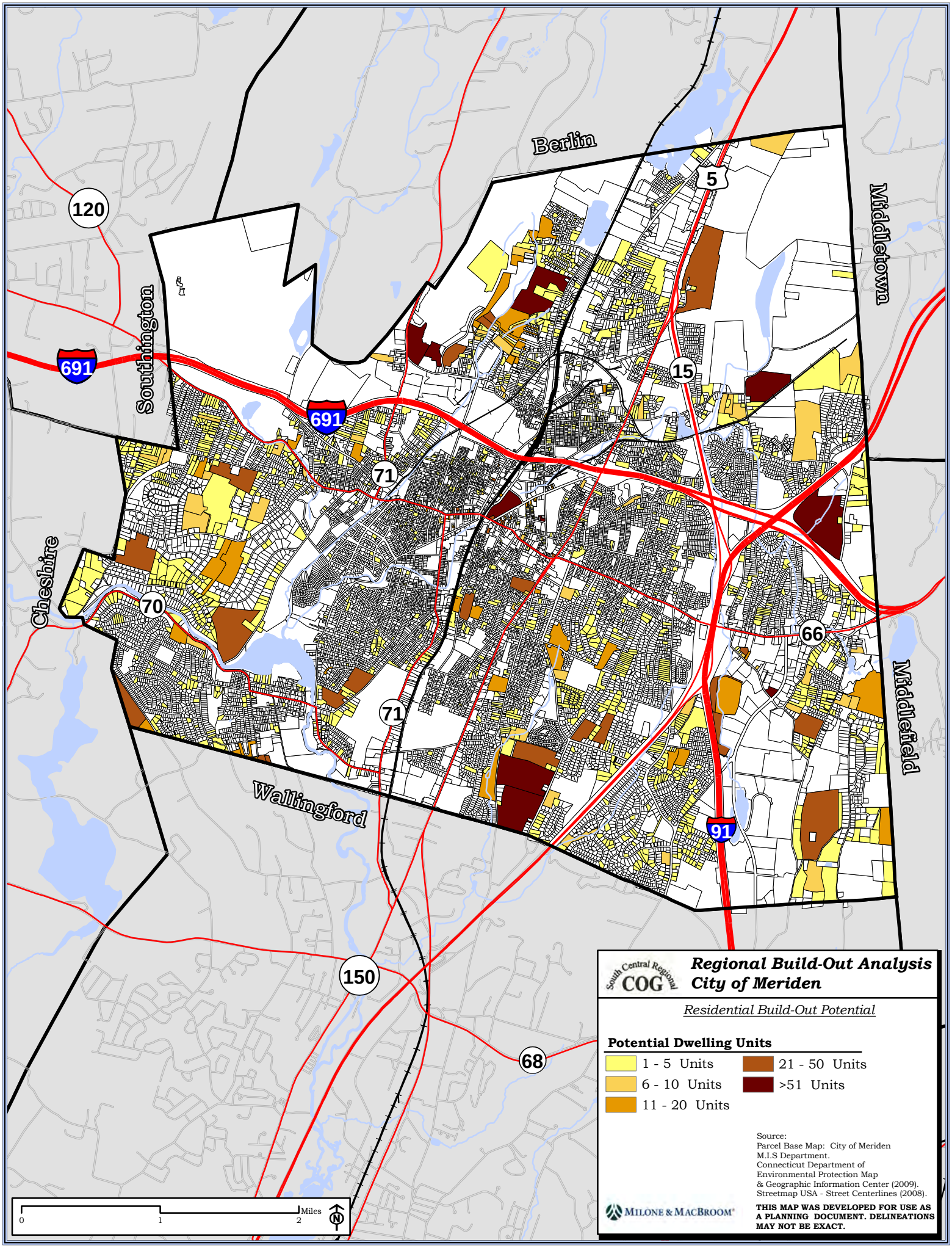
The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 2,440 additional dwelling units potentially could be built within the City's residential zones . Table 2 and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.

Table 2
Residential Development Potential Under Existing Zoning Regulations

	Vacant & Agricultural Land				Underutilized Land				
Zone	Gross Raw Vacant[(1)] & Agricultural Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Dwelling Units From Raw Vacant & Agricultural Land	Gross Land from Underutilized Lots[(2)] (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Dwelling Units Underutilized Lots	Total Potential Dwelling Units
R-1	13,133,789	4,714,334	7,754,314	**631**	6,723,299	517,386	59,201	219	**850**
R-2	1,553,605	445,592	828,697	**184**	1,710,365	0	0	153	**337**
R-3	496,026	168,236	250,066	**114**	1,193,112	153,031	229,382	131	**245**
R-4	91,045	12,673	63,286	**26**	0	0	0	0	**26**
R-R	20,467,969	6,292,869	12,669,740	**275**	13,784,766	0	0	127	**402**
S-R	8,736,328	2,871,647	5,664,530	**313**	4,066,638	0	0	139	**452**
PDD	1,071,784	716,353	353,405	**128**	0	0	0	0	**128**
Total:	**45,550,546**	**15,221,704**	**27,584,039**	**1,671**	**27,478,180**	**670,417**	**288,583**	**769**	**2,440**

[(1)] *Land in its natural state that has never been developed.*

[(2)] *Lots that have a single family residence and are greater than 5 times the minimum lot size of the underlying zone.*


Berlin
Middletown
Southington
Cheshire
Wallingford
Middlefield
120
691
691
5
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71
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70
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91
150
68
Regional Build-Out Analysis
City of Meriden
Residential Build-Out Potential
Potential Dwelling Units
1 - 5 Units
6 - 10 Units
11 - 20 Units
21 - 50 Units
>51 Units
Source:
Parcel Base Map: City of Meriden
M.I.S Department.
Connecticut Department of
Environmental Protection Map
& Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
THIS MAP WAS DEVELOPED FOR USE AS A PLANNING DOCUMENT. DELINEATIONS MAY NOT BE EXACT.
Miles
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Non-Residential Development Capacity

When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the City are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant & agricultural parcels zoned for non-residential use.

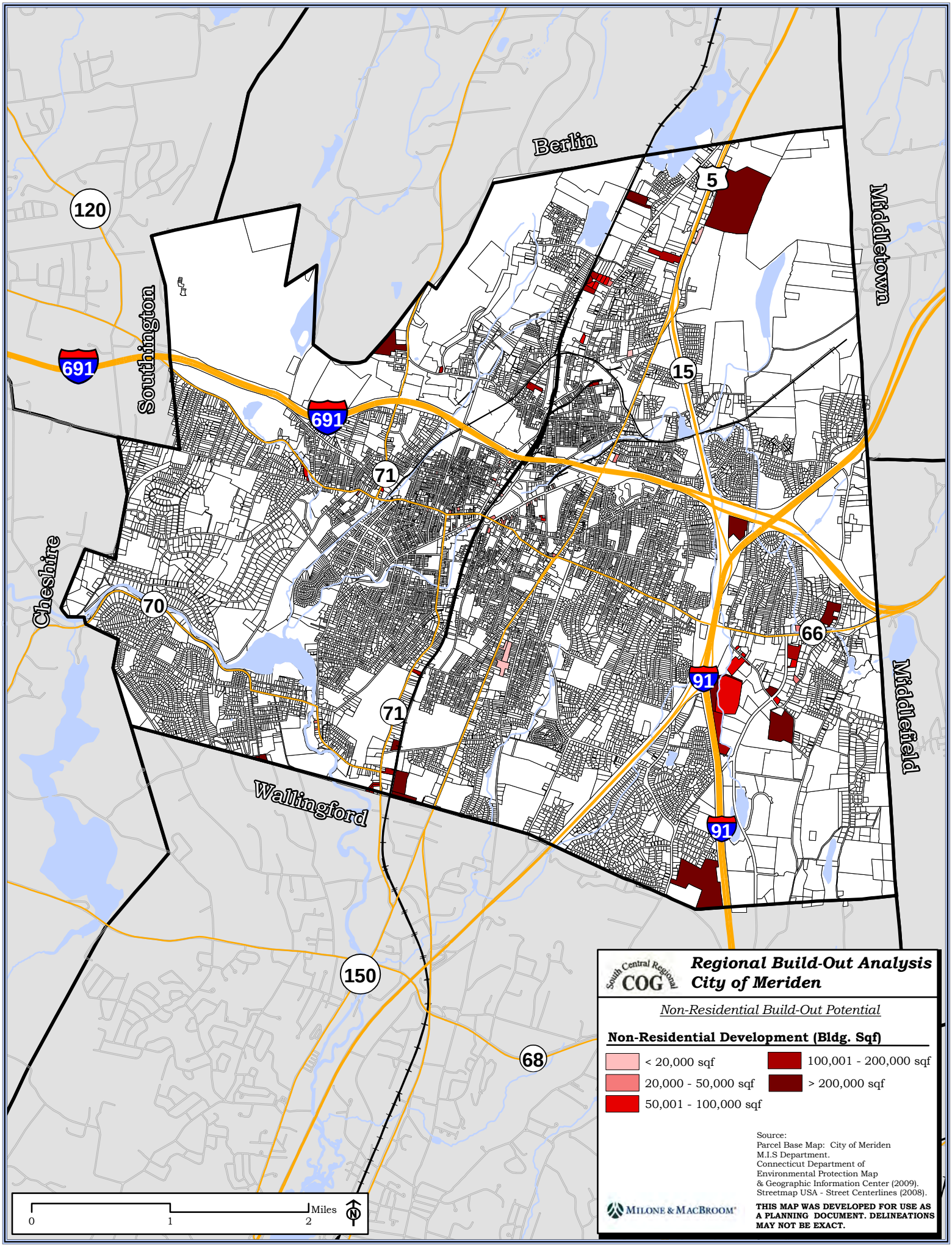
The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

Table 3
Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
C-1	325,708	62,023	263,685	554,793
C-2	3,226,805	1,946,085	1,280,720	4,805,262
C-3	5,963,048	3,518,576	2,444,472	2,288,025
C-4	5,883	0	5,883	8,237
M-1	1,692,686	296,099	1,396,587	2,100,466
M-2	1,342,325	282,271	1,060,054	2,120,108
M-3	1,084,992	331,127	753,866	1,887,679
RDD	2,180,172	362,471	1,817,701	2,428,449
Grand Total:	**15,821,620**	**11,287,824**	**4,534,101**	**16,193,019**

**Based on maximum percent lot coverage and Floor Area Ratio (FAR) for underlying*

It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables, particularly for multifamily units. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.


Berlin
Middletown
Southington
Cheshire
Wallingford
Middlefield
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68
Regional Build-Out Analysis
City of Meriden
Non-Residential Build-Out Potential
Non-Residential Development (Bldg. Sqf)
< 20,000 sqf
20,000 - 50,000 sqf
50,001 - 100,000 sqf
100,001 - 200,000 sqf
> 200,000 sqf
Source:
Parcel Base Map: City of Meriden
M.I.S Department.
Connecticut Department of
Environmental Protection Map
& Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
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MAY NOT BE EXACT.
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Attachments

SCRCOG Build-Out Land Use Regulatory Summary Table *Meriden, CT*						
Zone	*Zone Description*	*Minimum Lot Size(sqf unless noted)*	*DW Units Area Per*	*Maximum Coverage*	*Max Bldg Height*	*FAR*
R-R	Rural Residential	40,000	N/A	N/A	N/A	N/A
S-R	Suburban Residential	40000/20,000/15,000*	N/A	N/A	N/A	N/A
R-1	Single-Family Residential	40000/20,000/15,000*	N/A	N/A	N/A	N/A
R-2	Two-or Three-Family Residential	12,000	4,000	N/A	N/A	N/A
R-3	Multiple Family-Residential	10,000	2,500	N/A	N/A	N/A
R-4	Multiple-Family Professional	15,000	2,000	N/A	N/A	N/A
C-1	Central Commercial	4,000	N/A	90%	35	0.00
C-2	General Commercial	10,000	N/A	75%	75	4.69
C-3	Highway Commercial	40,000	N/A	40%	35	1.17
C-4	Convenience or Neighborhood Commercial	4,000	N/A	60%	35	1.75
C-1A	Central Commercial Annex	4,000	N/A	90%	35	2.63
M-1	Research, Development and Manufacturing	120,000	N/A	30%	75	1.88
M-2	Industrial	40,000	N/A	40%	75	2.50
M-3	Industrial	40,000	N/A	50%	75	3.13
M-4	Planned Industrial	4,000,000	N/A	20%	120	2.00
PDD	Planned Development District	See Regs	N/A	N/A	N/A	N/A
NCDD	Neighborhood Commercial Design	10,000	N/A	60%	35	1.75
RDD	Regional Development District	320,000	N/A	50%	40	1.67
PEOD	Planned Executive Office Development	320,000	N/A	50%	40	1.67

*Private Water & Sewer / Private Sewer / Public Water & Sewer

CITY OF MILFORD

SCRCOG Regional Build-Out Analysis - City of Milford

ANALYSIS OF DEVELOPMENT CAPACITY

As a component of the South Central Regional Council of Government's Unified Planning Work Program for Fiscal Year 2010, an analysis was conducted assessing the development potential for the City of Milford. This analysis reviewed vacant, agricultural and underutilized land for residential and non-residential uses for its physical capacity to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and gross building square footage for non-residentially zoned land. Underutilized parcels for this analysis have been defined as residentially zoned parcels that are greater than five times the minimum lot size by zone.

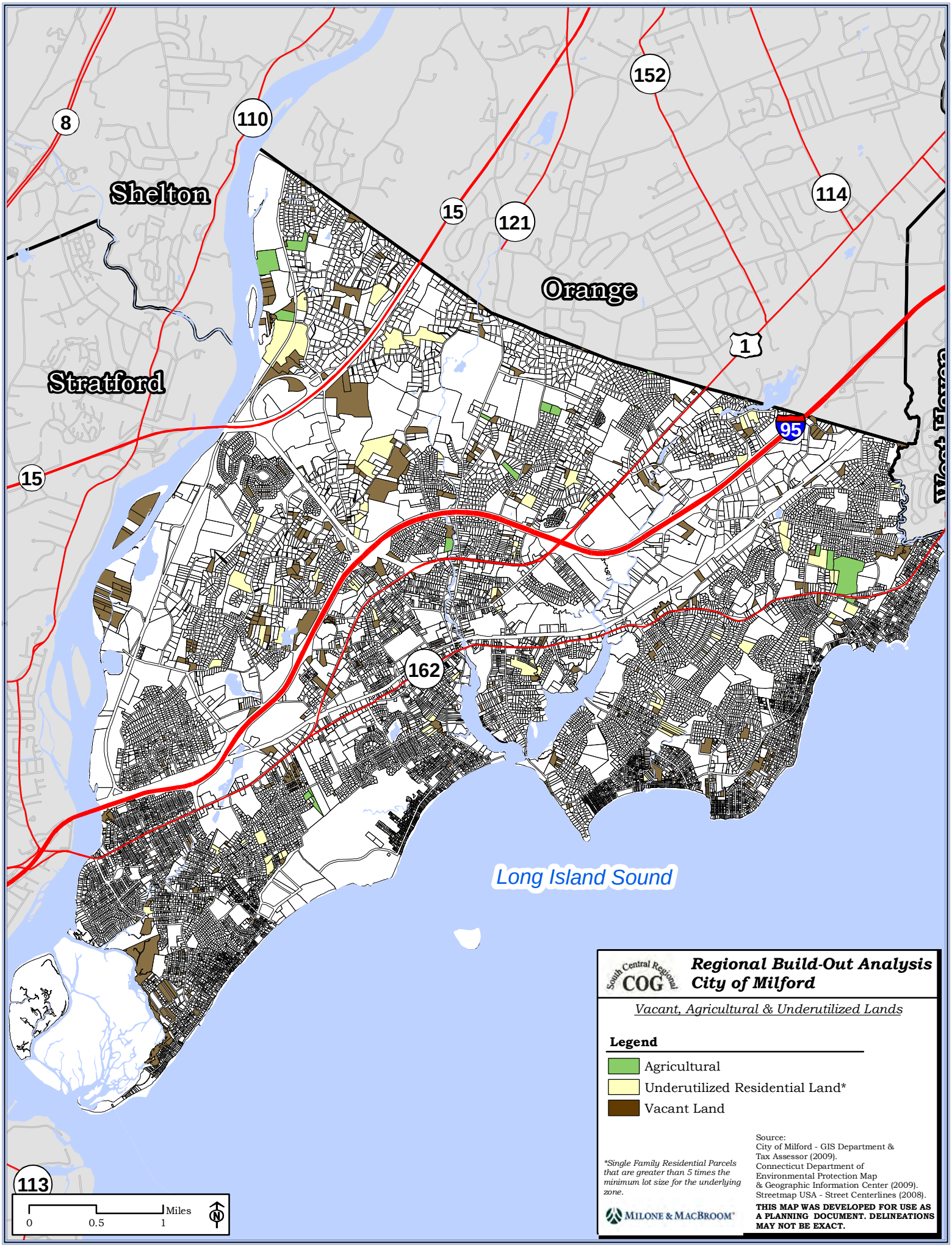
The development capacity calculated represents a reasonable scenario of growth but not an absolute buildout of every parcel in Milford to a maximum density.

Methodology

The process to calculate development potential for vacant land involves three basic steps. First, the total amount of vacant, agricultural, and underutilized land is determined by reviewing the assessor records through the GIS parcel database. The parcels have been identified on the map titled *Vacant, Agricultural and Underutilized Lands*.

The second step of the development potential process involves calculating the developable area of the vacant, agricultural and underutilized land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slope soils (greater than 15%). These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those parcels that are large enough to be subdivided (greater than five times the minimum lot size as defined by zoning), an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that parcels were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant parcels that have an area less than the minimum lot size of the underlying zone were not included for potential dwelling units.



South Central Regional COG

Regional Build-Out Analysis
City of Milford

Vacant, Agricultural & Underutilized Lands

Legend

- Agricultural
- Underutilized Residential Land*
- Vacant Land

**Single Family Residential Parcels that are greater than 5 times the minimum lot size for the underlying zone.*

Source:
City of Milford - GIS Department & Tax Assessor (2009).
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).

MILONE & MACBROOM

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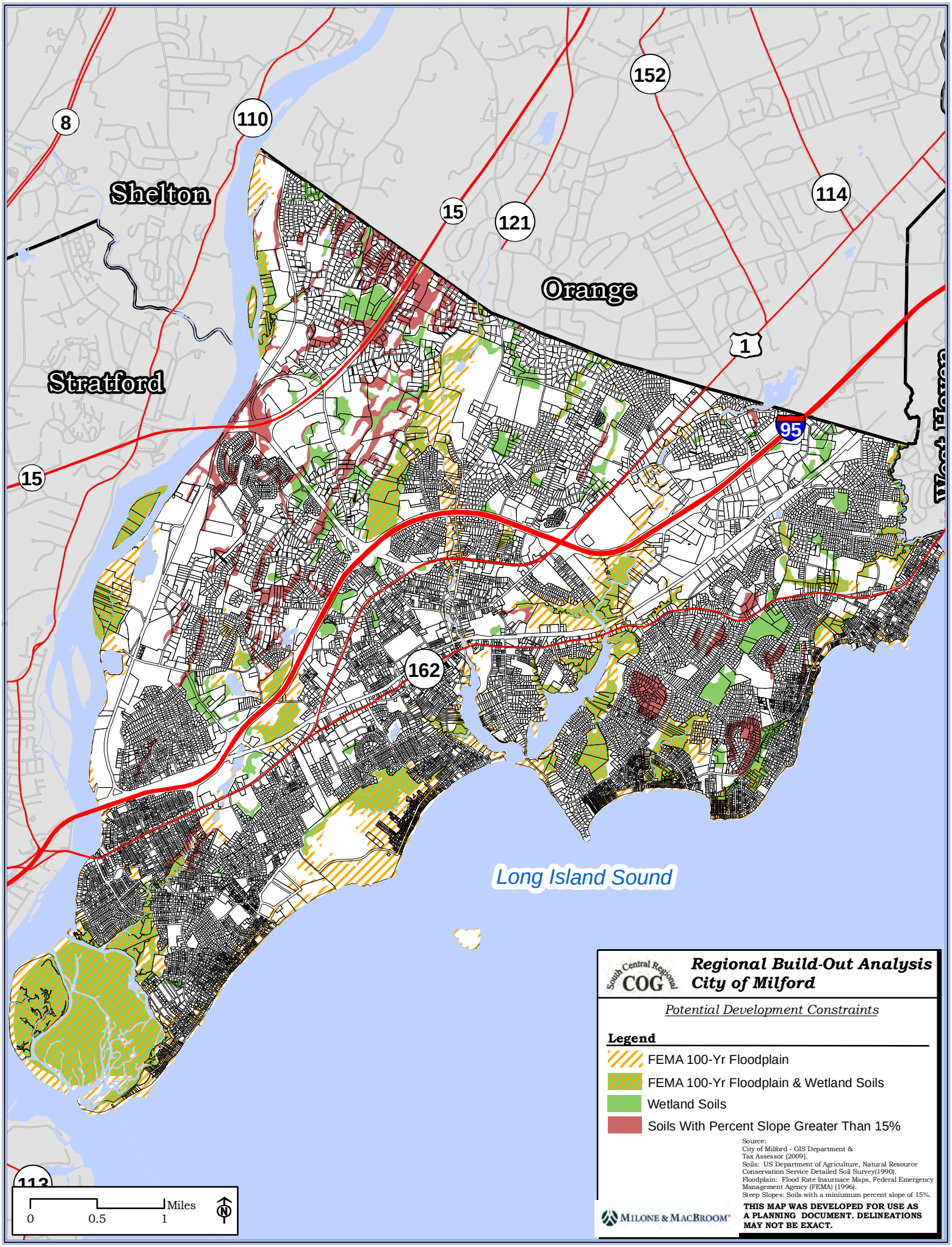
Shelton
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South Central Regional COG
Regional Build-Out Analysis
City of Milford
Potential Development Constraints
Legend
FEMA 100-Yr Floodplain
FEMA 100-Yr Floodplain & Wetland Soils
Wetland Soils
Soils With Percent Slope Greater Than 15%
Source:
City of Milford - GIS Department &
Tax Assessor (2009).
Soils: US Department of Agriculture, Natural Resource Conservation Service Detailed Soil Survey(1990).
Floodplain: Flood Rate Insurnace Maps, Federal Emergency Management Agency (FEMA) (1996).
Steep Slopes: Soils with a miniumum percent slope of 15%.
MILONE & MACBROOM
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Land Analysis

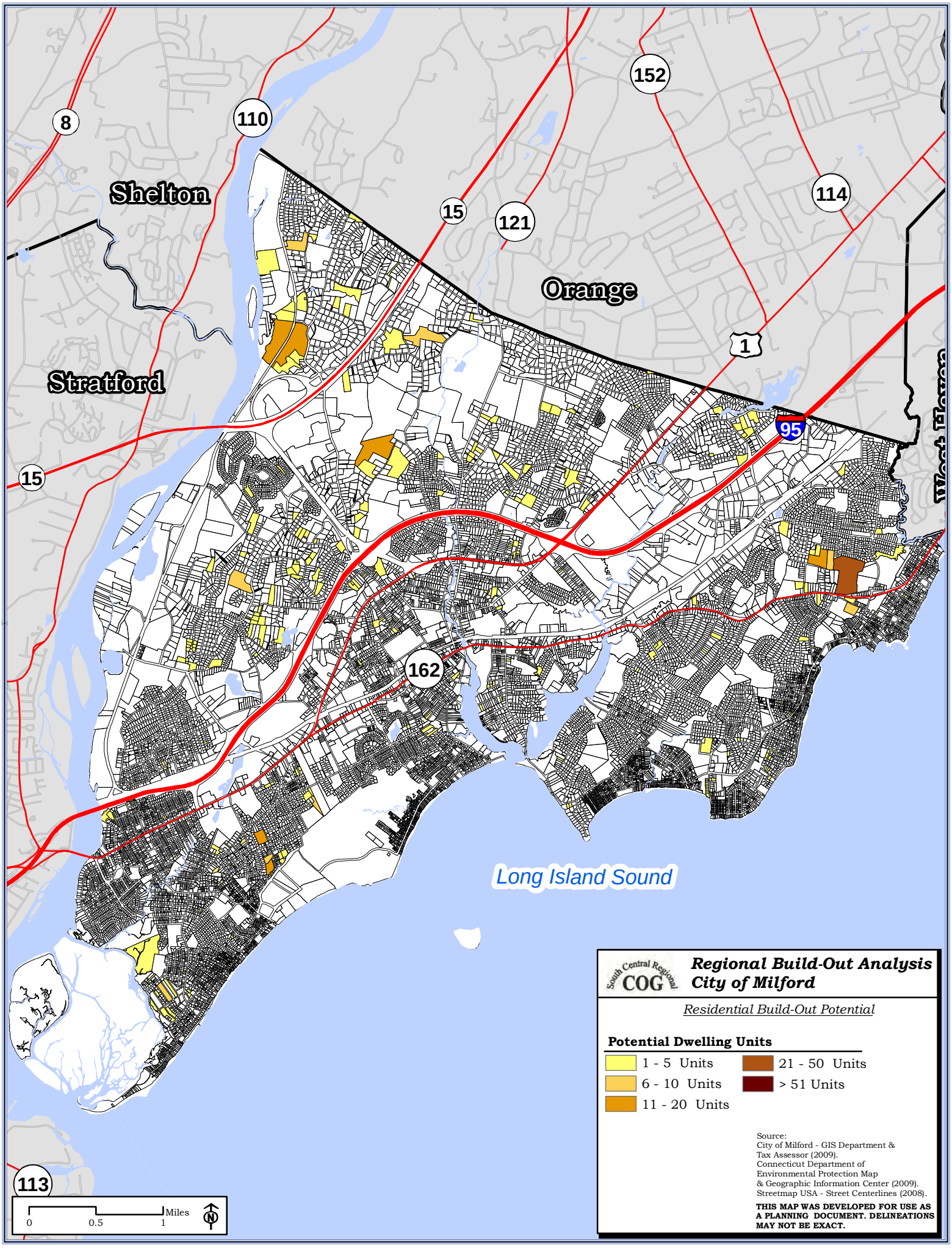
Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant, Agricultural and Underutilized Lands* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land & Agricultural Land Analysis by Zone District

Zone	Vacant & Agricultural Land (acres)	% of Total Vacant Land
BD	1.2	**0.2%**
BD-1	0.1	**0.0%**
CBDD	5.8	**0.8%**
CDD-1	14.2	**2.0%**
CDD-2	4.7	**0.6%**
CDD-3	8.4	**1.1%**
CDD-4	6.3	**0.9%**
CDD-5	2.0	**0.3%**
DO-10	13.6	**1.9%**
DO-25	54.9	**7.5%**
HDD	67.5	**9.3%**
ICD	5.1	**0.7%**
ID	2.5	**0.3%**
LI	4.9	**0.7%**
MCDD	2.4	**0.3%**
OD	1.6	**0.2%**
R-10	25.9	**3.6%**
R-12.5	150.2	**20.6%**
R-18	91.1	**12.5%**
R-30	47.0	**6.4%**
R-5	8.7	**1.2%**
R-7.5	26.8	**3.7%**
R-A	170.4	**23.4%**
RMF-16	6.7	**0.9%**
SCD	6.6	**0.9%**
SFA-10	1.0	**0.1%**
Total:	**729.5**	**100.0%**

Residential Development Capacity

The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 574 additional dwelling units potentially could be built within the city's residential zones. Table 2 below and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.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South Central Regional COG
Regional Build-Out Analysis
City of Milford
Residential Build-Out Potential
Potential Dwelling Units
1 - 5 Units
6 - 10 Units
11 - 20 Units
21 - 50 Units
> 51 Units
Source:
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Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
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Table 2
Residential Development Potential Under Existing Zoning Regulations

	Vacant & Agricultural Land				Underutilized Land				
Zone	Gross Raw Vacant[1] & Agricultural Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Dwelling Units From Raw Vacant & Agricultural Land	Gross Land from Underutilized Lots[2] (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Dwelling Units Underutilized Lots	Total Potential Dwelling Units
R-10	462,055	248,661	213,394	18	186,792	35,749	151,044	9	27
R-12.5	3,238,324	1,604,922	1,633,402	107	877,049	103,586	773,463	42	149
R-18	2,850,051	879,312	1,970,739	90	1,697,119	380,814	1,316,305	47	137
R-30	1,568,100	251,429	1,316,671	33	1,406,473	310,672	1,095,801	23	56
R-5	33,329	0	33,329	6		0	0	0	6
R-7.5	247,834	7,232	240,602	27	413,309	7,190	406,119	37	64
R-A	4,445,648	1,518,885	2,926,763	57	5,012,204	1,304,376	3,707,828	61	118
SFA-10	28,739	0	28,739	5	119,627	14,681	104,946	12	17
Total:	**12,874,080**	**4,510,441**	**8,363,639**	**343**	**9,712,573**	**2,157,068**	**7,555,505**	**231**	**574**

[1] *Land in its natural state that has never been developed.*

[2] *Lots that have a single family residence and are greater than 5 times the minimum lot size of the underlying zone.*

Non-Residential Development Capacity

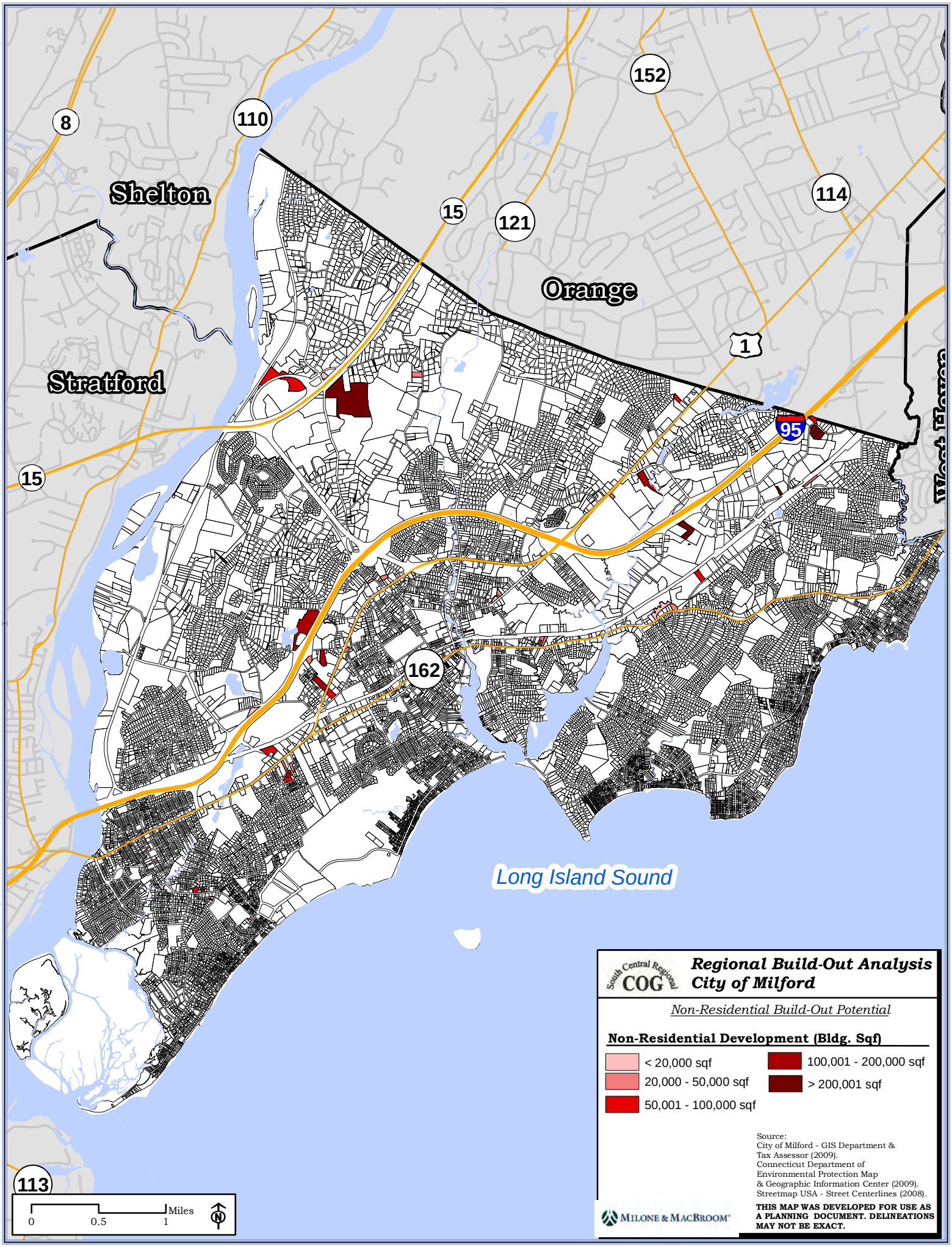
When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the city are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant & agricultural parcels zoned for non-residential use.

The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

Table 3
Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
BD	58,495	5,377	53,118	21,246
BD-1	2,852	0	2,852	2,282
CBDD	253,766	79,261	174,504	3,490,087
CDD-1	652,565	16,785	635,780	508,622
CDD-2	225,301	19,374	205,927	247,112
CDD-3	336,674	62,025	274,649	219,718
CDD-4	327,213	162,232	164,982	131,985
CDD-5	47,907	0	47,907	95,815
DO-10	599,249	0	599,249	167,790
DO-25	2,477,996	677,104	1,800,893	504,250
HDD	228,972	219,986	8,985	5,391
ICD	221,628	622	221,005	265,206
ID	55,517	0	55,517	88,828
LI	187,436	29,077	158,358	126,686
MCDD	109,431	18,247	91,184	218,841
OD	68,729	0	68,729	16,495
SCD	257,217	144,322	112,896	135,475
Grand Total:	**678,330**	**191,646**	**486,684**	**586,325**

**Based on percent lot coverage and Floor Area Ratio (FAR) for underlying zoning.*



South Central Regional COG

Regional Build-Out Analysis
City of Milford

Non-Residential Build-Out Potential

Non-Residential Development (Bldg. Sqf)

- < 20,000 sqf
- 20,000 - 50,000 sqf
- 50,001 - 100,000 sqf
- 100,001 - 200,000 sqf
- > 200,001 sqf

Source:
City of Milford - GIS Department & Tax Assessor (2009).
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).

MILONE & MACBROOM

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It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables, particularly for multifamily units. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.

Attachments

SCRCOG Build-Out Land Use Regulatory Summary Table

Milford, CT

Zoning	*Zone Description*	*Minimum Lot Size*	*Minimum Lot Area per dwelling unit*	*Max Lot Coverage as percentage of lot area*	*Max Bldg Height*	*FAR*
R-A	One Family Residential	43,560	43,560	15.0%	35	N/A
R-30	One Family Residential	30,000	30,000	20.0%	35	N/A
R-18	One Family Residential	18,000	18,000	25.0%	35	N/A
R-12.5	One Family Residential	12,500	12,500	30.0%	35	N/A
R-10	One Family Residential	10,000	10,000	35.0%	35	N/A
R-7.5	One Family Residential	7,500	7,500	40.0%	35	N/A
R-5	One Family Residential	5,000	5,000	45.0%	35	N/A
SFA-10	Single Family Attached	10,000/5,000	5,000	35.0%	35	N/A
RMF-9	Multi-Family Residential	87,120	Varies	30.0%	35	N/A
RMF-16	Multi-Family Residential	43,560	Varies	50.0%	35	N/A
RO	Residential Office	10,000	Varies	35.0%	35	N/A
OD	Office	87,120	87,120	50.0%*	35	0.3
DO-10	Design Office	435,600	N/A	50.0%*	60	0.4
DO-25	Design Office	1,089,000	N/A	50.0%*	60	0.4
BB	Boating Business	87,120	N/A	75.0%**	50	N/A
BD***	Business	20,000/10,000	20,000	None	30	0.5
BD-1***	Business	2,000	Varies	None	30	1.0
SCD	Shopping Center Design	871,200/435,600†	N/A	50.0%	120	1.5
LI	Limited Industrial	10,000	N/A	50.0%	35	1.0
ID	Industrial	43,560	N/A	50.0%	120	2.0
HDD	Housatonic Design District	43,560	N/A	50.0%	120	0.8
WDD	Waterfront Design District	87,120	N/A	30.0%	Varies	N/A
OS	Open Space	N/A	N/A	N/A	N/A	N/A
BEZ	Beach Erosion Zone	N/A	N/A	N/A	N/A	N/A
CDD-1	Community Design	10,000	N/A	50.0%	40	1.0
CDD-2	Devon Center-Naugatuck	2,000	Varies	50.0%	40	1.5
CDD-3	Bridgeport Avenue	10,000	N/A	50.0%	40	1.0
CDD-4	New Haven Avenue	7,500	Varies	50.0%	30	1.0
CDD-5	Regional Business Design	40,000	N/A	50.0%	60	2.5
MCDD	Milford Center Design Development District	2,000	Varies	None	40	3.0
ICD	Interchange Commercial District	40,000	N/A	50.0%	120	1.5
CBDD	Cascade Boulevard Design Development	10,000	N/A	40.0%	25	N/A
OSAHD-MF	Open Space Affordable Housing Development-Multi-Family	871,200	Varies	40.0%**	55	N/A

* No specific coverage maximum, but 50% of lot must remain as open space.

** Lot coverage, not building coverage.

*** Max. floor area of 7,500 sq. ft. per lot (20,000 sq. ft. for supermarkets in BD)

† 20 acres with residential units, 10 acres without.

CITY OF NEW HAVEN

SCRCOG Regional Build-Out Analysis - City of New Haven

ANALYSIS OF DEVELOPMENT CAPACITY

As a component of the South Central Regional Council of Government's Unified Planning Work Program for Fiscal Year 2010, an analysis was conducted assessing the development potential for the City of New Haven. This analysis reviewed vacant, agricultural and underutilized land for residential and non-residential uses for its physical capacity to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and gross building square footage for non-residentially zoned land. Underutilized parcels for this analysis have been defined as residentially zoned parcels that are greater than five times the minimum lot size by zone.

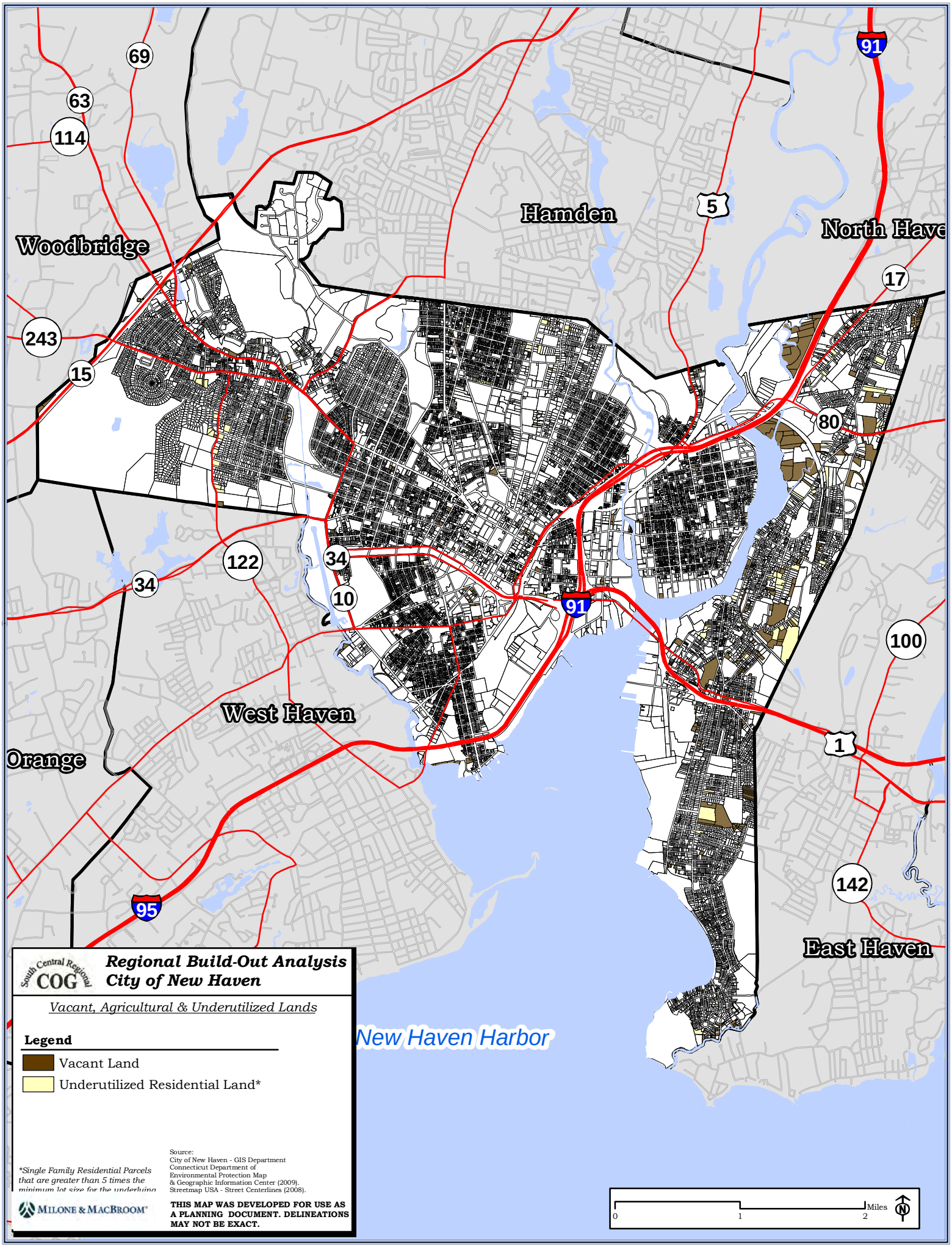
The development capacity calculated represents a reasonable scenario of growth but not an absolute buildout of every parcel in New Haven to a maximum density.

Methodology

The process to calculate development potential for vacant land involves three basic steps. First, the total amount of vacant, agricultural, and underutilized land is determined by reviewing the assessor records through the GIS parcel database. The parcels have been identified on the map titled *Vacant, Agricultural and Underutilized Lands*.

The second step of the development potential process involves calculating the developable area of the vacant, agricultural and underutilized land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slope soils (greater than 15%). These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those parcels that are large enough to be subdivided (greater than five times the minimum lot size as defined by zoning), an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that parcels were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant parcels that have an area less than the minimum lot size of the underlying zone were not included for potential dwelling units.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Regional Build-Out Analysis
City of New Haven
Vacant, Agricultural & Underutilized Lands
Legend
Vacant Land
Underutilized Residential Land*
*Single Family Residential Parcels that are greater than 5 times the minimum lot size for the underlying
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Streetmap USA - Street Centerlines (2008).
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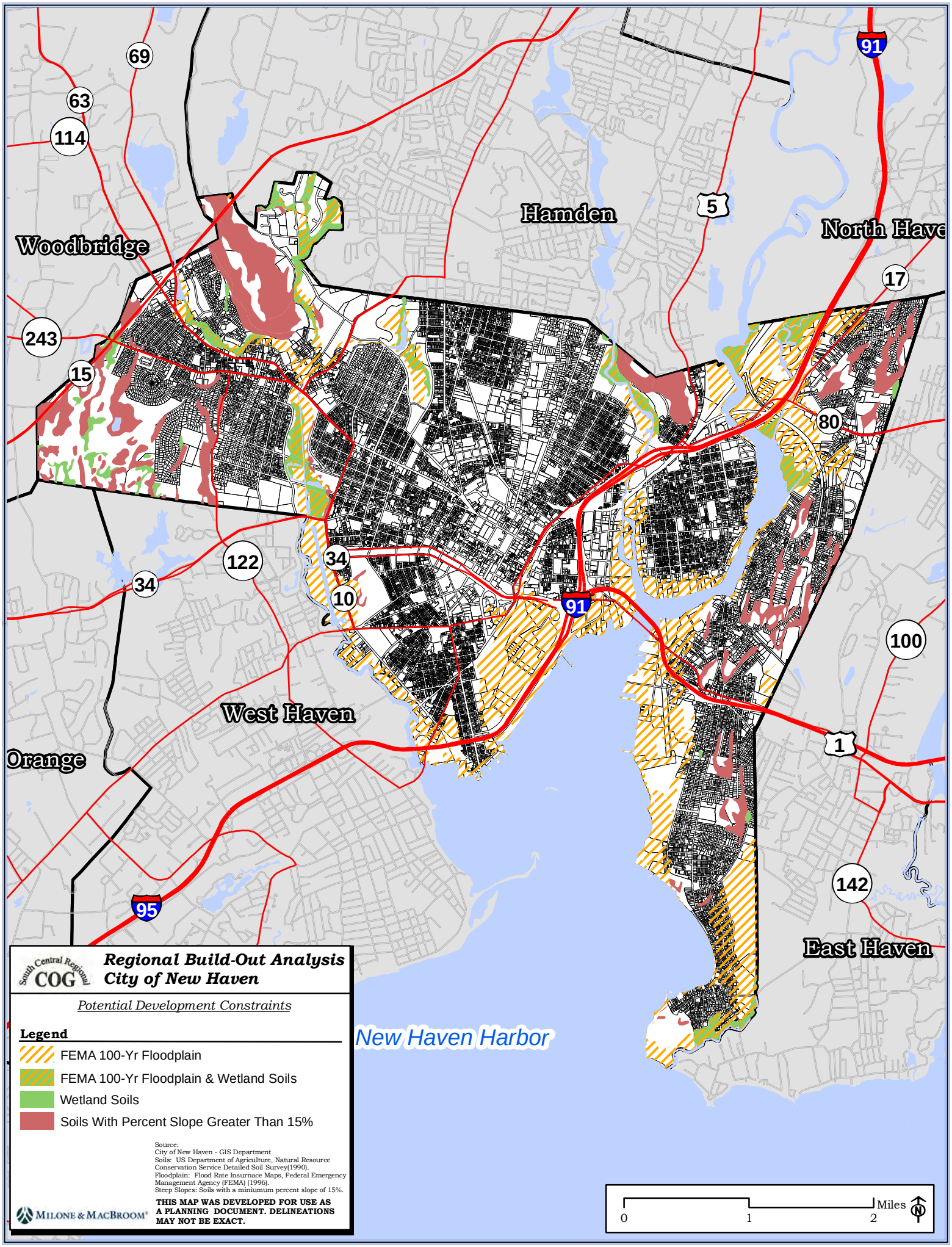
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Regional Build-Out Analysis
City of New Haven
Potential Development Constraints
Legend
FEMA 100-Yr Floodplain
FEMA 100-Yr Floodplain & Wetland Soils
Wetland Soils
Soils With Percent Slope Greater Than 15%
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Land Analysis

Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant, Agricultural and Underutilized Lands* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land & Agricultural Land Analysis by Zone District

Zone	Vacant & Agricultural Land (acres)	% of Total Vacant Land
BA	54.5	**19.9%**
BB	1.8	**0.7%**
BC	4.8	**1.7%**
BD	2.3	**0.9%**
BD1	2.0	**0.7%**
BD2	0.1	**0.0%**
IH	55.8	**20.3%**
IL	65.1	**23.8%**
IM	1.2	**0.4%**
PDD 23	4.4	**1.6%**
PDD 38-RM1	1.1	**0.4%**
PDD 49	0.1	**0.0%**
PDD 65	0.1	**0.1%**
RH2	0.8	**0.3%**
RM1	48.2	**17.6%**
RM1-RS2	9.2	**3.4%**
RM2	19.0	**6.9%**
RO	0.4	**0.2%**
RS1	3.1	**1.1%**
RS2	82.8	**30.2%**
Total:	**274.0**	**100.0%**

Residential Development Capacity

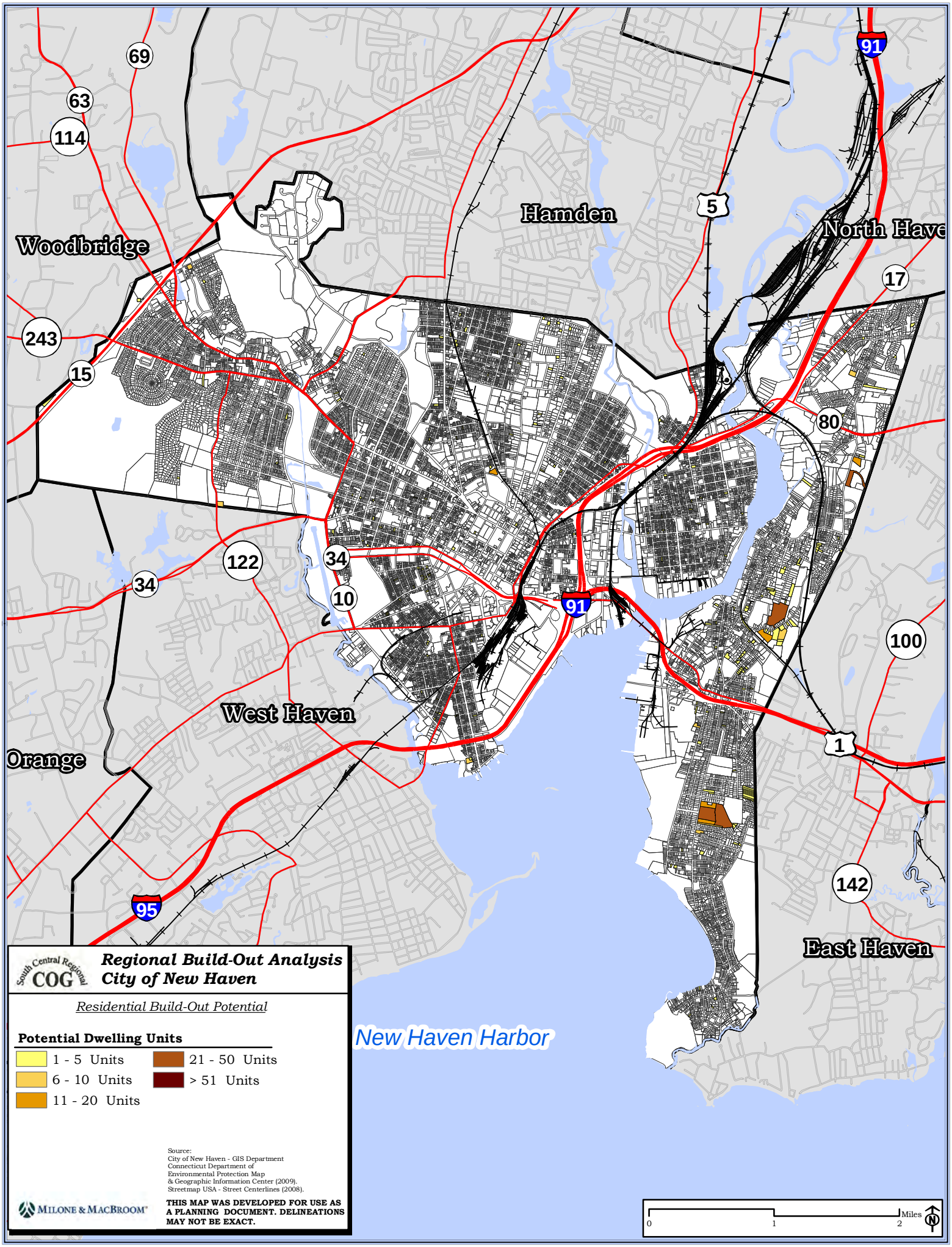
The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 529 additional dwelling units potentially could be built within the city's residential zones on vacant or underutilized land. Table 2 below and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.

Table 2
Residential Development Potential Under Existing Zoning Regulations

	Vacant & Agricultural Land				Underutilized Land				
Zone	**Gross Raw Vacant[(1)] & Agricultural Land (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units From Raw Vacant & Agricultural Land**	**Gross Land from Underutilized Lots[(2)] (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units Underutilized Lots**	**Total Potential Dwelling Units**
RH2	33905.3142	0	33905.3142	6	0	0	0	0	6
RM1	2166903.463	1375964	790939.5019	128	0	0	0	0	128
RM2	1265210.029	208142.11	1057067.919	123	0	0	0	0	123
RO	19177.4163	0	19177.4163	2	0	0	0	0	2
RS1	133415.4205	0	133415.4205	18	0	0	0	0	18
RS2	3519396.273	1553699	1965697.251	239	338,964	177,620	161,344	13	252
Total:	**7,138,008**	**3,137,805**	**4,000,203**	**516**	**338,964**	**177,620**	**161,344**	**13**	**529**

[(1)] *Land in its natural state that has never been developed.*

[(2)] *Lots that have a single family residence and are greater than 5 times the minimum lot size of the underlying zone.*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South Central Regional COG
Regional Build-Out Analysis
City of New Haven
Residential Build-Out Potential
Potential Dwelling Units
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Non-Residential Development Capacity

When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the city are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant & agricultural parcels zoned for non-residential use.

The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

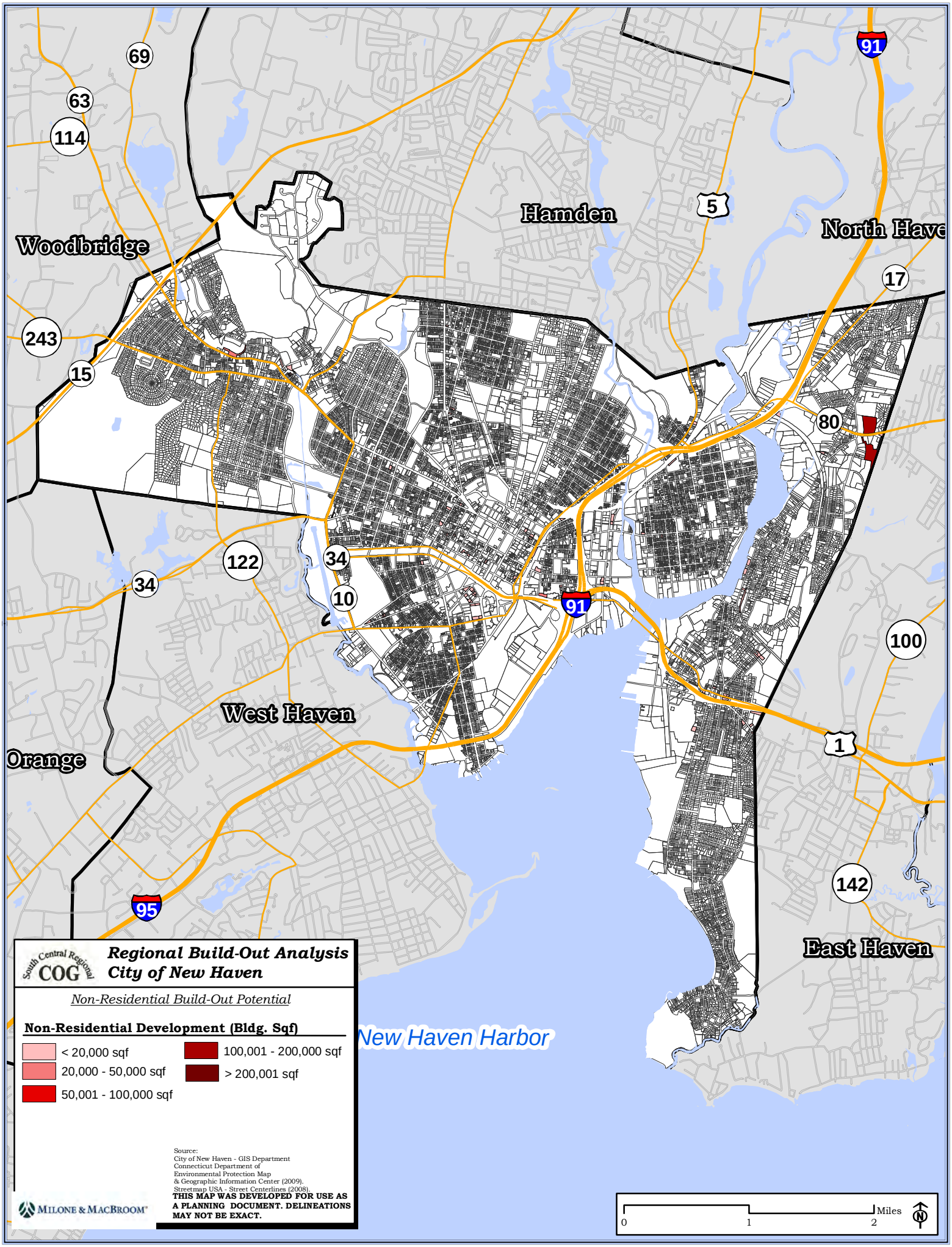
Table 3

Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
BA	2,130,672	673,033	1,457,639	706,466
BB	79,090	0	79,090	39,544
BC	117,312	97,821	19,491	9,746
BD	92,617	0	92,617	37,048
BD1	95,752	0	95,752	15,958
BD2	44,177	0	44,177	7,363
IH	2,438,194	2,173,817	264,377	62,971
IL	2,383,358	2,261,403	121,955	40,003
Grand Total:	**7,381,172**	**5,206,074**	**2,175,098**	**919,099**

**Based on percent lot coverage and Floor Area Ratio (FAR) for underlying zoning.*

It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables, particularly for multifamily units. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.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Regional Build-Out Analysis
City of New Haven
Non-Residential Build-Out Potential
Non-Residential Development (Bldg. Sqf)
< 20,000 sqf
20,000 - 50,000 sqf
50,001 - 100,000 sqf
100,001 - 200,000 sqf
> 200,001 sqf
Source:
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Attachments

SCRCOG Build-Out Land Use Regulatory Summary Table *New Haven, CT*						
ZONE	*Zone Description*	*Minimum Lot Size*	*Minimum Lot Area per dwelling unit*	*Max Lot Coverage as percentage of lot area*	*Max Bldg Height*	*FAR*
RS-1	Special Single Family	7,500	7,500	30.0%	35	N/A
RS-2	General Single Family	7,500	7,500	30.0%	35	N/A
RM-1	Low Middle Density	6,000	3,500/2,500/1,750	30.0%	35	N/A
RM-2	High Middle Density	5,400	2,000/1,400/1,000	30.0%	45	N/A
RH-1	Special High Density	7,500	0	25.0%	N/A	0.5-1.7
RH-2	General High Density	5,400	0	25.0%	N/A	0.5-1.7
RO	Residence-Office	7,500	0	25.0%	N/A	0.5-1.7
BA	General Business	0	2,000/1,400/1,000	100.0%	N/A	2.0
BB	Automotive Sales	0	2,000/1,400/1,000	100.0%	N/A	2.0
BC	Marine Commercial	0	3,500/2,000/1,750	100.0%	35	2.0
BD	Central Business	0	0	100.0%	200	6.0/2.5
BD-1	Central Business/Residential	0	0	100.0%	N/A	6.0
BD-2	Central Business/Medical	0	0	100.0%	N/A	6.0
BE	Wholesale and Distribution	0	0	100.0%	N/A	6.0
IL	Light Industrial	0	N/A	100.0%	N/A	3.0
IM	Light Industrial/Marine	0	N/A	100.0%	N/A	2.0
IH	Heavy Industrial	0	N/A	100.0%	N/A	4.0
PARK	Park	0	N/A	N/A	N/A	N/A
CEMETERY	Cemetary	6,000	3,500/2,500/1,750 or 3,630?	30.0%	35	N/A
AIRPORT	Airport	0	N/A	N/A	N/A	N/A

TOWN OF NORTH BRANFORD

SCRCOG Regional Build-Out Analysis - Town of North Branford

ANALYSIS OF DEVELOPMENT CAPACITY

As a component of the South Central Regional Council of Government's Unified Planning Work Program for Fiscal Year 2010, an analysis was conducted assessing the development potential for the Town of North Branford. This analysis reviewed vacant, agricultural and underutilized land for residential and non-residential uses for its physical capacity to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and gross building square footage for non-residentially zoned land. Underutilized parcels for this analysis have been defined as residentially zoned parcels that are greater than five times the minimum lot size by zone.

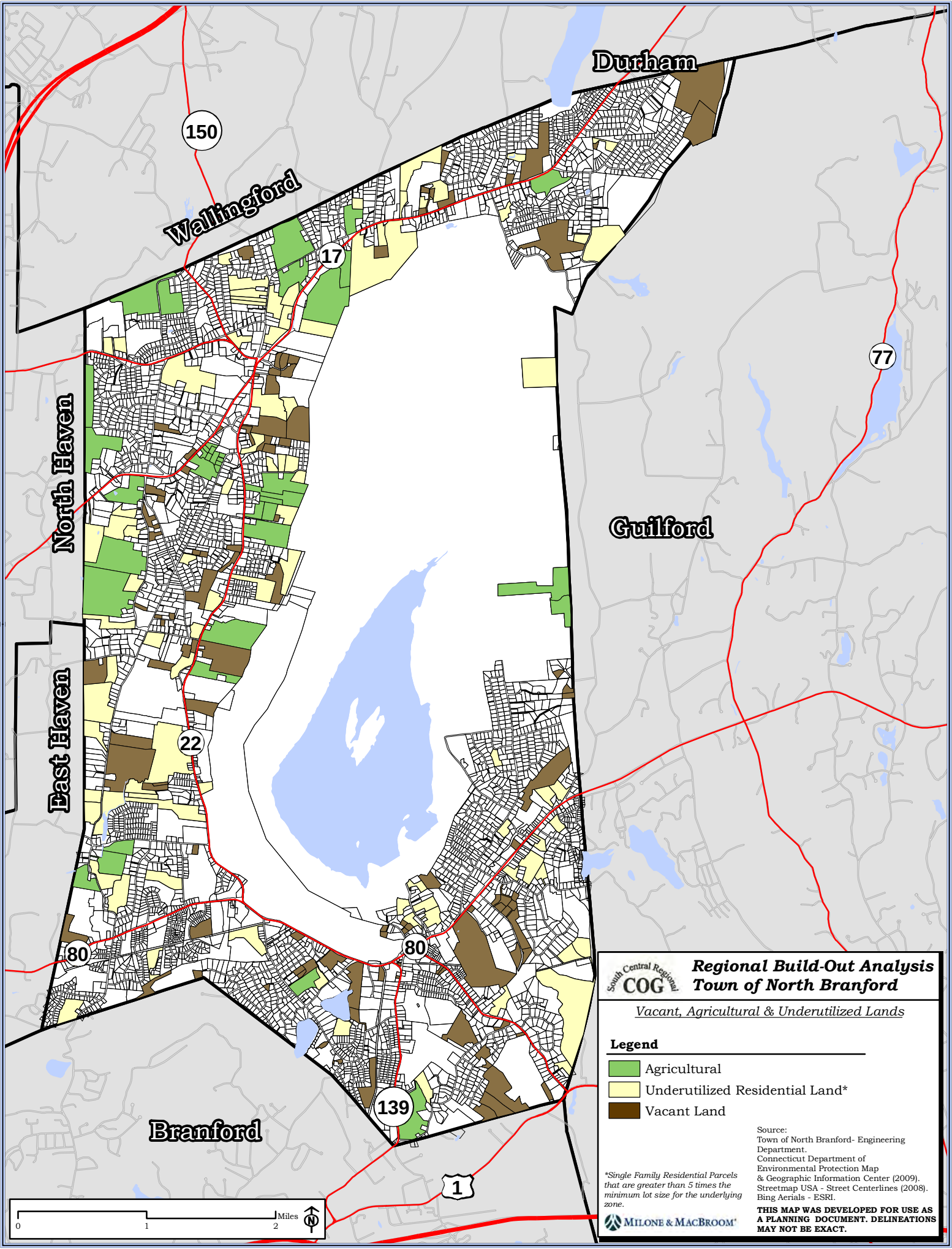
The development capacity calculated represents a reasonable scenario of growth but not an absolute buildout of every parcel in North Branford to a maximum density.

Methodology

The process to calculate development potential for vacant land involves three basic steps. First, the total amount of vacant, agricultural, and underutilized land is determined by reviewing the assessor records through the GIS parcel database. The parcels have been identified on the map titled *Vacant, Agricultural and Underutilized Lands*.

The second step of the development potential process involves calculating the developable area of the vacant, agricultural and underutilized land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slope soils (greater than 15%). These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those parcels that are large enough to be subdivided (greater than five times the minimum lot size as defined by zoning), an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that parcels were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant parcels that have an area less than the minimum lot size of the underlying zone were not included for potential dwelling units.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Regional Build-Out Analysis
Town of North Branford
Vacant, Agricultural & Underutilized Lands
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Agricultural
Underutilized Residential Land*
Vacant Land
*Single Family Residential Parcels that are greater than 5 times the minimum lot size for the underlying zone.
Source:
Town of North Branford- Engineering Department.
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
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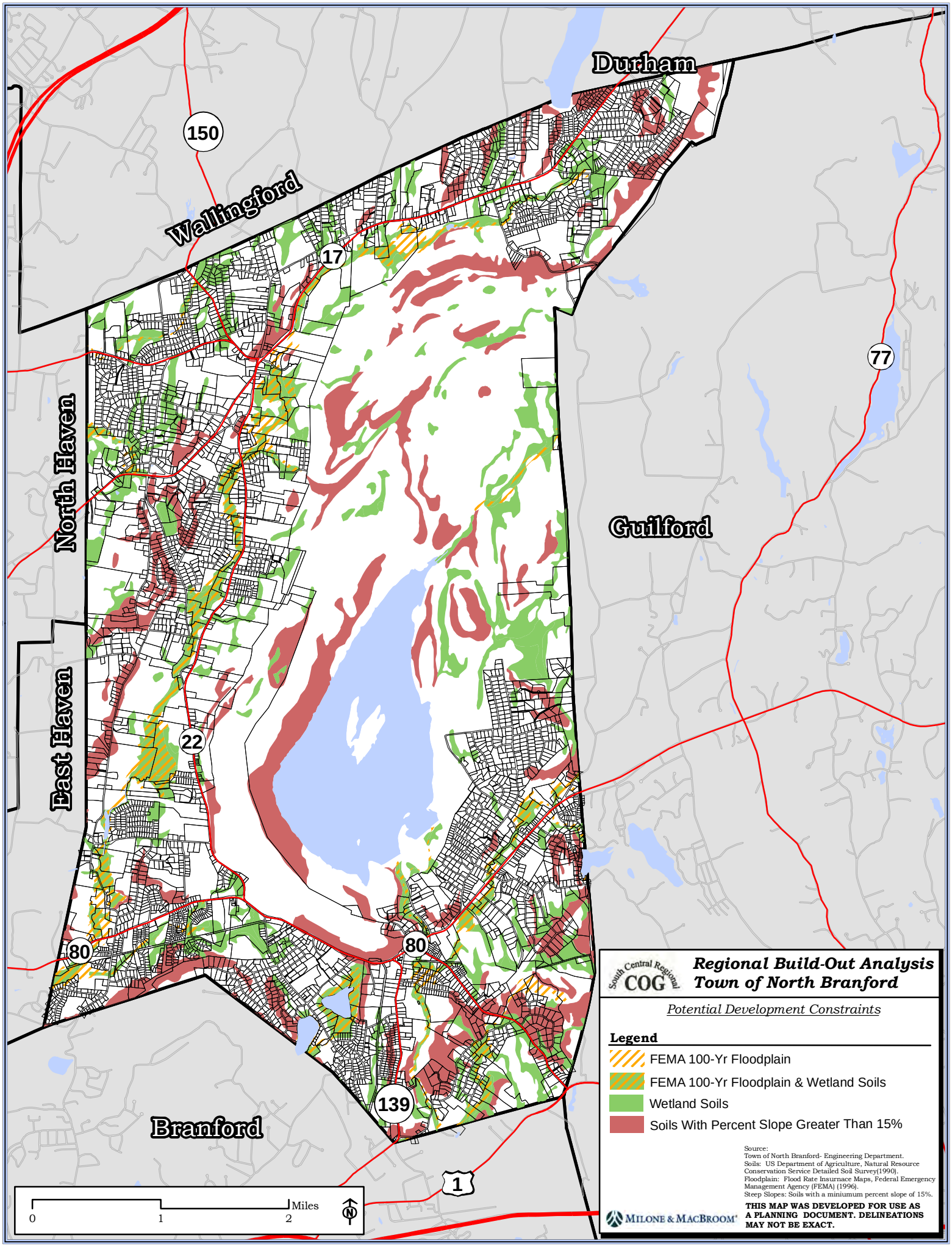

Regional Build-Out Analysis
Town of North Branford

South Central Regional COG

Potential Development Constraints

Legend

- FEMA 100-Yr Floodplain
- FEMA 100-Yr Floodplain & Wetland Soils
- Wetland Soils
- Soils With Percent Slope Greater Than 15%

Source:
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Land Analysis

Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant, Agricultural and Underutilized Lands* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land & Agricultural Land Analysis by Zone District

Zone	Vacant & Agricultural Land (acres)	% of Total Vacant Land
B-1	23.2	**1.3%**
B-2	0.9	**0.0%**
B-3	3.6	**0.2%**
I-2	113.2	**6.2%**
I-3	165.7	**9.0%**
R-40	1,234.5	**67.3%**
R-80	294.0	**16.0%**
Total:	**1,835.0**	**100.0%**

Residential Development Capacity

The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 1,319 additional dwelling units potentially could be built within the town's residential zones. Table 2 below and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.

Table 2
Residential Development Potential Under Existing Zoning Regulations

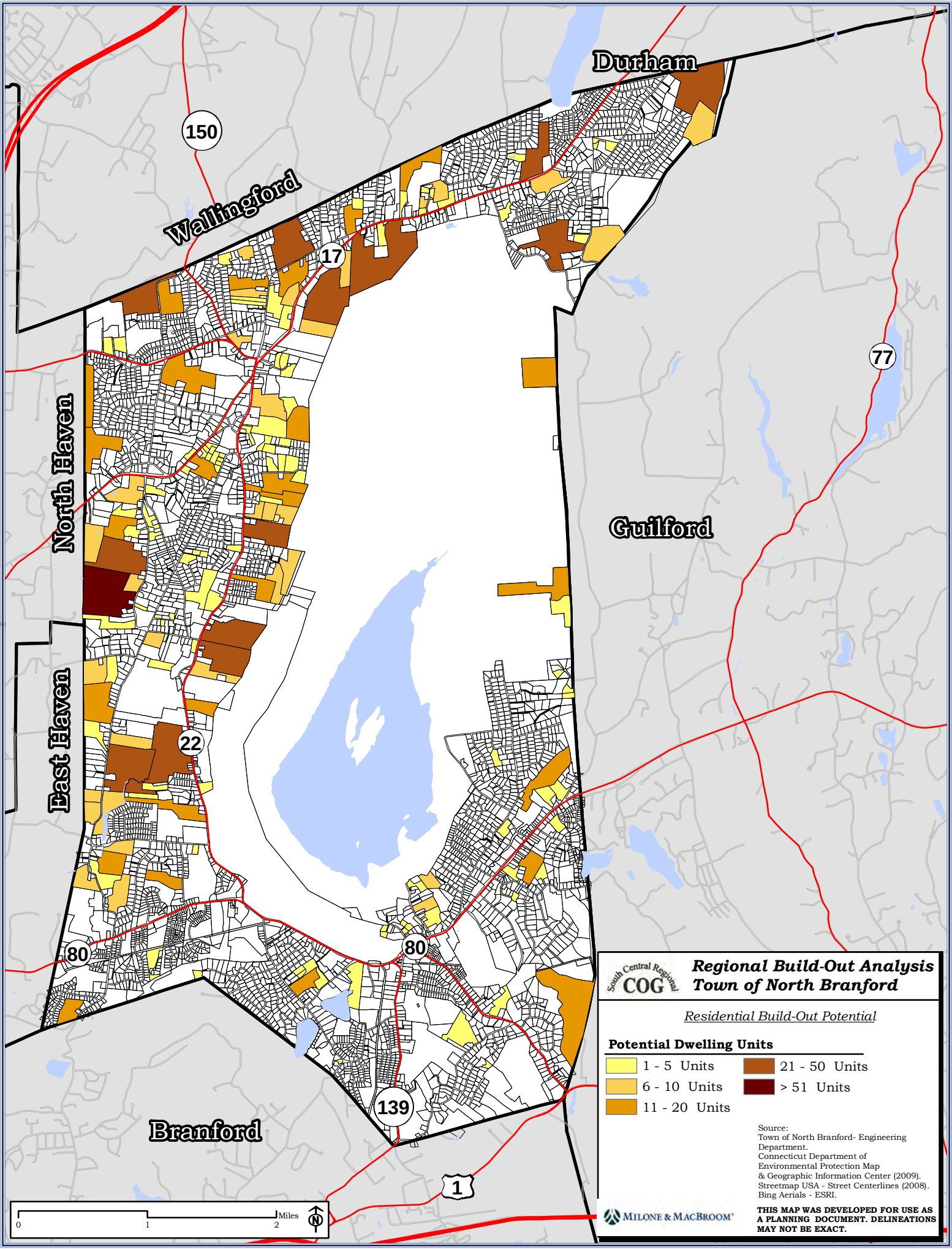
	Vacant & Agricultural Land				Underutilized Land				
Zone	**Gross Raw Vacant[1] & Agricultural Land (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units From Raw Vacant & Agricultural Land**	**Gross Land from Underutilized Lots[2] (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units Underutilized Lots**	**Total Potential Dwelling Units**
R-40	51,897,445	13,456,817	38,440,628	751	36,182,100	12,517,220	23,664,880	415	1166
R-80	11,824,334	4,203,420	7,620,915	75	13,487,426	4,880,837	8,606,589	78	153
Total:	**63,721,780**	**17,660,237**	**46,061,543**	**826**	**49,669,526**	**17,398,057**	**32,271,469**	**493**	**1,319**

[1] *Land in its natural state that has never been developed.*

[2] *Lots that have a single family residence and are greater than 5 times the minimum lot size of the underlying zone.*

Non-Residential Development Capacity

When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the town are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant & agricultural parcels zoned for non-residential use.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Regional Build-Out Analysis
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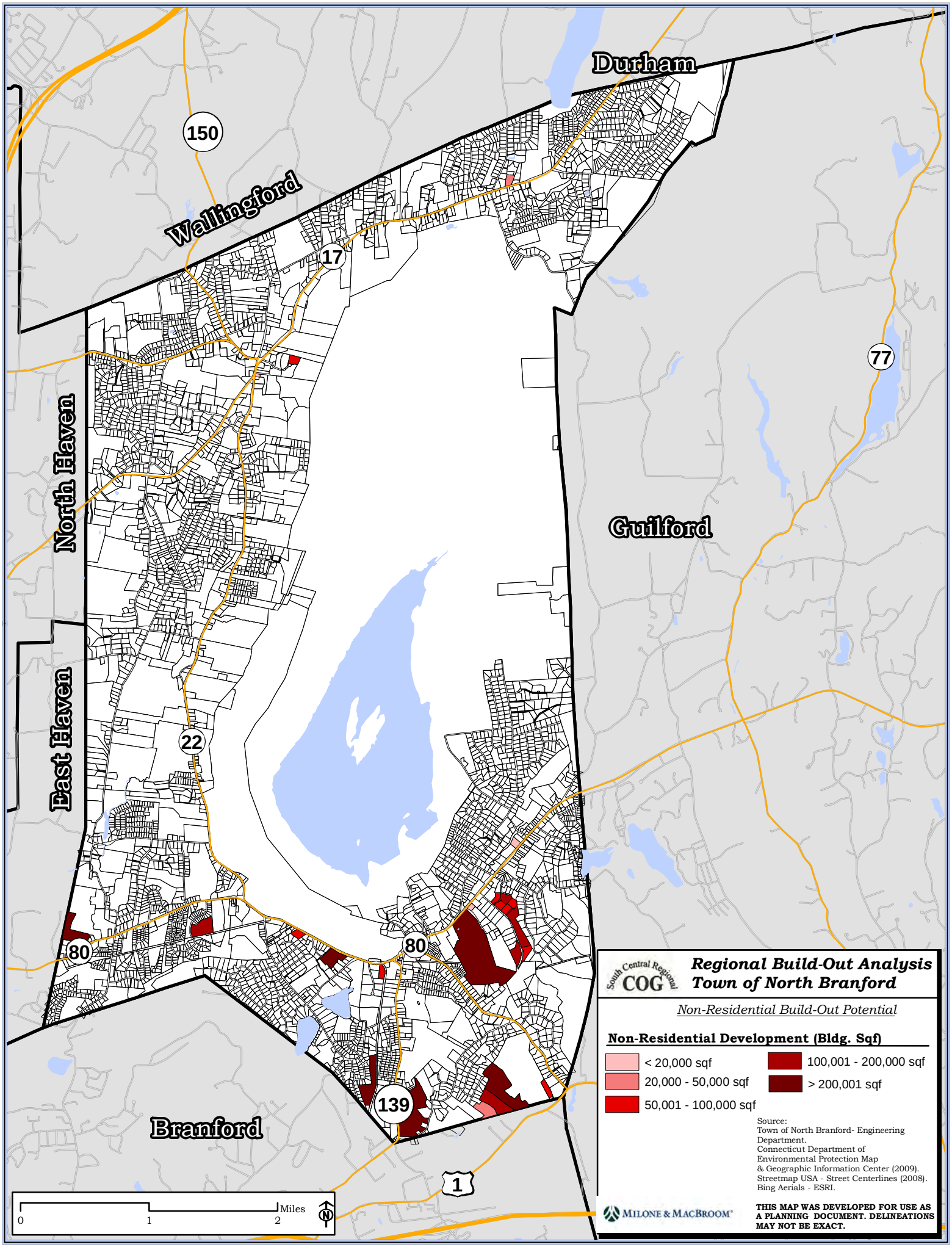
The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

Table 3
Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
B-1	1,011,879	324,133	687,746	401,643
B-2	38,255	0	38,255	22,341
B-3	157,535	6,140	151,395	88,415
I-2	4,929,915	2,328,970	2,600,945	1,831,066
I-3	7,216,942	3,395,770	3,821,173	2,231,565
Grand Total:	**13,354,527**	**6,055,012**	**7,299,515**	**4,575,030**

**Based on percent lot coverage and Floor Area Ratio (FAR) for underlying zoning.*

It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables, particularly for multifamily units. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.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Town of North Branford
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50,001 - 100,000 sqf
100,001 - 200,000 sqf
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SCRCOG Build-Out Land Use Regulatory Summary Table *North Branford, CT*						
Zone	*Zone Description*	*Minimum Lot Size*	*Minimum Lot Area per dwelling unit*	*Max Lot Coverage as percentage of lot area*	*Max Bldg Height*	*FAR*
R-80	Residence	80,000	80,000	10.0%	35	N/A
R-40	Residence	40,000	40,000	10.0%	35	N/A
RGA	Residence Garden Apartment	200,000	200,000	20.0%	35	N/A
B-1	General Business	40,000	N/A	25.0%	35	0.73
B-2	Central Business	10,000	N/A	25.0%	35	0.73
B-3	Local Business	10,000	N/A	25.0%	35	0.73
I-1	Industrial Quarry	1,089,000	N/A	10.0%	100	0.83
I-2	Industrial Quarry	80,000	N/A	30.0%	35	0.88
I-3	Industrial Quarry	120,000	N/A	25.0%	35	0.73
MBP	Mixed Business Park	40,000	N/A	25.0%	35	0.73
SED	Specialized Economic Development	80,000	N/A	30.0%	45	1.13

TOWN OF NORTH HAVEN

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Methodology

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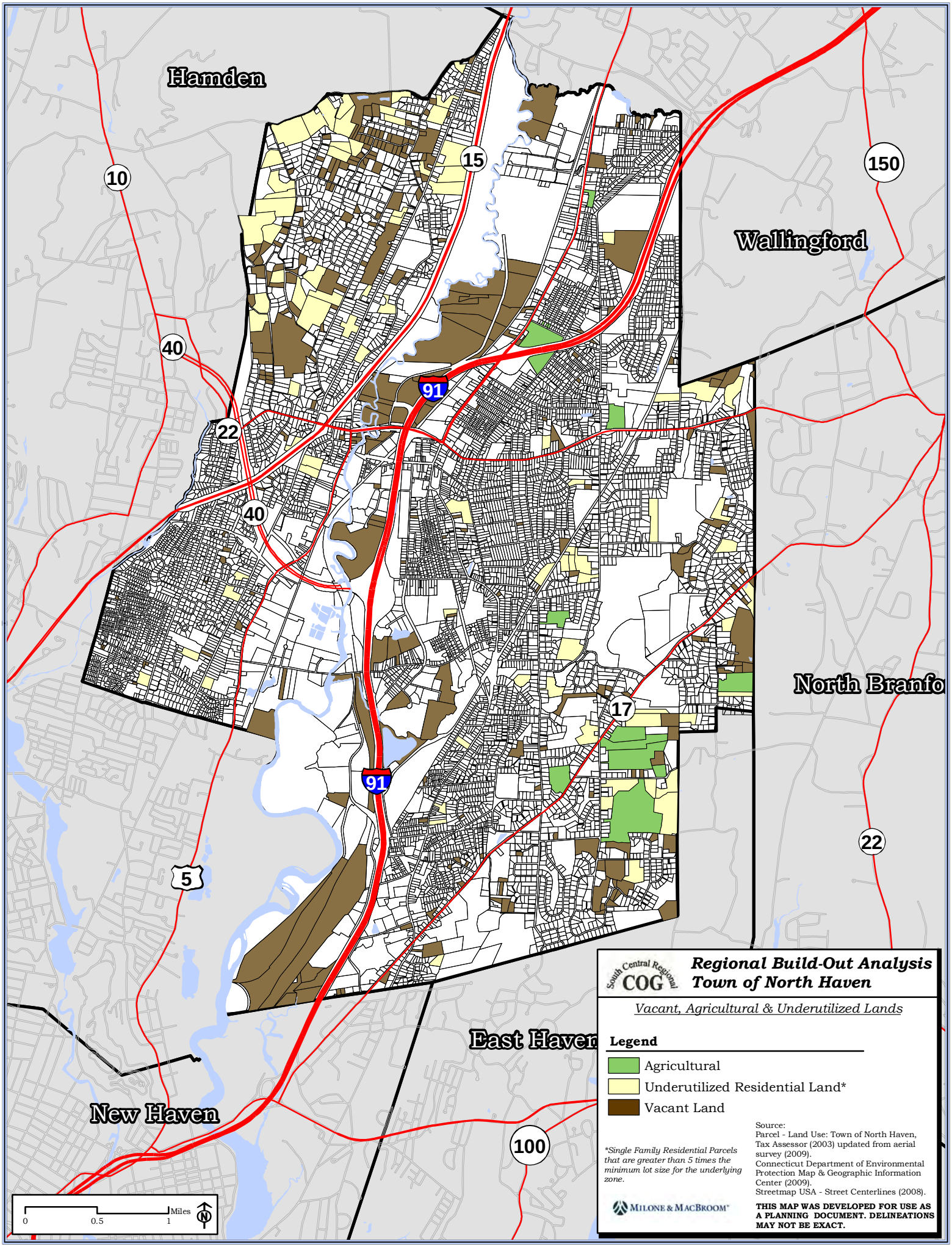
The second step of the development potential process involves calculating the developable area of the vacant, agricultural and underutilized land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slope soils (greater than 15%). These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those parcels that are large enough to be subdivided (greater than five times the minimum lot size as defined by zoning), an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that parcels were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant parcels that have an area less than the minimum lot size of the underlying zone were not included for potential dwelling units.



South Central Regional COG

Regional Build-Out Analysis
Town of North Haven

Vacant, Agricultural & Underutilized Lands

Legend

- Agricultural
- Underutilized Residential Land*
- Vacant Land

**Single Family Residential Parcels that are greater than 5 times the minimum lot size for the underlying zone.*

Source:
Parcel - Land Use: Town of North Haven, Tax Assessor (2003) updated from aerial survey (2009).
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).

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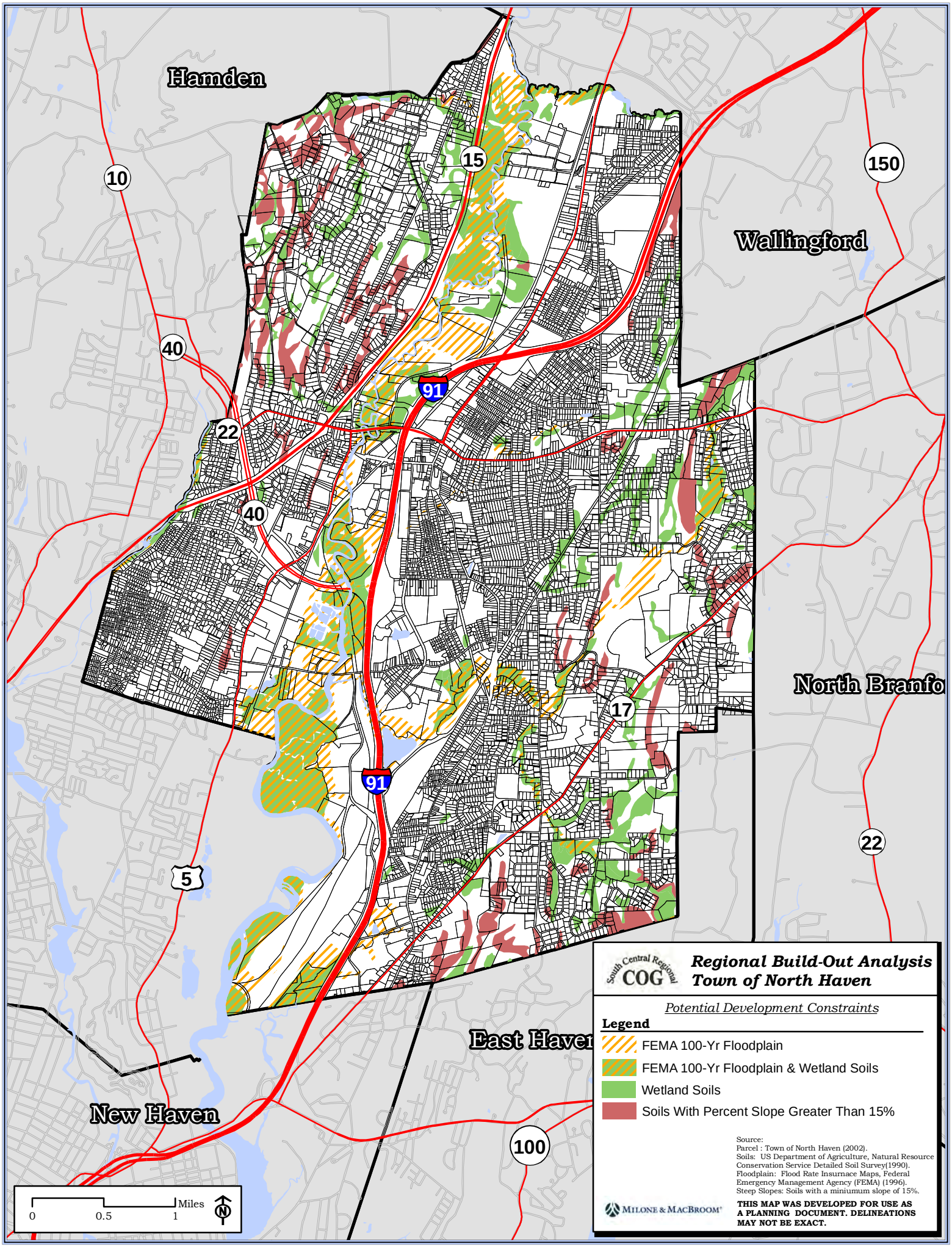
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South Central Regional COG
Regional Build-Out Analysis
Town of North Haven
Potential Development Constraints
Legend
FEMA 100-Yr Floodplain
FEMA 100-Yr Floodplain & Wetland Soils
Wetland Soils
Soils With Percent Slope Greater Than 15%
Source:
Parcel : Town of North Haven (2002).
Soils: US Department of Agriculture, Natural Resource Conservation Service Detailed Soil Survey(1990).
Floodplain: Flood Rate Insurnace Maps, Federal Emergency Management Agency (FEMA) (1996).
Steep Slopes: Soils with a miniumum slope of 15%.
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Land Analysis

Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant, Agricultural and Underutilized Lands* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land & Agricultural Land Analysis by Zone District

Zone	Vacant & Agricultural Land (acres)	% of Total Vacant Land
CA 20	0.6	**0.0%**
CB 20	9.1	**0.7%**
CB 40	9.1	**0.7%**
CN 20	1.9	**0.1%**
IG 80	191.1	**14.9%**
IL 30	16.6	**1.3%**
IL 80	356.2	**27.8%**
LO	40.2	**3.1%**
R 12	12.3	**1.0%**
R 20	49.5	**3.9%**
R 40	596.1	**46.5%**
Total:	**1,282.7**	**100.0%**

Residential Development Capacity

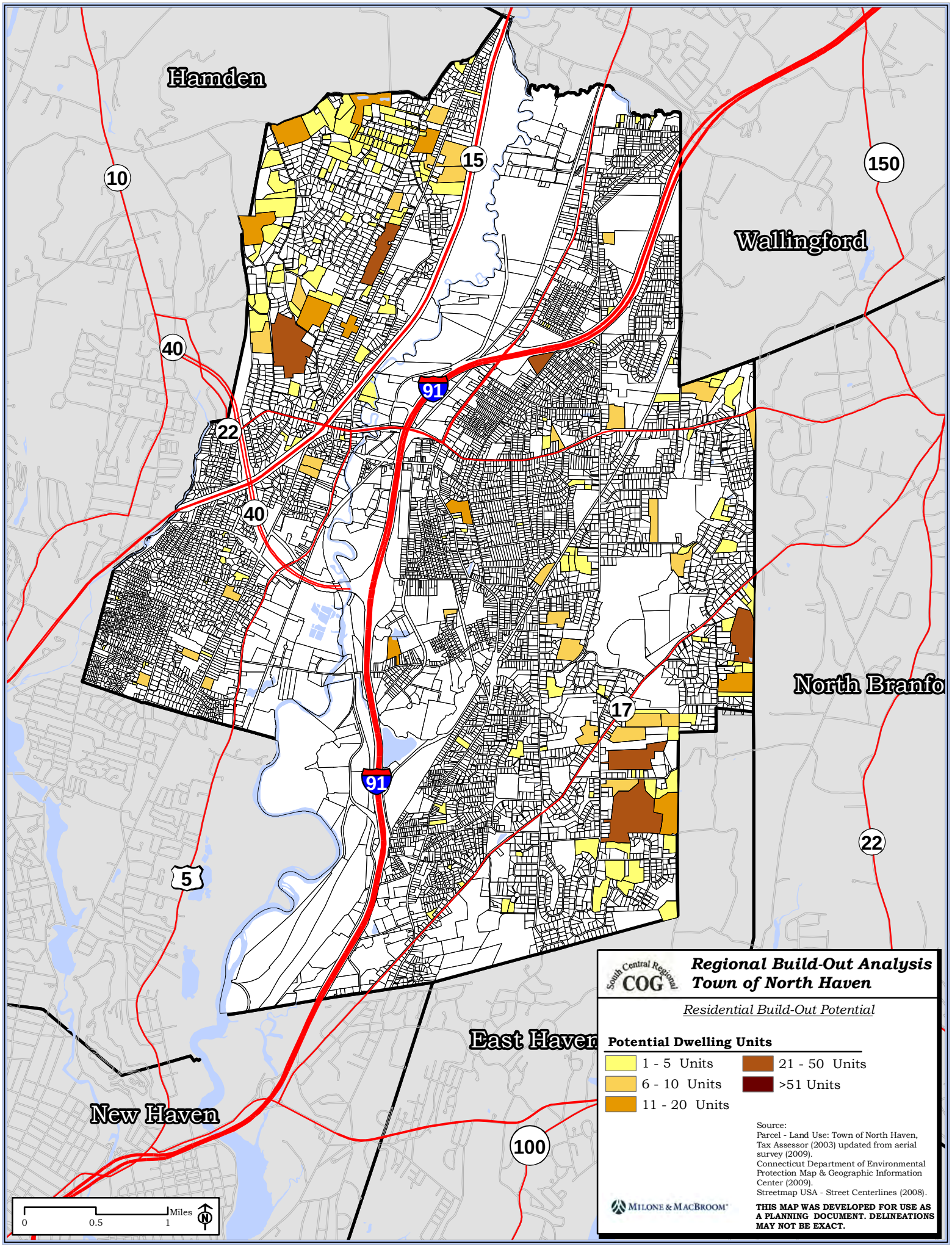
The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 814 additional dwelling units potentially could be built within the town's residential zones. Table 2 below and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.

Table 2
Residential Development Potential Under Existing Zoning Regulations

	Vacant & Agricultural Land				Underutilized Land				
Zone	**Gross Raw Vacant[(1)] & Agricultural Land (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units From Raw Vacant & Agricultural Land**	**Gross Land from Underutilized Lots[(2)] (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units Underutilized Lots**	**Total Potential Dwelling Units**
R 12	534,925	0	534,925	36	103,595	0	103,595	6	42
R 20	2,157,246	934,948	1,222,298	47	5,120,568	795,307	4,325,261	146	193
R 40	25,967,590	8,971,505	16,996,085	337	23,724,846	9,037,031	14,687,815	242	579
Total:	**28,659,761**	**9,906,453**	**18,753,308**	**420**	**28,949,009**	**9,832,338**	**19,116,671**	**394**	**814**

(1) Land in its natural state that has never been developed.

(2) Lots that have a single family residence and are greater than 5 times the minimum lot size of the underlying zone.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Regional Build-Out Analysis
Town of North Haven
Residential Build-Out Potential
Potential Dwelling Units
1 - 5 Units
6 - 10 Units
11 - 20 Units
21 - 50 Units
>51 Units
Source:
Parcel - Land Use: Town of North Haven, Tax Assessor (2003) updated from aerial survey (2009).
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
THIS MAP WAS DEVELOPED FOR USE AS A PLANNING DOCUMENT. DELINEATIONS MAY NOT BE EXACT.
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Non-Residential Development Capacity

When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the town are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant & agricultural parcels zoned for non-residential use.

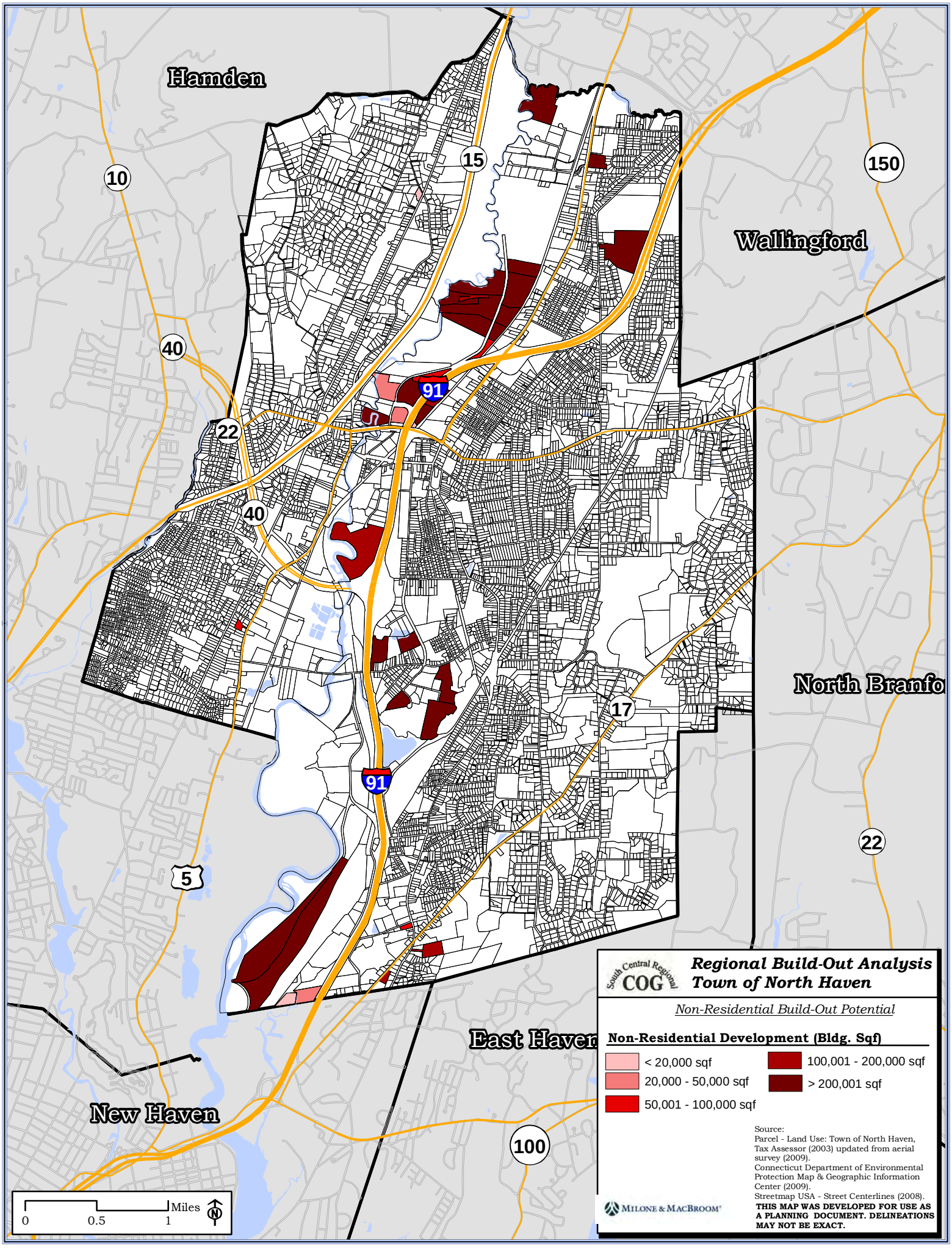
The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

Table 3
Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
CA 20	25,554	0	25,554	14,924
CB 20	397,476	161,688	235,788	137,700
CB 40	395,483	0	395,483	291,075
CN 20	81,141	52,403	28,739	16,783
IG 80	8,322,861	2,961,967	5,360,894	7,505,251
IL 30	724,306	10,479	713,828	999,358
IL 80	15,144,602	9,703,208	5,441,394	7,617,951
LO	1,752,222	424,737	1,327,485	467,275
Grand Total:	**26,843,646**	**13,314,481**	**13,529,165**	**17,050,317**

**Based on percent lot coverage and Floor Area Ratio (FAR) for underlying zoning.*

It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables, particularly for multifamily units. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.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Regional Build-Out Analysis
Town of North Haven
Non-Residential Build-Out Potential
Non-Residential Development (Bldg. Sqf)
< 20,000 sqf
20,000 - 50,000 sqf
50,001 - 100,000 sqf
100,001 - 200,000 sqf
> 200,001 sqf
Source:
Parcel - Land Use: Town of North Haven, Tax Assessor (2003) updated from aerial survey (2009).
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
THIS MAP WAS DEVELOPED FOR USE AS A PLANNING DOCUMENT. DELINEATIONS MAY NOT BE EXACT.
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Attachments

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SCRCOG Build-Out Land Use Regulatory Summary Table *North Haven, CT*						
Zone	*Zone Description*	*Minimum Lot Size*	*DW Units Area Per*	*Percent Coverage*	*Max Height*	*FAR*
CA-20	Commercial	20,000	N/A	25%	35	0.73
CB-20	Commercial	20,000	N/A	25%	35	0.73
CB-40	Commercial	40,000	N/A	20%	55	0.92
CN-20	Commercial	20,000	N/A	25%	35	0.73
EH	Elderly Housing	200,000	13.5	N/A	N/A	N/A
IG-80	General Industrial	80,000	N/A	35%	60	1.75
IL-30	Light Industrial	30,000	N/A	35%	60	1.75
IL-80	Light Industrial	80,000	N/A	35%	60	1.75
LC-12	Limited Commercial	12,000	N/A	25%	35	0.73
LO	Limited Office	653,400	N/A	15%	35	0.44
O-12	Office	12,000	N/A	25%	35	0.73
OS	Open Space	N/A	N/A	N/A	N/A	N/A
R-12	Residence	12,000	N/A	N/A	N/A	N/A
R-20	Residence	20,000	N/A	N/A	N/A	N/A
R-40	Residence	40,000	N/A	N/A	N/A	N/A
RA-12	Residence-Apartment	12000 Single / 160,000 Multi	8/acre	N/A	N/A	N/A
RA-20	Residence-Apartment	20,000 Single / 160,000 Multi	8/acre	N/A	N/A	N/A
RA-40	Residence-Apartment	40,000 Single / 160,000 Multi	8/acre	N/A	N/A	N/A
OA-12	Office-Apartment	12,000 Single / 80,000 Multi	10/acre	N/A	N/A	N/A

TOWN OF ORANGE

SCRCOG Regional Build-Out Analysis – Town of Orange

ANALYSIS OF DEVELOPMENT CAPACITY

As a component of the South Central Regional Council of Government's Unified Planning Work Program for Fiscal Year 2010, an analysis was conducted assessing the development potential for the Town of Orange. This analysis reviewed vacant, agricultural and underutilized land for residential and non-residential uses for its physical capacity to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and gross building square footage for non-residentially zoned land. Underutilized parcels for this analysis have been defined as residentially zoned parcels that are greater than five times the minimum lot size by zone.

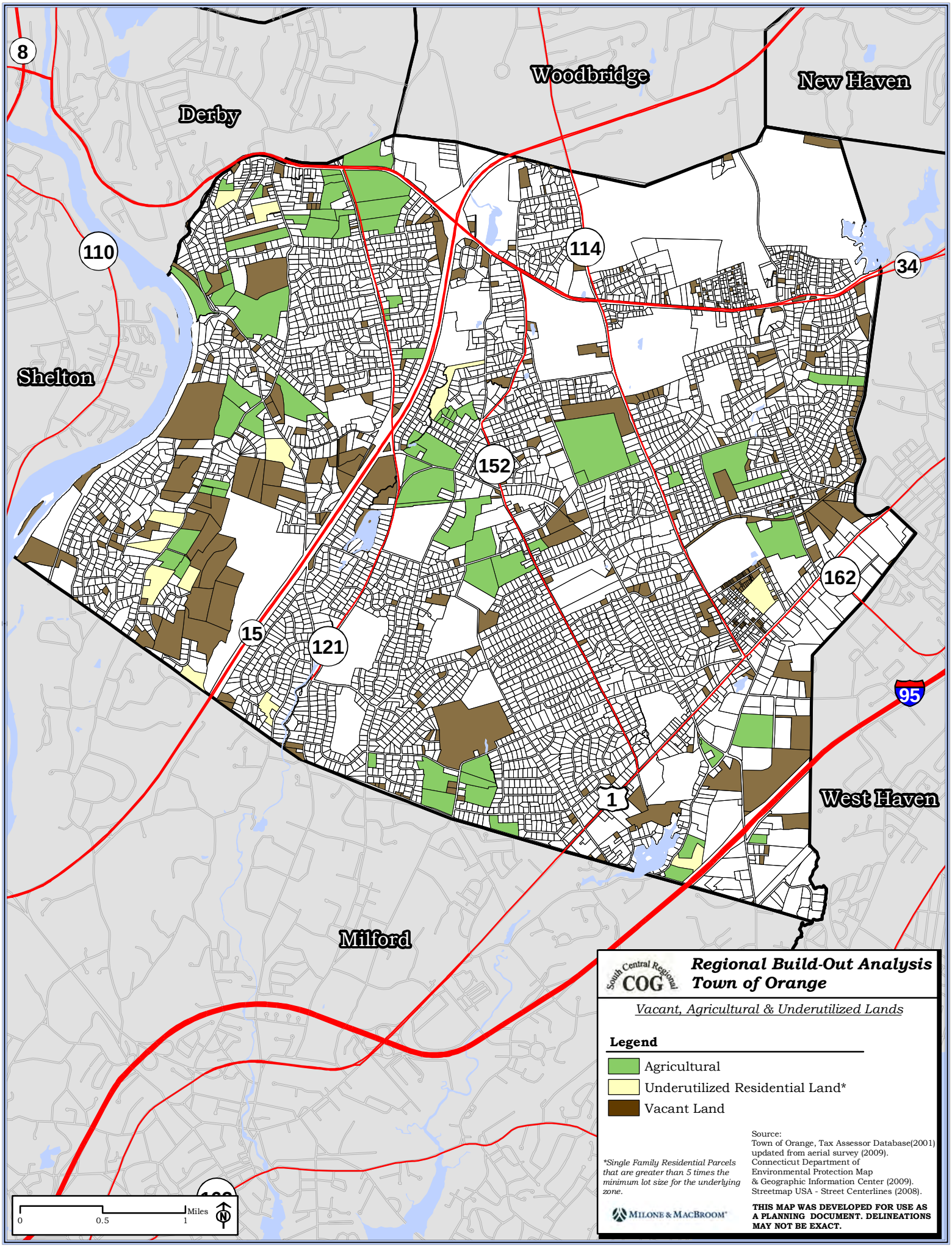
The development capacity calculated represents a reasonable scenario of growth but not an absolute buildout of every parcel in Orange to a maximum density.

Methodology

The process to calculate development potential for vacant land involves three basic steps. First, the total amount of vacant, agricultural, and underutilized land is determined by reviewing the assessor records through the GIS parcel database. The parcels have been identified on the map titled *Vacant, Agricultural and Underutilized Lands*.

The second step of the development potential process involves calculating the developable area of the vacant, agricultural and underutilized land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slope soils (greater than 15%). These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those parcels that are large enough to be subdivided (greater than five times the minimum lot size as defined by zoning), an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that parcels were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant parcels that have an area less than the minimum lot size of the underlying zone were not included for potential dwelling units.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Regional Build-Out Analysis
Town of Orange
Vacant, Agricultural & Underutilized Lands
Legend
Agricultural
Underutilized Residential Land*
Vacant Land
*Single Family Residential Parcels that are greater than 5 times the minimum lot size for the underlying zone.
Source:
Town of Orange, Tax Assessor Database(2001) updated from aerial survey (2009).
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
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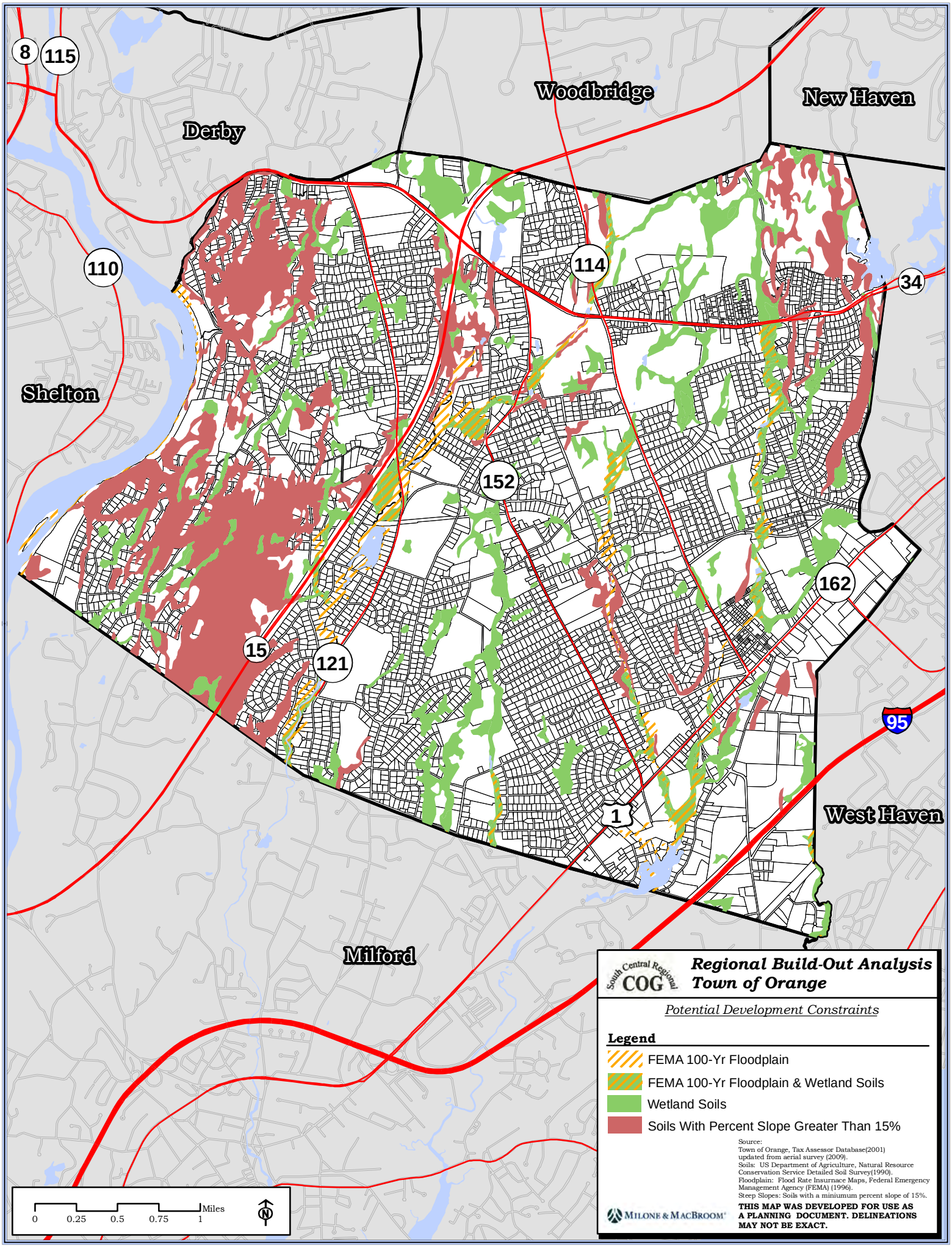
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Town of Orange
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Legend
FEMA 100-Yr Floodplain
FEMA 100-Yr Floodplain & Wetland Soils
Wetland Soils
Soils With Percent Slope Greater Than 15%
Source:
Town of Orange, Tax Assessor Database(2001) updated from aerial survey (2009).
Soils: US Department of Agriculture, Natural Resource Conservation Service Detailed Soil Survey(1990).
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Steep Slopes: Soils with a miniumum percent slope of 15%.
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Land Analysis

Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant, Agricultural and Underutilized Lands* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land & Agricultural Land Analysis by Zone District

Zone	Vacant & Agricultural Land (acres)	% of Total Vacant Land
BOP	18.9	**1.3%**
C-1	0.6	**0.0%**
C-2	7.6	**0.5%**
LI-2	106.6	**7.5%**
LI-4	10.1	**0.7%**
LSC	1.1	**0.1%**
R	1,284.7	**89.9%**
Total:	**1,429.7**	**100.0%**

Residential Development Capacity

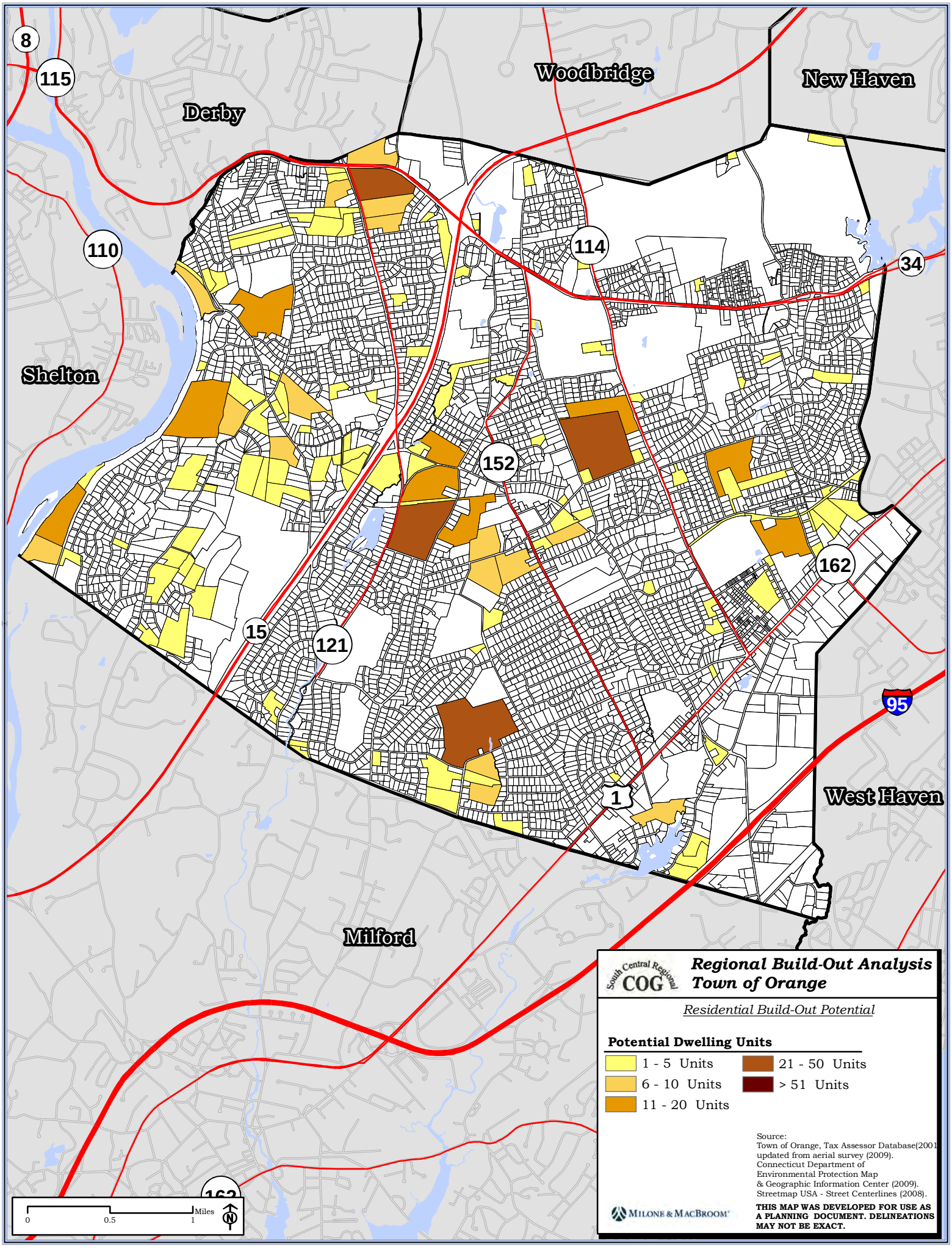
The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 537 additional dwelling units potentially could be built within the town's residential zones. Table 2 below and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.

Table 2
Residential Development Potential Under Existing Zoning Regulations

	Vacant & Agricultural Land				Underutilized Land				
Zone	**Gross Raw Vacant[1] & Agricultural Land (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units From Raw Vacant & Agricultural Land**	**Gross Land from Underutilized Lots[2] (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units Underutilized Lots**	**Total Potential Dwelling Units**
R	73,031,411	34,774,338	39,205,678	515	5,762,980	3,315,736	2,447,243	22	537
Total:	**73,031,411**	**34,774,338**	**39,205,678**	**515**	**5,762,980**	**3,315,736**	**2,447,243**	**22**	**537**

[1] *Land in its natural state that has never been developed.*

[2] *Lots that have a single family residence and are greater than 5 times the minimum lot size of the underlying zone.*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Regional Build-Out Analysis
Town of Orange
Residential Build-Out Potential
Potential Dwelling Units
1 - 5 Units
6 - 10 Units
11 - 20 Units
21 - 50 Units
> 51 Units
Source:
Town of Orange, Tax Assessor Database(2001 updated from aerial survey (2009).
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Non-Residential Development Capacity

When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the town are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant & agricultural parcels zoned for non-residential use.

The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

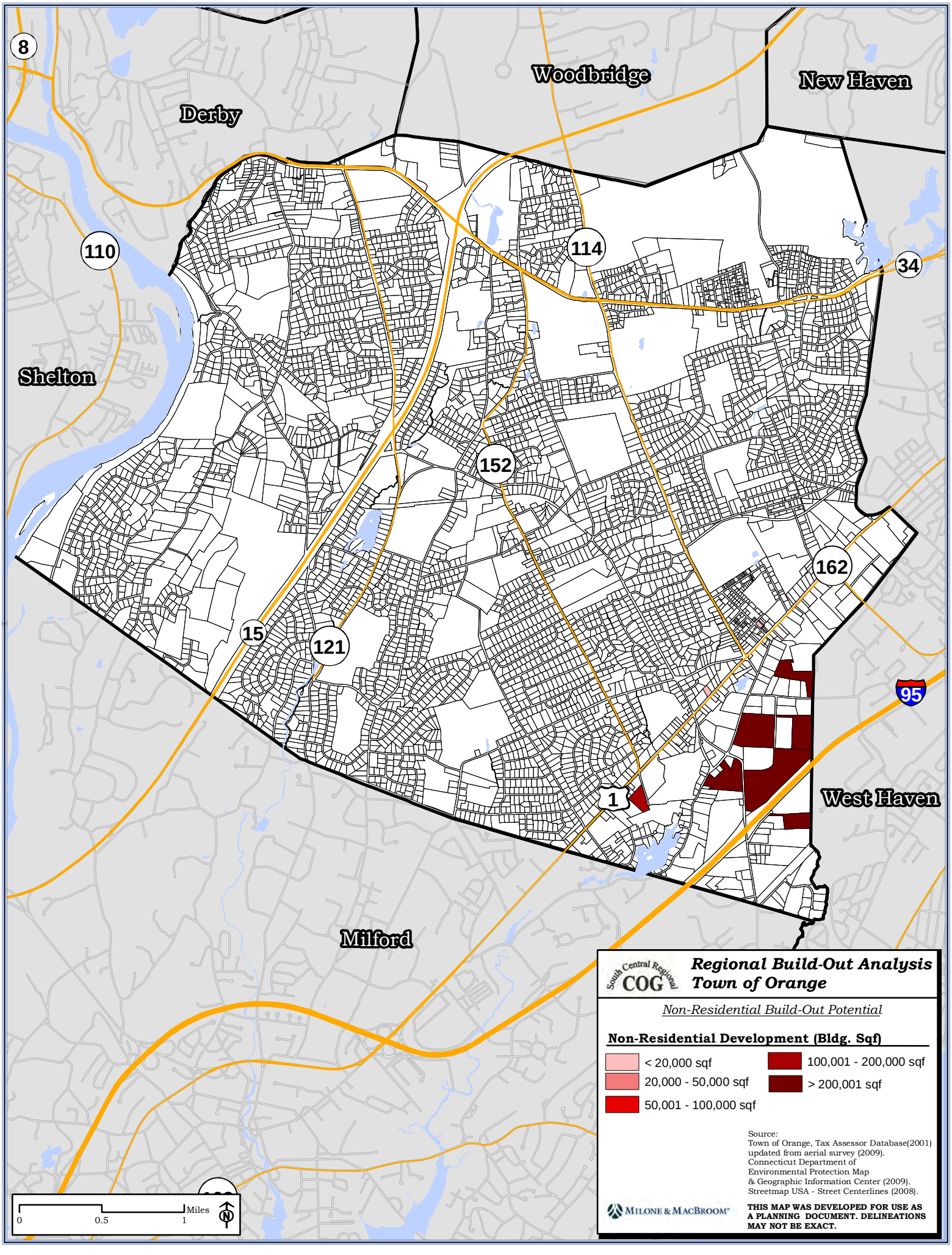
Table 3

Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
BOP	822,163	0	822,163	822,163
C-1	25,487	0	25,487	16,924
C-2	331,935	73,418	258,518	171,656
LI-2	4,643,028	814,101	3,828,928	6,126,285
LI-4	440,073	76,692	363,380	581,409
LSC	49,589	32,579	17,010	11,295
Grand Total:	**6,312,276**	**996,790**	**5,315,486**	**7,729,732**

**Based on percent lot coverage and Floor Area Ratio (FAR) for underlying zoning.*

It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables, particularly for multifamily units. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.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Non-Residential Build-Out Potential
Non-Residential Development (Bldg. Sqf)
< 20,000 sqf
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50,001 - 100,000 sqf
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Source:
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SCRCOG Build-Out Land Use Regulatory Summary Table *Orange, CT*						
Zone	*Zone Description*	*Minimum Lot Size*	*Minimum Lot Area per dwelling unit*	*Max Lot Coverage as percentage of lot area*	*Max Bldg Height*	*FAR*
R	Residence	60,000	60,000	10.0%	35	N/A
C-1	Commercial	25,000	N/A	25.0%	40	0.83
C-2	Commercial	25,000	N/A	25.0%	40	0.83
LSC	Local Shopping Center	25,000	N/A	25.0%	40	0.83
LI-1	Light Industrial	87,120	N/A	40.0%	40	1.33
LI-2	Light Industrial	87,120	N/A	40.0%	60	2.00
LI-3	Light Industrial	87,120	N/A	35.0%	40	1.17
LI-4	Light Industrial	87,120	N/A	40.0%	60	2.00
OP	Office Park	87,120	87,120	10.0%	35	0.29
BOP	Business Office Park	348,480	N/A	25.0%	60	1.25

TOWN OF WALLINGFORD

SCRCOG Regional Build-Out Analysis - Town of Wallingford

ANALYSIS OF DEVELOPMENT CAPACITY

As a component of the South Central Regional Council of Government's Unified Planning Work Program for Fiscal Year 2010, an analysis was conducted assessing the development potential for the Town of Wallingford. This analysis reviewed vacant, agricultural and underutilized land for residential and non-residential uses for its physical capacity to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and gross building square footage for non-residentially zoned land. Underutilized parcels for this analysis have been defined as residentially zoned parcels that are greater than five times the minimum lot size by zone.

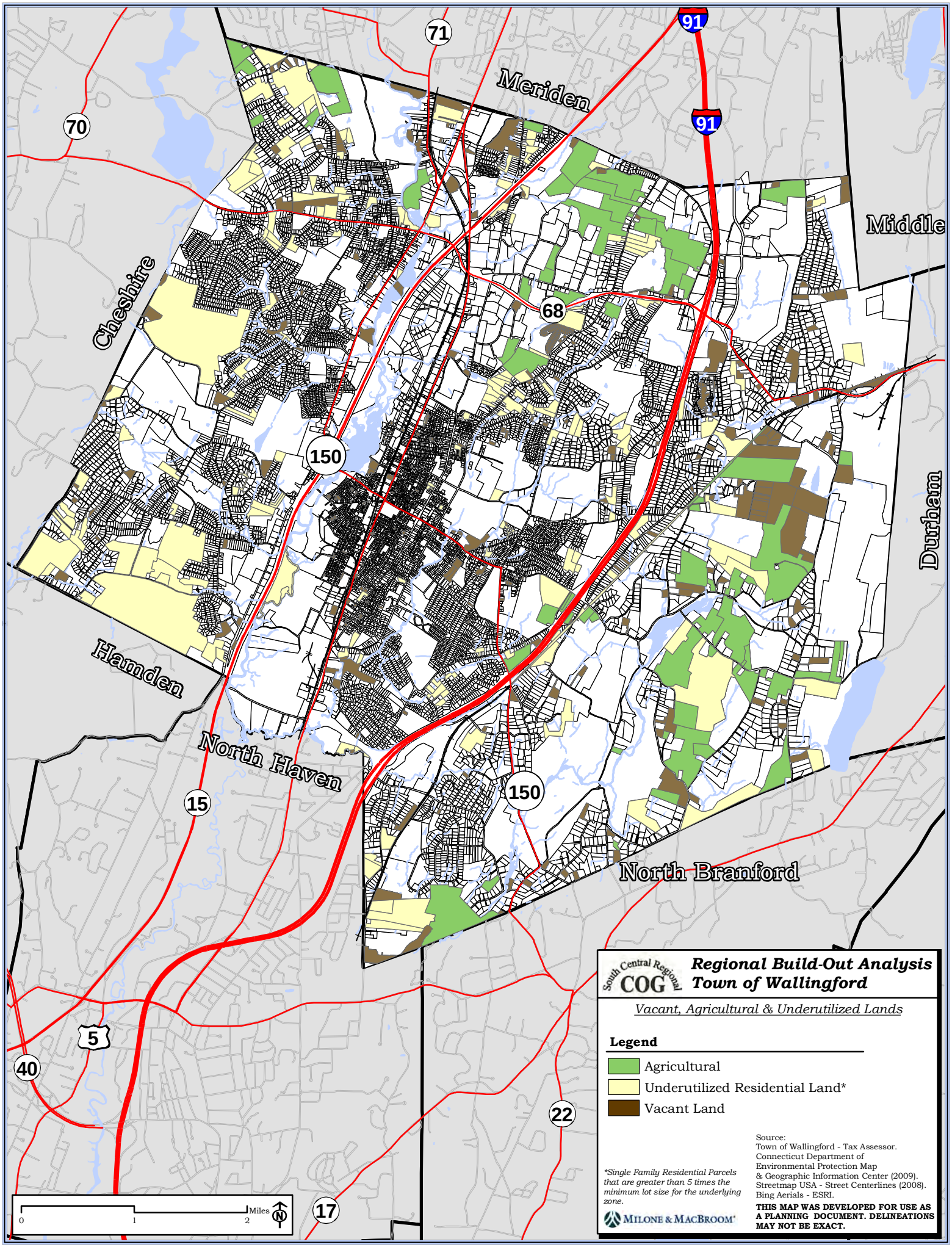
The development capacity calculated represents a reasonable scenario of growth but not an absolute buildout of every parcel in Wallingford to a maximum density.

Methodology

The process to calculate development potential for vacant land involves three basic steps. First, the total amount of vacant, agricultural, and underutilized land is determined by reviewing the assessor records through the GIS parcel database. The parcels have been identified on the map titled *Vacant, Agricultural and Underutilized Lands*.

The second step of the development potential process involves calculating the developable area of the vacant, agricultural and underutilized land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slope soils (greater than 15%). These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those parcels that are large enough to be subdivided (greater than five times the minimum lot size as defined by zoning), an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that parcels were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant parcels that have an area less than the minimum lot size of the underlying zone were not included for potential dwelling units.



South Central Regional COG

Regional Build-Out Analysis
Town of Wallingford

Vacant, Agricultural & Underutilized Lands

Legend

- Agricultural
- Underutilized Residential Land*
- Vacant Land

**Single Family Residential Parcels that are greater than 5 times the minimum lot size for the underlying zone.*

Source:
Town of Wallingford - Tax Assessor.
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
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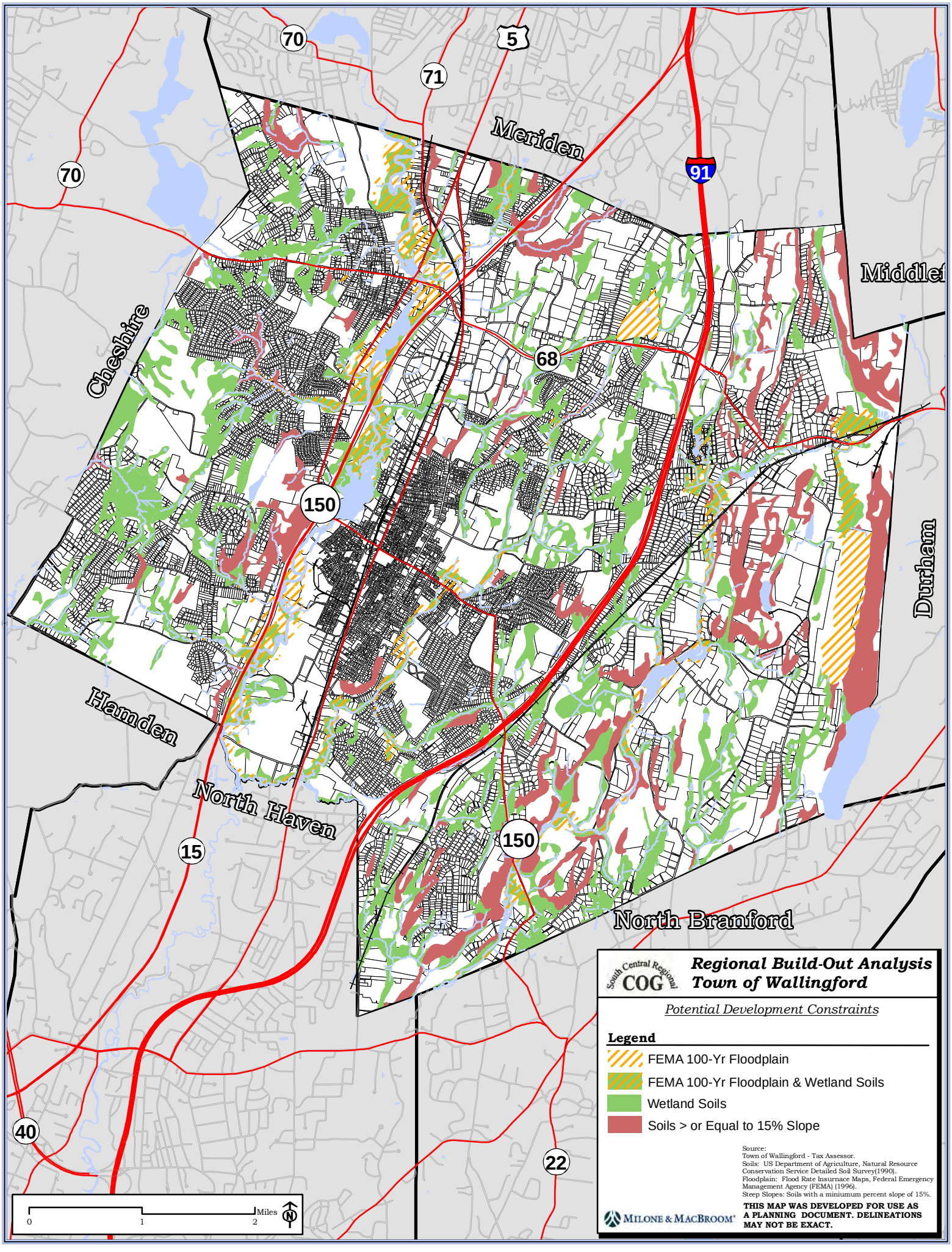
MILONE & MACBROOM



South Central Regional COG

Regional Build-Out Analysis
Town of Wallingford

Potential Development Constraints

Legend

- FEMA 100-Yr Floodplain
- FEMA 100-Yr Floodplain & Wetland Soils
- Wetland Soils
- Soils > or Equal to 15% Slope

Source:
Town of Wallingford - Tax Assessor.
Soils: US Department of Agriculture, Natural Resource Conservation Service Detailed Soil Survey(1990).
Floodplain: Flood Rate Insurnace Maps, Federal Emergency Management Agency (FEMA) (1996).
Steep Slopes: Soils with a miniumum percent slope of 15%.

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MILONE & MACBROOM

Land Analysis

Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant, Agricultural and Underutilized Lands* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land & Agricultural Land Analysis by Zone District

Zone	Vacant & Agricultural Land (acres)	% of Total Vacant Land
CA12	0.8	**0.0%**
CA40	0.6	**0.0%**
CB12	1.6	**0.1%**
CB40	8.9	**0.4%**
DD40	14.5	**0.6%**
I20	0.5	**0.0%**
I40	31.4	**1.3%**
I5	137.0	**5.7%**
IX	246.2	**10.2%**
R11	4.0	**0.2%**
R15	17.7	**0.7%**
R18	261.0	**10.9%**
R6	7.9	**0.3%**
RF40	25.5	**1.1%**
RM6	10.6	**0.4%**
RU120	1,074.6	**44.7%**
RU40	312.3	**13.0%**
RU80	231.3	**9.6%**
T30	15.8	**0.7%**
YLB	0.1	**0.0%**
Total:	**2,402.2**	**100.0%**

Residential Development Capacity

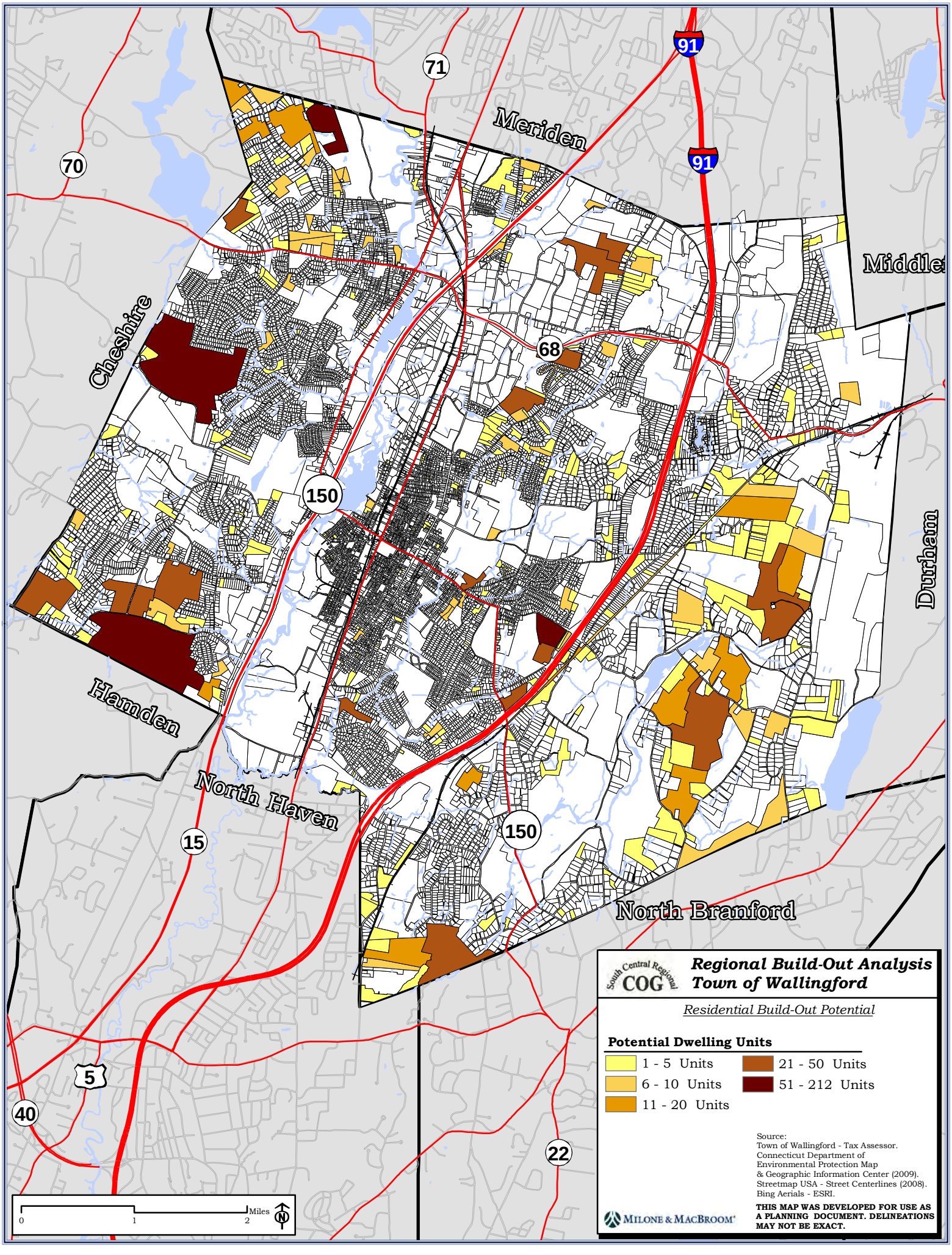
The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 2,115 additional dwelling units potentially could be built within the town's residential zones. Table 2 below and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.

Table 2
Residential Development Potential Under Existing Zoning Regulations

	Vacant & Agricultural Land				Underutilized Land				
Zone	Gross Raw Vacant[(1)] & Agricultural Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Dwelling Units From Raw Vacant & Agricultural Land	Gross Land from Underutilized Lots[(2)] (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Dwelling Units Underutilized Lots	Total Potential Dwelling Units
R-11	174,115	12,867	161,248	7	574,003	63,978	510,025	29	36
R-15	770,334	90	770,244	38	0	0	0	0	38
R-18	11,369,300	4,361,995	7,481,843	289	15,097,935	6,345,409	8,752,526	325	614
R-6	345,814	47,839	297,976	33	149,040	0	149,040	15	48
RM-6	461,450	296,938	164,511	41	0	0	0	0	41
RU-120	46,809,634	13,528,478	33,281,156	216	16,289,209	5,243,484	11,045,725	65	281
RU-40	13,602,081	5,161,125	8,445,929	160	57,899,883	17,424,044	40,475,839	748	908
RU-80	10,074,153	4,836,986	5,505,823	56	6,310,994	2,459,372	3,851,622	33	89
T-30	687,030	596,881	90,149	8	0	0	0	0	0
Total:	**84,293,911**	**28,843,200**	**56,198,879**	**848**	**96,321,063**	**31,536,288**	**64,784,776**	**1,215**	**2,055**

[(1)] *Land in its natural state that has never been developed.*

[(2)] *Lots that have a single family residence and are greater than 5 times the minimum lot size of the underlying zone.*



South Central Regional COG

Regional Build-Out Analysis
Town of Wallingford

Residential Build-Out Potential

Potential Dwelling Units

- 1 - 5 Units
- 6 - 10 Units
- 11 - 20 Units
- 21 - 50 Units
- 51 - 212 Units

Source:
Town of Wallingford - Tax Assessor.
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
Bing Aerials - ESRI.

MILONE & MACBROOM

THIS MAP WAS DEVELOPED FOR USE AS A PLANNING DOCUMENT. DELINEATIONS MAY NOT BE EXACT.

Non-Residential Development Capacity

When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the town are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant & agricultural parcels zoned for non-residential use.

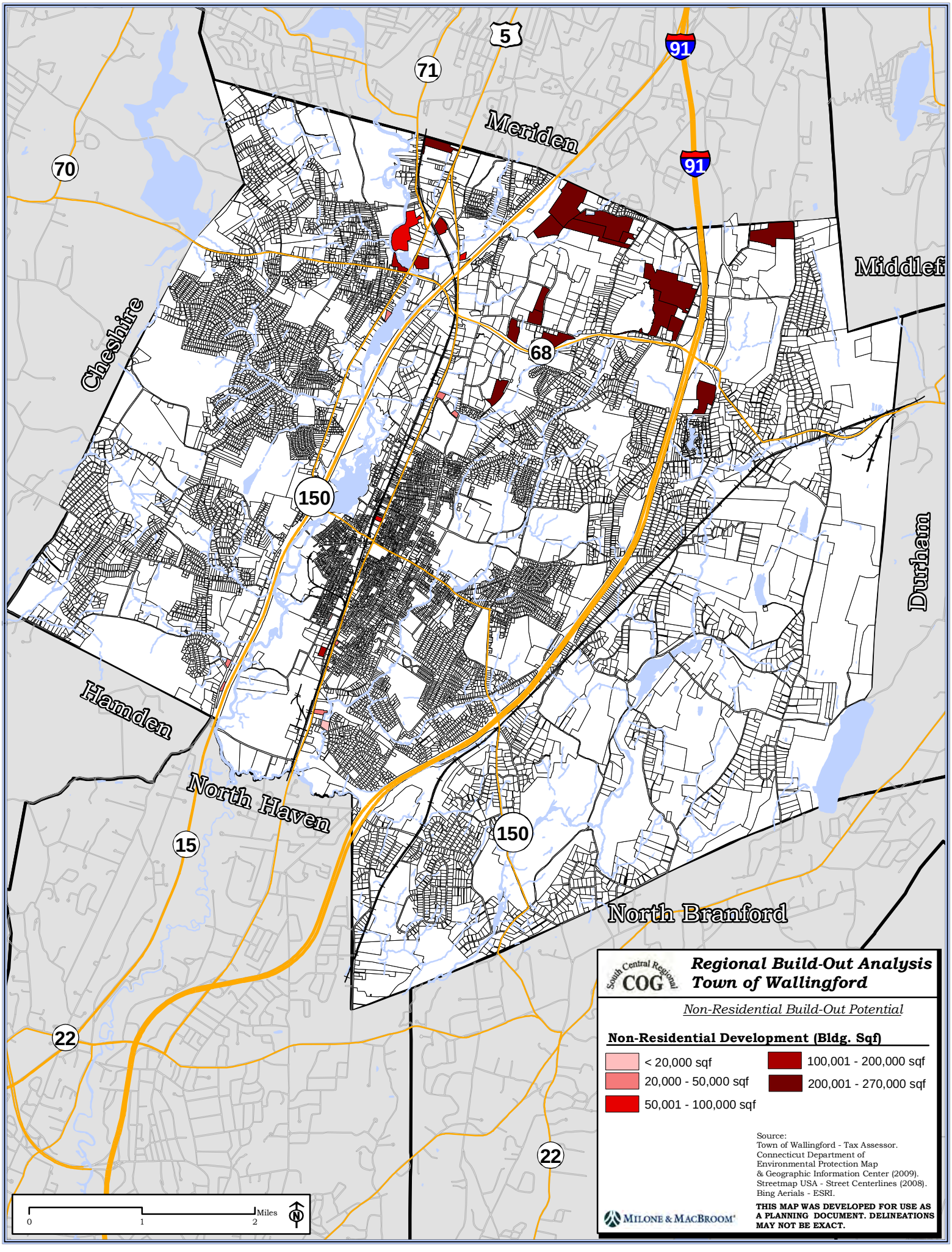
The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

Table 3
Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
CA12	237,434	101,882	135,552	119,286
CB12	57,591	0	57,591	50,681
CB40	370,328	210,759	159,570	140,421
DD40	68,187	37,863	30,324	26,685
I20	21,744	0	21,744	18,265
I40	1,701,189	1,343,397	357,792	314,857
I5	5,772,530	2,102,924	3,669,606	3,449,430
IX	10,292,040	2,469,784	7,822,256	12,202,719
RF40	1,088,471	349,821	738,651	553,988
YLB	82,604	23,255	59,349	22,553
Grand Total:	**19,692,118**	**6,639,683**	**13,052,434**	**16,898,885**

**Based on percent lot coverage and Floor Area Ratio (FAR) for underlying zoning.*

It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables, particularly for multifamily units. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.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North Haven
North Branford
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Regional Build-Out Analysis
Town of Wallingford
Non-Residential Build-Out Potential
Non-Residential Development (Bldg. Sqf)
< 20,000 sqf
20,000 - 50,000 sqf
50,001 - 100,000 sqf
100,001 - 200,000 sqf
200,001 - 270,000 sqf
Source:
Town of Wallingford - Tax Assessor.
Connecticut Department of
Environmental Protection Map
& Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
Bing Aerials - ESRI.
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Attachments

SCRCOG Build-Out Land Use Regulatory Summary Table

Wallingford, CT

Zone	*Zone Description*	*Minimum Lot Size*	*Minimum Lot Area per dwelling unit*	*Max Lot Coverage as percentage of lot area*	*Max Bldg Height*	*FAR*
R18	Residence	18,000	18,000	15.0%	30	NA
R15	Residence	15,000	15,000	20.0%	30	NA
R11	Residence	11,250	11,250	25.0%	30	NA
R6	Residence	6,250	6,250	33.5%	30	NA
HOD	Housing Opportunity District	1,132,560	14,520	N/A	30	NA
RM40	Multi-Family Districts	217,800	12,100	15.0%	40	NA
RM18	Multi-Family Districts	217,800	8,066.7	25.0%	30	NA
RM11	Multi-Family Districts	217,800	4,312.9	25.0%	30	NA
RM6	Multi-Family Districts	217,800	3,133.8	25.0%	30	NA
HODMF	Housing Opportunity District-Multi-Family	261,360	7,260	N/A	30	NA
RU160	Rural Residential	160,000	160,000	5.0%	30	NA
RU120	Rural Residential	120,000	120,000	5.0%	30	NA
RU80	Rural Residential	80,000	80,000	10.0%	30	NA
RU40	Rural Residential	40,000	40,000	10.0%	30	NA
CLB	Central Limited Business	11,250	11,250	25.0%	30	0.63
YLB	Yalesville Limited Business	11,250	11,250	15.0%	30	0.38
NB	Neighborhood Business	20,000	N/A	20.0%	30	0.50
RF40	Route 5 District	40,000	N/A	30.0%	30	0.75
CA40	Commercial	40,000	N/A	35.0%	30	0.88
CA12	Commercial	12,000	N/A	35.0%	30	0.88
CA6	Commercial	6,250	N/A	50.0%	30	1.25
CB40	Commercial	40,000	N/A	35.0%	30	0.88
CB12	Commercial	12,000	N/A	35.0%	30	0.88
I5	Interchange District	217,800	N/A	15.0%	75	0.94
DD40	Design District	40,000	N/A	35.0%	30	0.88
DD18	Design District	18,000	N/A	35.0%	30	0.88
I40	Industrial	40,000	N/A	35.0%	30	0.88
I20	Industrial	20,000	N/A	33.5%	30	0.84
IX	Industrial Expansion District	217,800	N/A	25.0%	75	1.56
DA	Downtown Apartment	25,000	Varies	35.0%	30	0.88
QS	Quarry Support District	200,000	N/A	10.0%	30	0.25
WHOD	Wallingford Housing Opportunity District	261,360	Varies	N/A	30	NA
T30	Tracy Zone	30,000	10,000	30.0%	30	0.75
OSPRD	Open Space Planned Residential District	Varies	Varies	Varies	Varies	NA

CITY OF WEST HAVEN

SCRCOG Regional Build-Out Analysis - City of West Haven

ANALYSIS OF DEVELOPMENT CAPACITY

As a component of the South Central Regional Council of Government's Unified Planning Work Program for Fiscal Year 2010, an analysis was conducted assessing the development potential for the City of West Haven. This analysis reviewed vacant, agricultural and underutilized land for residential and non-residential uses for its physical capacity to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and gross building square footage for non-residentially zoned land. Underutilized parcels for this analysis have been defined as residentially zoned parcels that are greater than five times the minimum lot size by zone.

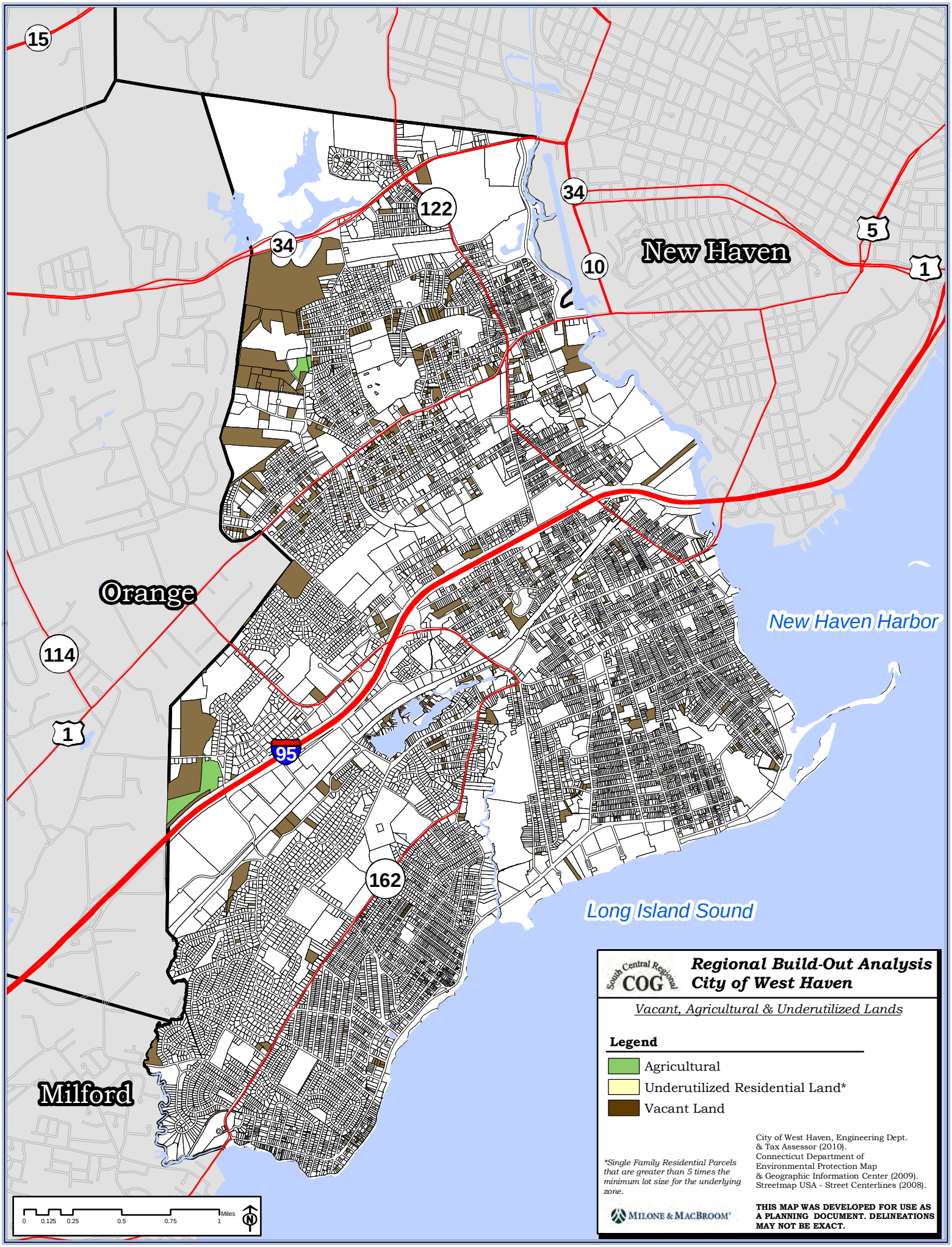
The development capacity calculated represents a reasonable scenario of growth but not an absolute buildout of every parcel in West Haven to a maximum density.

Methodology

The process to calculate development potential for vacant land involves three basic steps. First, the total amount of vacant, agricultural, and underutilized land is determined by reviewing the assessor records through the GIS parcel database. The parcels have been identified on the map titled *Vacant, Agricultural and Underutilized Lands*.

The second step of the development potential process involves calculating the developable area of the vacant, agricultural and underutilized land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slope soils (greater than 15%). These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those parcels that are large enough to be subdivided (greater than five times the minimum lot size as defined by zoning), an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that parcels were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant parcels that have an area less than the minimum lot size of the underlying zone were not included for potential dwelling units.



South Central Regional COG

Regional Build-Out Analysis
City of West Haven

Vacant, Agricultural & Underutilized Lands

Legend

- Agricultural
- Underutilized Residential Land*
- Vacant Land

**Single Family Residential Parcels that are greater than 5 times the minimum lot size for the underlying zone.*

City of West Haven, Engineering Dept. & Tax Assessor (2010).
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).

MILONE & MACBROOM

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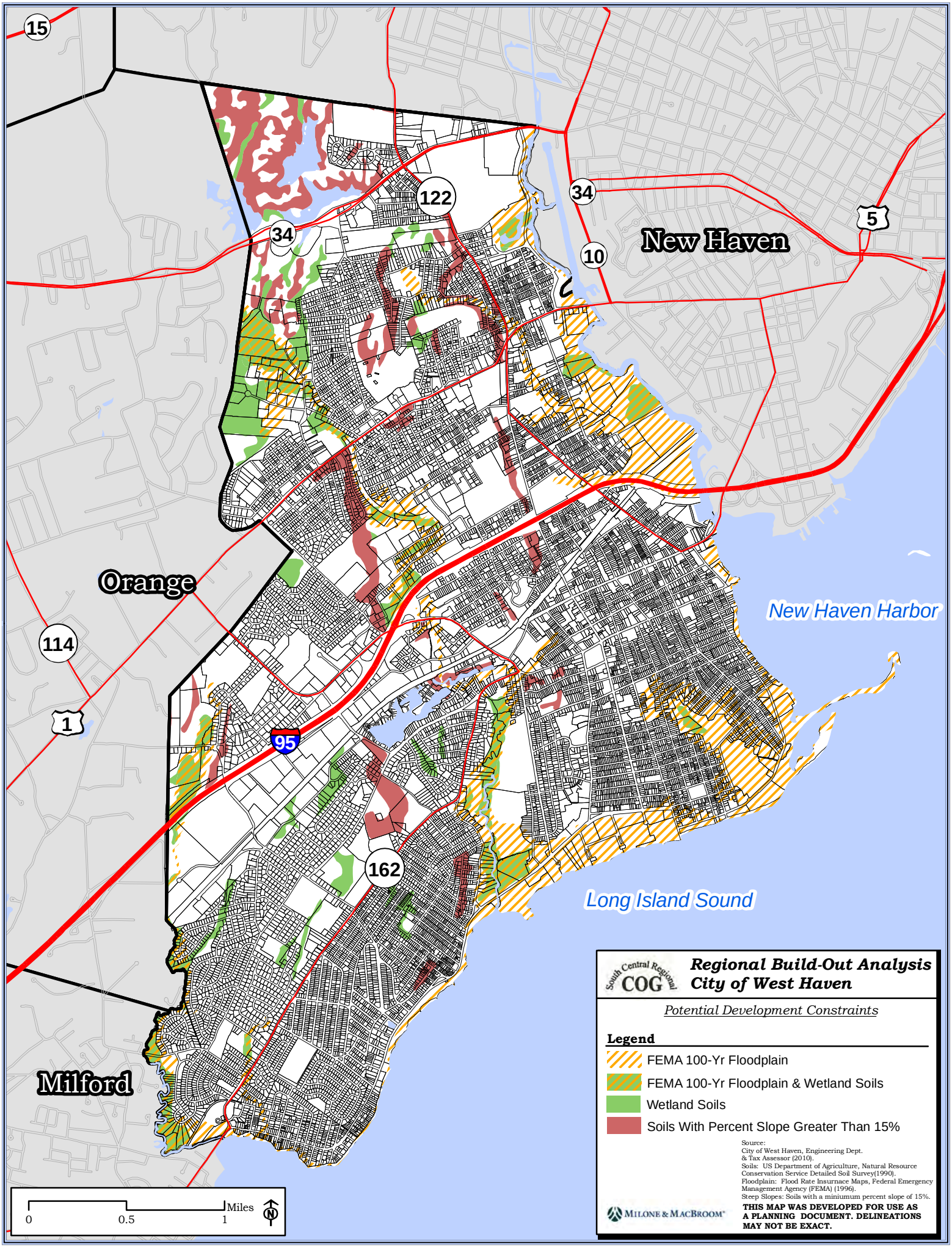
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Miles
South Central Regional COG
Regional Build-Out Analysis
City of West Haven
Potential Development Constraints
Legend
FEMA 100-Yr Floodplain
FEMA 100-Yr Floodplain & Wetland Soils
Wetland Soils
Soils With Percent Slope Greater Than 15%
Source:
City of West Haven, Engineering Dept.
& Tax Assessor (2010).
Soils: US Department of Agriculture, Natural Resource Conservation Service Detailed Soil Survey(1990).
Floodplain: Flood Rate Insurnace Maps, Federal Emergency Management Agency (FEMA) (1996).
Steep Slopes: Soils with a miniumum percent slope of 15%.
Milone & MacBroom
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Land Analysis

Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant, Agricultural and Underutilized Lands* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land & Agricultural Land Analysis by Zoning District

Zone	Vacant & Agricultural Land (acres)	% of Total Vacant Land
CBD	4.0	**1.2%**
CD	2.1	**0.6%**
IPD	157.9	**45.6%**
LM	68.2	**19.7%**
NB	8.7	**2.5%**
R1	4.8	**1.4%**
R2	58.9	**17.0%**
R3	10.2	**2.9%**
R5	2.6	**0.8%**
RB	20.2	**5.9%**
RCPD	3.1	**0.9%**
SCR	1.5	**0.4%**
SRR	0.6	**0.2%**
TOD	2.3	**0.7%**
WD	0.7	**0.2%**
Total:	**346.1**	**100.0%**

Residential Development Capacity

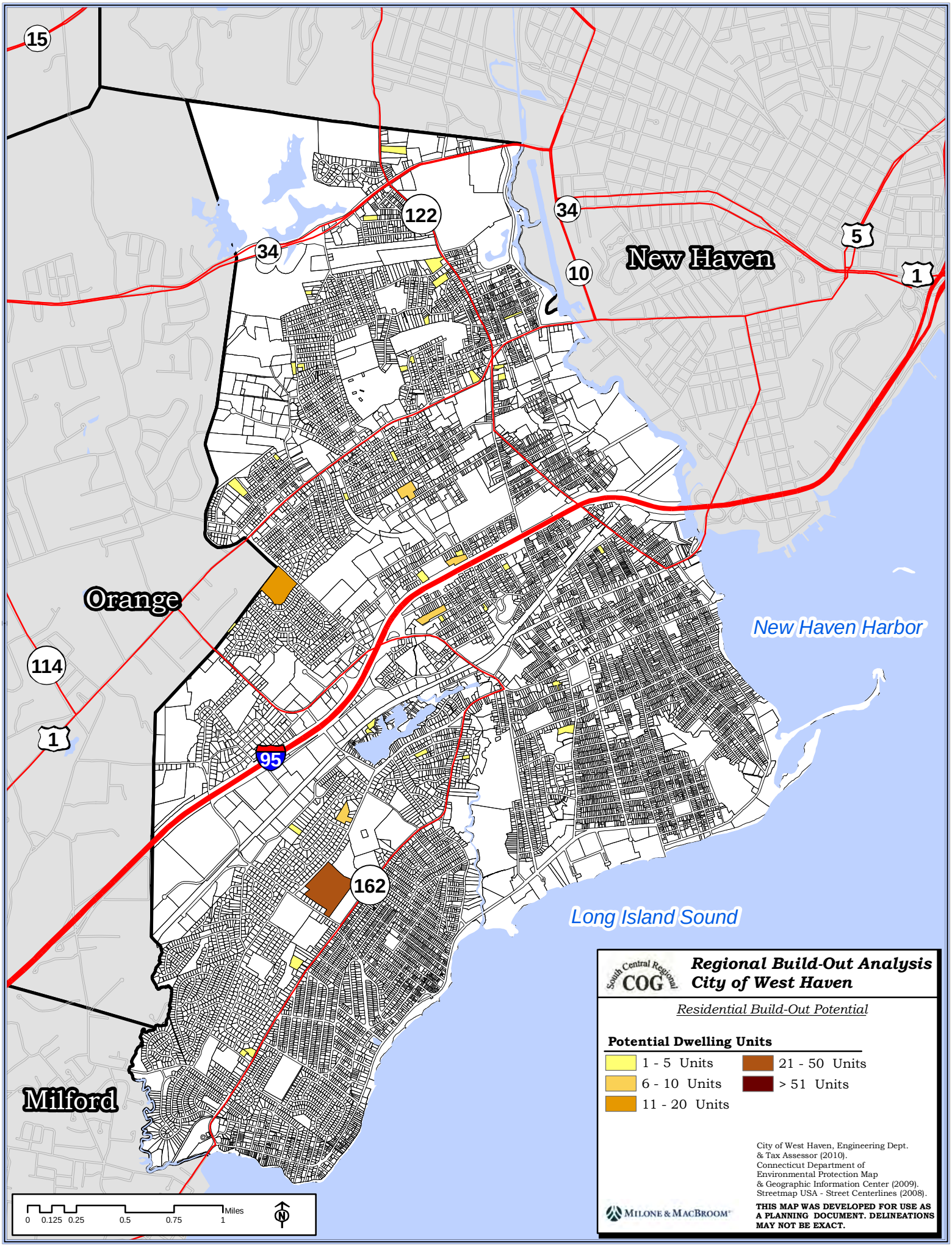
The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 131 additional dwelling units potentially could be built within the city's residential zones. Table 2 below and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.

Table 2
Residential Development Potential Under Existing Zoning Regulations

	Vacant & Agricultural Land				Underutilized Land				
Zone	**Gross Raw Vacant[1] & Agricultural Land (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units From Raw Vacant & Agricultural Land**	**Gross Land from Underutilized Lots[2] (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units Underutilized Lots**	**Total Potential Dwelling Units**
R1	209,647	259	209,388	10	1,138,351	440,030	698,321	33	43
R2	2,567,567	1,586,276	981,290	46	437,739	282,688	155,051	7	53
R3	444,659	102,659	342,000	19	163,930	0	163,930	9	28
R5	115,263	0	115,263	1	0	0	0	0	1
RCPD	136,649	22,827	113,822	6	0	0	0	0	6
Total:	**3,473,784**	**1,712,021**	**1,761,764**	**82**	**1,740,020**	**722,718**	**1,017,302**	**49**	**131**

[1] *Land in its natural state that has never been developed.*

[2] *Lots that have a single family residence and are greater than 5 times the minimum lot size of the underlying zone.*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Long Island Sound
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South Central Regional COG
Regional Build-Out Analysis
City of West Haven
Residential Build-Out Potential
Potential Dwelling Units
1 - 5 Units
6 - 10 Units
11 - 20 Units
21 - 50 Units
> 51 Units
City of West Haven, Engineering Dept. & Tax Assessor (2010).
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
MILONE & MACBROOM
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Non-Residential Development Capacity

When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the city are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant & agricultural parcels zoned for non-residential use.

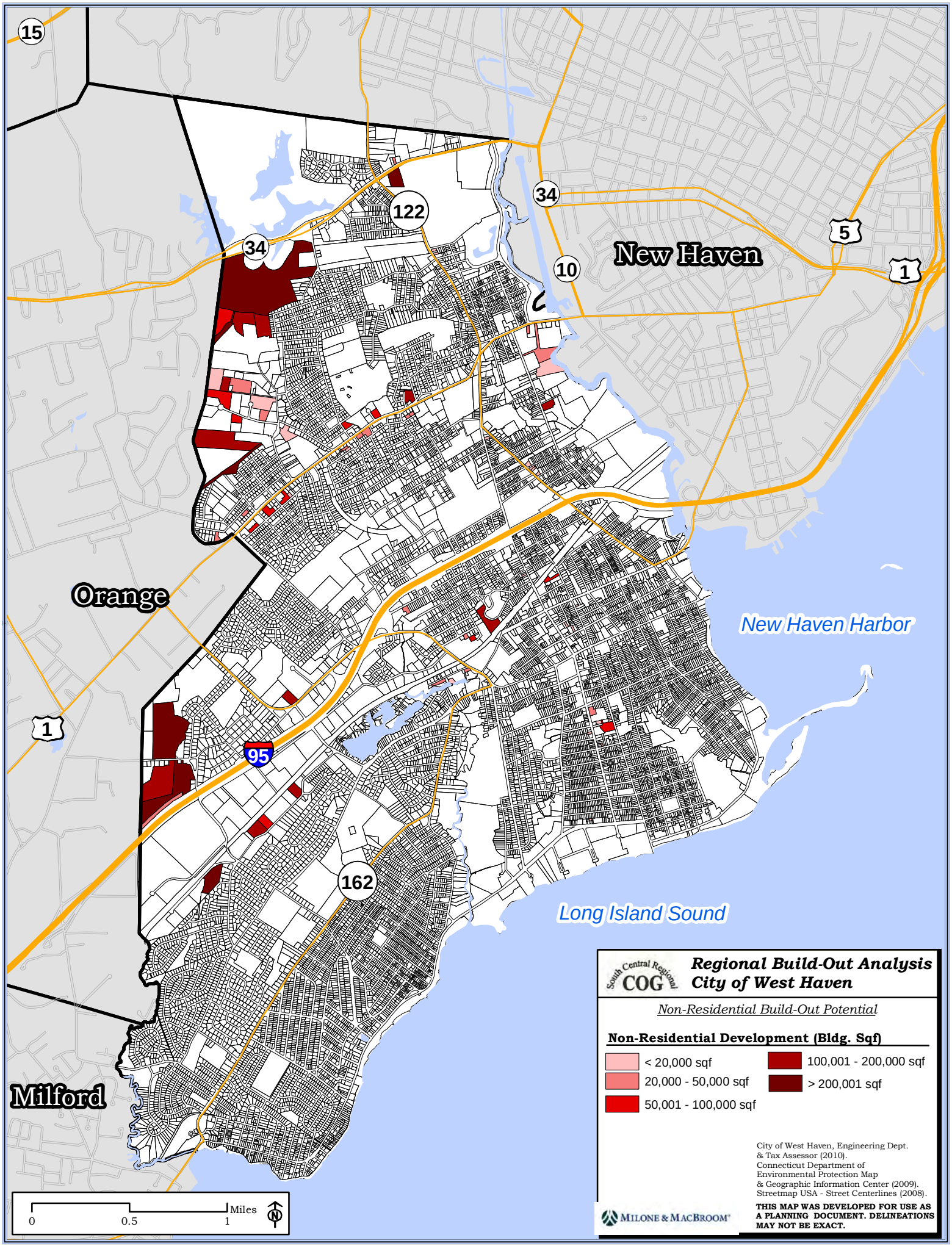
The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

Table 3
Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
CBD	175,507	8,170	167,337	151,273
CD	89,944	0	89,944	161,900
IPD	6,750,932	4,039,502	2,711,430	4,338,288
LM	2,972,781	1,704,467	1,268,314	2,364,137
NB	322,770	21,252	301,517	352,174
RB	870,292	251,543	618,749	1,029,598
SRR	14,749	12,844	1,905	1,341
TOD	98,622	36,795	61,826	164,704
WD	32,527	0	32,527	86,651
Grand Total:	**11,328,123**	**6,074,573**	**5,253,550**	**8,650,066**

**Based on percent lot coverage and Floor Area Ratio (FAR) for underlying zoning.*

It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables, particularly for multifamily units. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.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South Central Regional COG
Regional Build-Out Analysis
City of West Haven
Non-Residential Build-Out Potential
Non-Residential Development (Bldg. Sqf)
< 20,000 sqf
20,000 - 50,000 sqf
50,001 - 100,000 sqf
100,001 - 200,000 sqf
> 200,001 sqf
City of West Haven, Engineering Dept. & Tax Assessor (2010).
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
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Milone & MacBroom

Attachments

SCRCOG Build-Out Land Use Regulatory Summary Table *West Haven, CT*						
Zone	*Zone Description*	*Minimum Lot Size*	*Minimum Lot Area per dwelling unit*	*Max Lot Coverage as percentage of lot area*	*Max Bldg Height*	*FAR*
R-1	Single-Family Residential	20,000	20,000	20.0%	35	N/A
R-2	Single-Family Residential	16,000	16,000	20.0%	35	N/A
R-3	Multi-Family Residential	16,000	16,000 / 12,000 / 10,000*	20.0%	40	N/A
R-4	Multi-Family Residential	80,000	12,000	25.0%	40	N/A
R-5	Multi-Family Residential	80,000	7,000	30.0%	50	N/A
NB	Neighborhood Business	6,000	2,000	50.0%	35	1.46
RB	Regional Business	10,000	N/A	50.0%	50	2.08
CBD	Central Business District	3,000	1,000	30.0%	45	1.13
SCR	Shoreline Commercial District	40,000	N/A	30.0%	35	0.88
LM	Light Manufacturing	40,000	N/A	35.0%	80	2.33
IPD	Industrial Planned Development	40,000	N/A	40.0%	60	2
RPD	Residential Design District	40,000	2,000	25.0%	45	0.94
RCPD	Residential-Commercial Design District	20,000	8,000	25.0%	45	0.94
CD	Commercial Design District	20,000	16,000	60.0%	45	2.25
SRR	Shoreline Residential/Retail Design District	7,500	5,000	30.0%	35	0.88
PRD	Planned Research and Development District	871,200	N/A	40.0%	100	3.33
TOD	Transit Oriented Design District	87,120 (6,000 per lot)	1,000	40.0%	100	3.33
WD	Waterfront Design District	653,400 (20,000 per lot)	2,000**	40.0%	45/100	3.33
OS	Open Space	None	N/A	Varies	Varies	N/A
PF	Public Facilities	None	N/A	Varies	Varies	N/A
PVD	Planned Village District	435,600 (9,500 per lot)	Varies**	50.0%	45	1.88

* For 1/2/3 unit buildings.

** By Special Permit.

TOWN OF WOODBRIDGE

SCRCOG Regional Build-Out Analysis – Town of Woodbridge

ANALYSIS OF DEVELOPMENT CAPACITY

As a component of the South Central Regional Council of Government's Unified Planning Work Program for Fiscal Year 2010, an analysis was conducted assessing the development potential for the Town of Woodbridge. This analysis reviewed vacant, agricultural and underutilized land for residential and non-residential uses for its physical capacity to support new or expanded growth. This growth is expressed in terms of potential dwelling units for residentially zoned land and gross building square footage for non-residentially zoned land. Underutilized parcels for this analysis have been defined as residentially zoned parcels that are greater than five times the minimum lot size by zone.

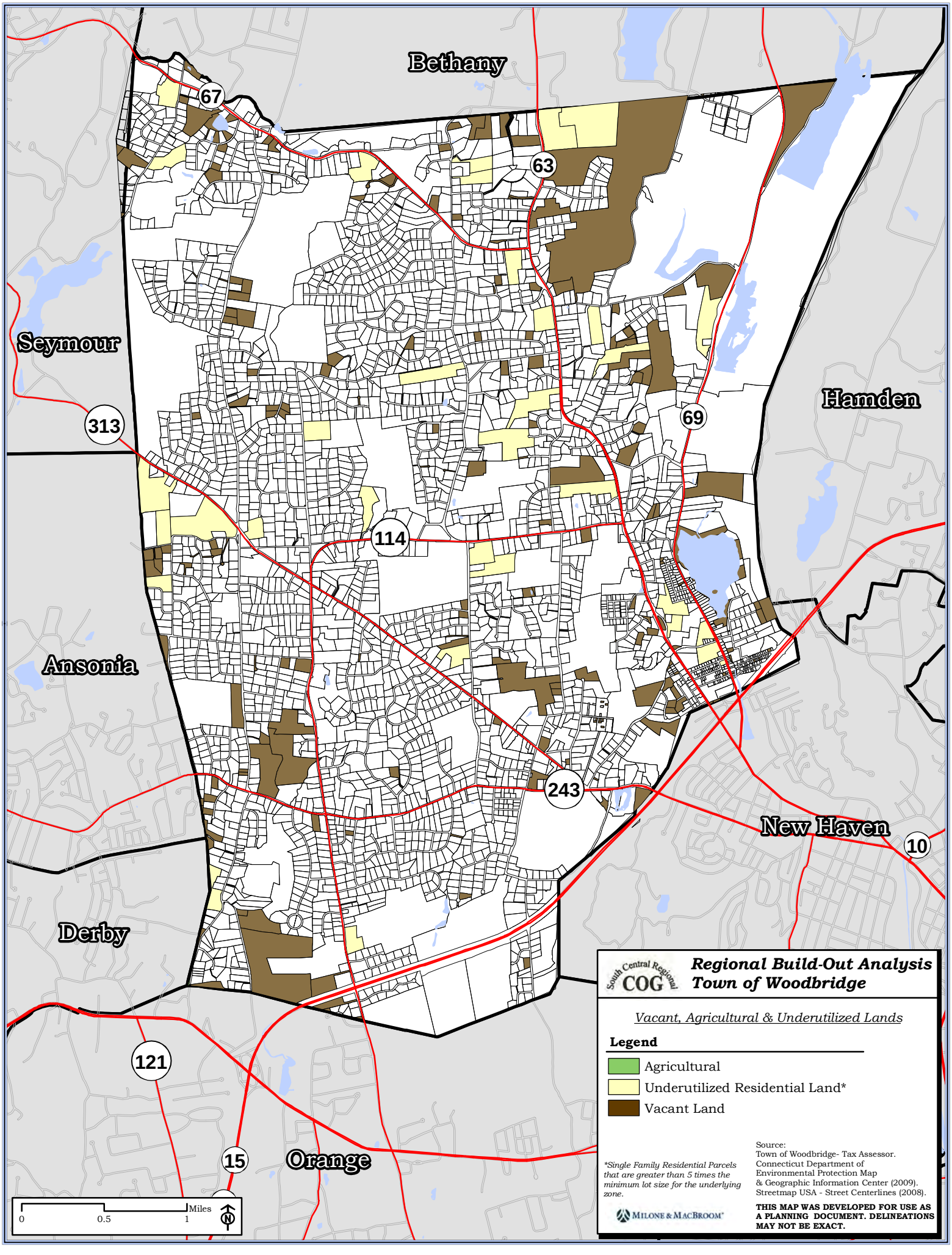
The development capacity calculated represents a reasonable scenario of growth but not an absolute buildout of every parcel in Woodbridge to a maximum density.

Methodology

The process to calculate development potential for vacant land involves three basic steps. First, the total amount of vacant, agricultural, and underutilized land is determined by reviewing the assessor records through the GIS parcel database. The parcels have been identified on the map titled *Vacant, Agricultural and Underutilized Lands*.

The second step of the development potential process involves calculating the developable area of the vacant, agricultural and underutilized land. This is accomplished by removing any areas from the parcel that contain development constraints such as wetlands, floodplains or steep slope soils (greater than 15%). These physical attributes are typically considered significant physical constraints to new development projects and are illustrated on the map titled *Potential Development Constraints*. For those parcels that are large enough to be subdivided (greater than five times the minimum lot size as defined by zoning), an additional deduction of 20% of the total parcel size was factored in to account for the required internal roadways.

The third and final step in the analysis involves applying the minimum lot size, dwelling units per acre (for multi-family zones) and percent lot coverage and FAR (floor area ratio) of the underlying zone to the remaining net developable land in the residential and non-residential zones respectively. It should be noted that parcels were "built-out" to the maximum allowed density by zone. This process yields an approximation of potential residential dwelling units and square feet of non-residential development from vacant land. Vacant parcels that have an area less than the minimum lot size of the underlying zone were not included for potential dwelling units.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Regional Build-Out Analysis
Town of Woodbridge
Vacant, Agricultural & Underutilized Lands
Legend
Agricultural
Underutilized Residential Land*
Vacant Land
*Single Family Residential Parcels that are greater than 5 times the minimum lot size for the underlying zone.
Source:
Town of Woodbridge- Tax Assessor.
Connecticut Department of Environmental Protection Map & Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
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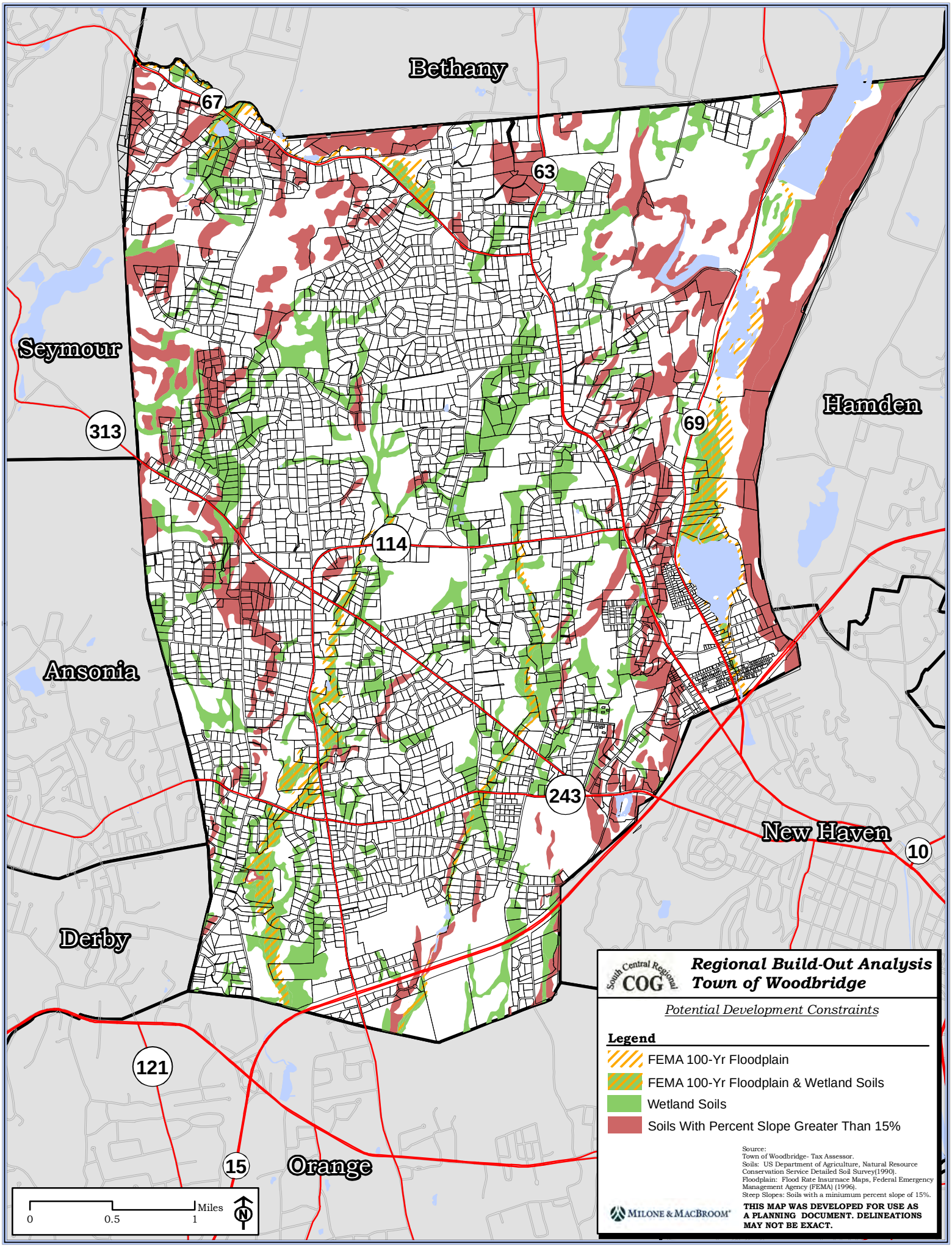
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Regional Build-Out Analysis
Town of Woodbridge
Potential Development Constraints
Legend
FEMA 100-Yr Floodplain
FEMA 100-Yr Floodplain & Wetland Soils
Wetland Soils
Soils With Percent Slope Greater Than 15%
Source:
Town of Woodbridge- Tax Assessor.
Soils: US Department of Agriculture, Natural Resource Conservation Service Detailed Soil Survey(1990).
Floodplain: Flood Rate Insurnace Maps, Federal Emergency Management Agency (FEMA) (1996).
Steep Slopes: Soils with a miniumum percent slope of 15%.
THIS MAP WAS DEVELOPED FOR USE AS A PLANNING DOCUMENT. DELINEATIONS MAY NOT BE EXACT.
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Land Analysis

Table 1 shows the distribution of vacant and agricultural land by zoning district. Visualizing the distribution of these vacant and agricultural parcels (see *Vacant, Agricultural and Underutilized Lands* map) is important in order to gain an understanding of *where* future development on raw vacant land can be accommodated. By combining the zoning boundaries with the vacant and agricultural land through overlays, a detailed understanding can be gained on *what* type of development can be produced under existing regulations.

Table 1
Vacant Land & Agricultural Land Analysis by Zone District

Zone	Vacant & Agricultural Land (acres)	% of Total Vacant Land
A	447.9	**96.8%**
B	1.1	**0.2%**
BB	0.3	**0.1%**
BI	0.2	**0.1%**
D	0.4	**0.1%**
DEV1	1.2	**0.2%**
DEV2	6.1	**1.3%**
GB	5.3	**1.2%**
Total:	**462.5**	**100.0%**

Residential Development Capacity

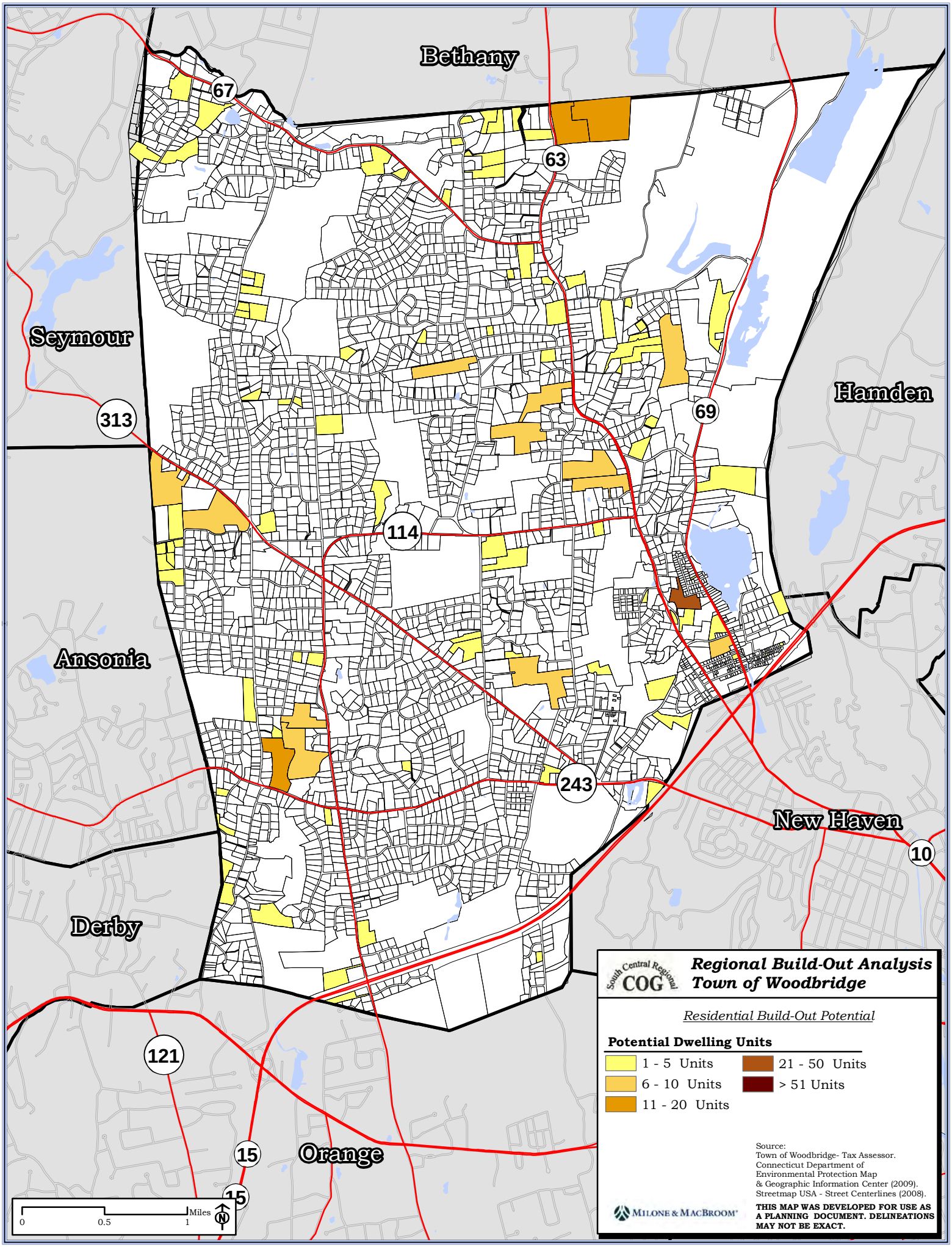
The results of the residential development potential analysis indicate that, based upon existing zoning, approximately 317 additional dwelling units potentially could be built within the town's residential zones. Table 2 below and the *Residential Build-Out Potential* map illustrate the distribution of the dwelling units calculated in this analysis.

Table 2
Residential Development Potential Under Existing Zoning Regulations

	Vacant & Agricultural Land				Underutilized Land				
Zone	**Gross Raw Vacant [1] & Agricultural Land (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units From Raw Vacant & Agricultural Land**	**Gross Land from Underutilized Lots[2] (sqf)**	**Constrained Land (sqf)**	**Net Buildable Land (sqf)**	**Dwelling Units Underutilized Lots**	**Total Potential Dwelling Units**
A	19,514,427	6,911,141	12,613,286	156	19,590,431	4,817,156	14,773,275	154	310
B	47,236	30,561	16,675	1	0	0	0	0	1
BB	12,059	0	12,059	1	499,579	99,112	400,468	33	34
C	0	0	0	0	28,362	0	28,362	4	4
D	17,439	0	17,439	3	0	0	0	0	3
DEV1	50,153	0	50,153	1	859,799	0	859,799	13	14
DEV2	265,764	217,336	48,427	1	0	0	0	0	1
Total:	**19,514,427**	**6,911,141**	**12,613,286**	**163**	**19,590,431**	**4,817,156**	**14,773,275**	**154**	**317**

[1] *Land in its natural state that has never been developed.*

[2] *Lots that have a single family residence and are greater than 5 times the minimum lot size of the underlying zone.*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Regional Build-Out Analysis
Town of Woodbridge
South Central Regional COG
Residential Build-Out Potential
Potential Dwelling Units
1 - 5 Units
6 - 10 Units
11 - 20 Units
21 - 50 Units
> 51 Units
Source:
Town of Woodbridge- Tax Assessor.
Connecticut Department of
Environmental Protection Map
& Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
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Non-Residential Development Capacity

When describing non-residential development capacity, the distribution of the remaining vacant land within specific zones and areas of the town are an important factor in long range planning. For purposes of this Regional Build-Out Analysis, non-residential development capacity is evaluated by the geographic distribution of the remaining vacant & agricultural parcels zoned for non-residential use.

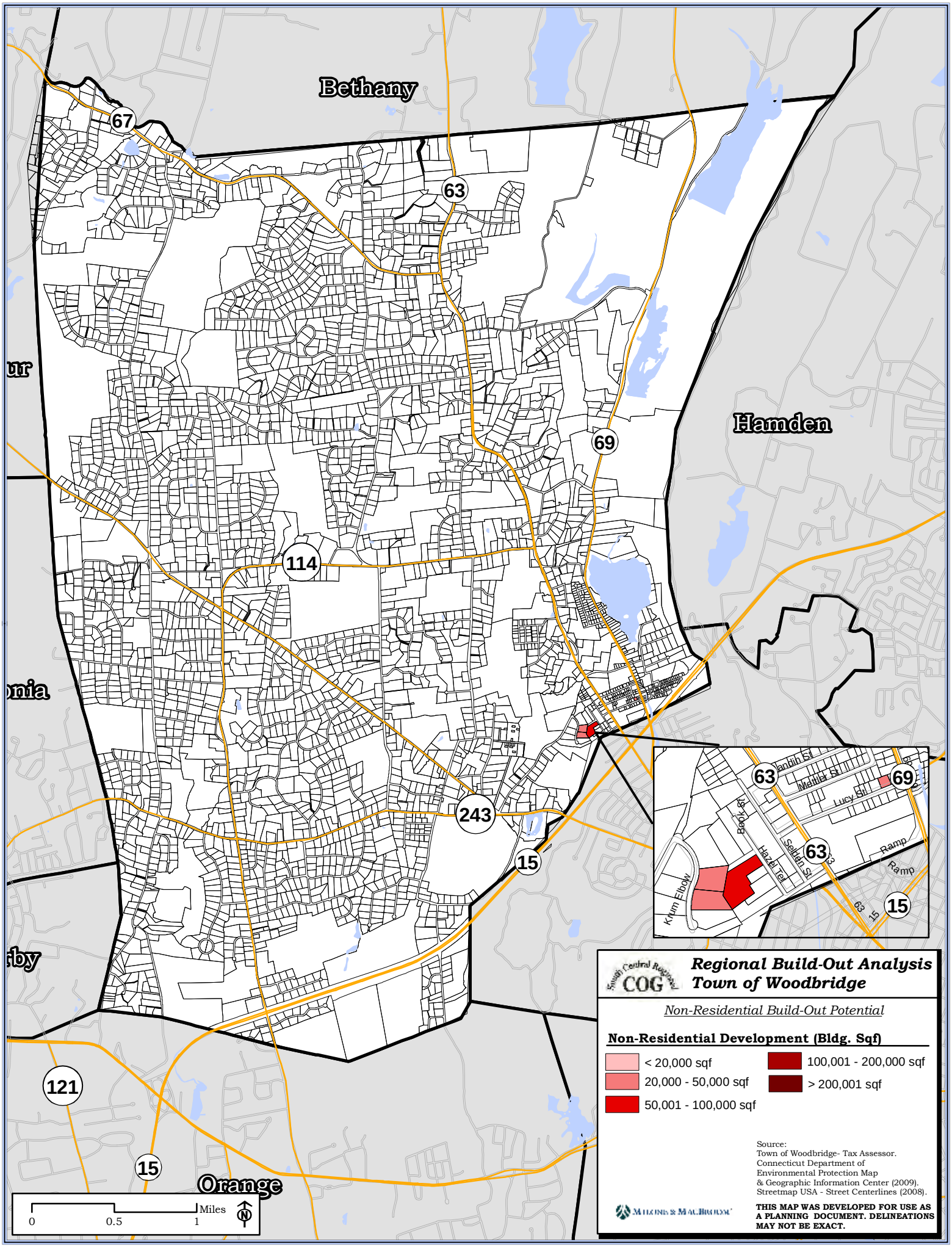
The geographic distribution of non-residential development potential is illustrated on the map titled *Non-Residential Build-Out Potential* and is tabulated by zoning district in Table 3.

Table 3
Non-Residential Development Potential

Zone	Gross Raw Vacant Land (sqf)	Constrained Land (sqf)	Net Buildable Land (sqf)	Potential Building sqf*
BI	10,501	0	10,501	22,095
GB	231,968	75,359	156,608	121,528
Grand Total:	**242,469**	**75,359**	**167,110**	**143,623**

**Based on percent lot coverage and Floor Area Ratio (FAR) for underlying zoning.*

It is important to note that these results are speculative as the factors that permit land to be developed may change. One important factor is the possibility of regulatory changes on the development of land. These changes could manifest in zoning changes, which could place fewer or greater restrictions on the buildable area of a parcel. In addition, vacant land can be purchased for open space, which would obviously remove acreage from the developable land inventory. Also market factors could drive land values to increase to a level that would stimulate assembly and redevelopment of developed lots to their maximum dwelling unit yield which would be greater than shown in the tables, particularly for multifamily units. The development potential totals given here are intended to indicate a relative order of magnitude estimate and will likely change over time.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Regional Build-Out Analysis
Town of Woodbridge
Non-Residential Build-Out Potential
Non-Residential Development (Bldg. Sqf)
< 20,000 sqf
20,000 - 50,000 sqf
50,001 - 100,000 sqf
100,001 - 200,000 sqf
> 200,001 sqf
Source:
Town of Woodbridge- Tax Assessor.
Connecticut Department of
Environmental Protection Map
& Geographic Information Center (2009).
Streetmap USA - Street Centerlines (2008).
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Attachments

SCRCOG Build-Out Land Use Regulatory Summary Table *Woodbridge, CT*						
Zone	*Zone Description*	*Minimum Lot Size*	*Minimum Lot Area per dwelling unit*	*Max Lot Coverage as percentage of lot area*	*Max Bldg Height*	*FAR*
A	Residence A District	65,000	65,000	12.0%	35	N/A
B	Residence B District	15,000	15,000	30.0%	35	N/A
BB	Residence BB District	9,375	9,375	30.0%	35	N/A
C	Residence C District	5,000	2,500	40.0%	35	N/A
D	Residence D District	4,000	2,000	50.0%	35	N/A
BI	Business and Industrial District	4,000	N/A	70.0%	45	2.6
GB	General Business District	20,000	N/A	33.3%	35	1.0
AHD	Affordable Housing District	Varies	Varies	Varies	35	N/A
DEV-1	Development District 1	43,560	N/A	25.0%	45	0.9
DEV-2	Development District 2	43,560	N/A	30.0%	40	1.0
P	Park District	N/A	N/A	N/A	N/A	N/A