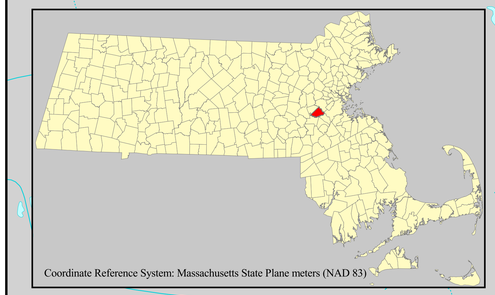
MAP 3: Composite Development

Town of Needham

- R-1 Zoning
- Absolute Development Constraints
- Future Developable Land
- Partial and Potential Development Constraints
- Water Bodies
- Streams
- Intermittent Streams
- Redevelopment District

Roads
- Local
- Interstate
- Arterial
- Collector

Trains



Coordinate Reference System: Massachusetts State Plane meters (NAD 83)

Summary Buildout Statistics (Additional Development and Impacts)

Developable Land Area (sq ft)	48,953,804
Total Residential Lots	593
Comm./Industrial Buildable Floor Area (sq ft)	1,066,364
Comm./Industrial Water Use (Gal/day)	110,138
Dwelling Units	606
Future Residents	1,562
Residential Water Use (Gal/day)	117,148
Municipal Solid Waste (tons)	801
Non-Recycled Solid Waste (tons)	570
Students	236
New Roads (miles)	8

Notes:

1. "Residential Water Use" is based on 75 gallons per person per day.
2. "Comm./Ind. Water Use" is based on 75 gallons per 1,000 square feet of floor space.
3. "Municipal Solid Waste" is based on 1026 lbs. per person per year. All waste estimates are for residential uses only.
4. "Non-Recycled Solid Waste" is a subset of Municipal Solid Waste and is based 730 lbs. per person per year ending up in a land fill or incinerator.
5. The number of "Students" at buildout is based on a student per household ratio taken from external demographic estimates.
6. "New Roads" are based on an assumption that 60% of the new residential lots will have required frontage on new roads.

Methods

This buildout analysis is used to determine developable land area for both commercial and industrial zoning districts. Digital and hard copy data is collected. Digital zoning data is updated. Other existing digital data is gathered from a variety of sources including MassGIS, the community, Massachusetts Highway Department, and federal sources. Zoning, open space, land use, hydrography, environmentally sensative areas, wetlands, Rivers Protection Act buffers, flood zones, slope, soil, orthophotography, rail lines, road networks, and political boundaries are utilized to different degrees. Additional layers are created that included miscellaneous features that were determined to be undevelopable, an update of the most recent MacConnell Land Use, and a layer of recent subdivisions since the last MacConnell update.

The developed land data is from the aggregated land use categories in the MacConnell Land Use layer provided by MassGIS. The aggregated developed land categories are spectator and water-based recreation, residential, commercial, industrial, transportation, and waste disposal.

The GIS analysis consisted of subtracting layers from zoning. The remaining developable land area represented on MAP 2 is aggregated by zoning category.

To determine the number of future buildable residential lots by zoning category a formula was developed to determine the land requirements of a typical lot in each category. The land requirements factor in required frontage multiplied by half the road right-of-way to determine road area. This figure varies form zone to zone. Additionally 10% is subtracted from each zone to cover miscellaneous variables such a odd lot shapes. Commercial and Industrial buildable lots were determined using an "effective" floor area ratio technique.

The analysis determines developable square feet of commercial and industrial areas. For each commercial and industrial zoning district, the major alternative land uses were examined in relation to the height limitations, maximum allowable percent lot coverage and parking requirements. An effective floor area ratio (FAR) for all use categories (e.g., offices, warehousing) in a particular district is developed for analysis purposes. An effective FAR for a district is estimated by averaging the FARs for the various potential land use types. Note that where FARs are not detailed for zoning districts in the by-laws an estimated FAR is derived for similar zoning districts by multiplying the percent lot coverage by the number of 10-foot-tall stories that could be constructed. Effective limitations on total square footages caused by the required amount of parking with each use is also factored in.

Needham - Zoning District Areas

ZONING DISTRICT		AREA (M)	AREA (SqFt)	PERCENT
SRB	*Single Residence B*	14,015,127	150,857,574	43%
SRA	*Single Residence A*	12,033,961	129,532,480	37%
RR-C	*Rural Residence - Conservation*	3,302,028	35,542,733	10%
IP	*Industrial Park*	800,103	8,612,233	2%
GR	*General Residence*	660,148	7,105,774	2%
I	*Industrial*	300,487	3,234,417	1%
INS	*Institutional*	298,395	3,211,895	1%
A2	*Apartment 2*	256,632	2,762,361	1%
I1	*Industrial - 1*	159,919	1,721,358	0.5%
A1	*Apartment 1*	155,615	1,675,026	0.5%
B-CH ST	*Chestnut Street Business*	142,166	1,530,263	0.4%
B-CTR	*Center Business*	113,068	1,217,049	0.3%
B	*Business*	99,053	1,066,200	0.3%
B-AV SQ	*Avery Sq. Business*	56,566	608,871	0.2%
NB	*Neighborhood Business*	55,444	596,793	0.2%
B-H AV	*Hillside Ave. Business*	30,994	333,616	0.1%
	Total	32,479,706	349,608,641	100%

Scale 1 : 11,000

500 0 500 1000 1500 Meters

2000 0 2000 Feet

Commonwealth of Massachusetts
Executive Office of Environmental Affairs

Argeo Paul Cellucci
Governor

Jane Swift
Lt. Governor

Bob Durand
Secretary

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MASSGIS Massachusetts Geographic Information System
Massachusetts Executive Office of Environmental Affairs - 2000

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis.

Produced by the Metropolitan Area Planning Council GIS Lab.
60 Temple Place, Boston, MA 02111 (617) 451-2770