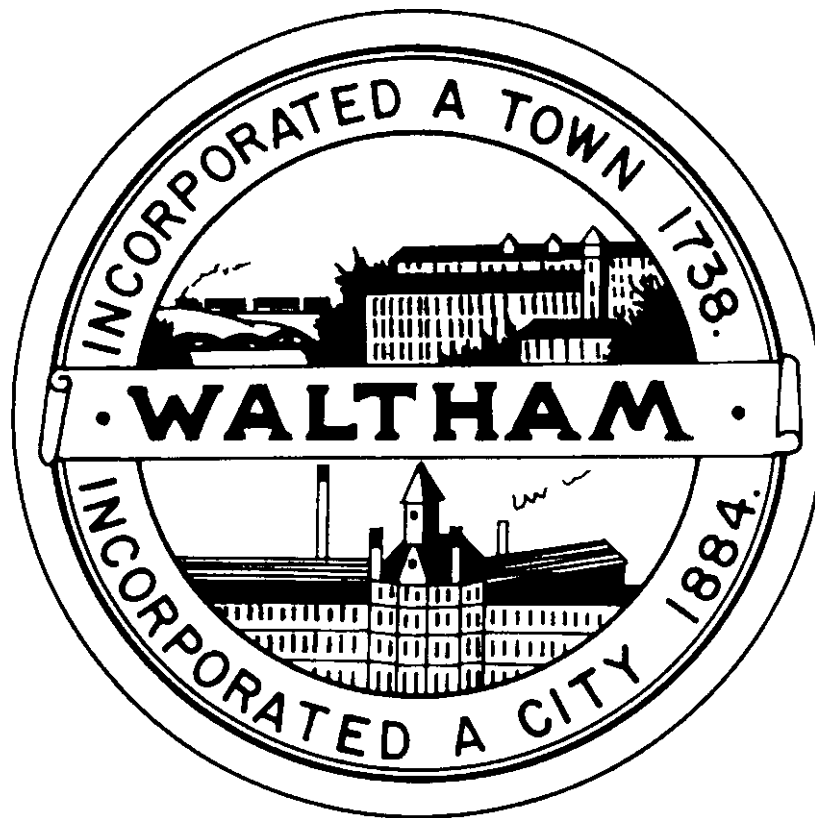


A BUILD-OUT ANALYSIS FOR WALTHAM, MASSACHUSETTS



PREPARED BY THE WALTHAM PLANNING DEPARTMENT WITH ASSISTANCE
FROM THE METROPOLITAN AREA PLANNING COUNCIL

MAY, 2006

WALTHAM, MASSACHUSETTS - BUILDOUT ANALYSIS, 2006

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Executive Summary

A build-out analysis is a model of a community's potential future, given the status of land at the time of analysis, the dimensions and characteristics of that land (i.e. wetlands), and regulations that govern the development of the land. Such an analysis estimates the maximum possible development that is allowed by regulation on a parcel or in an area. The capacity of infrastructure to accommodate possible development is not factored into a build-out analysis.

The Metropolitan Area Planning Council (MAPC), hired by the City to prepare a Community Development Plan, developed assumptions and calculations based upon the City's Zoning Ordinances for two build-out scenarios covering 12,750 property parcels (94% of the total parcels in the city): a) maximum potential development By-Right, and b) maximum potential development by Special Permit.

The initial assumptions and calculations were revised in consultation with the City's Planning Department and City Council. In addition, the Planning Department and City Council worked with MAPC to set reasonable standards for expectations for future development in each of the zoning districts and wards of the city.

The analysis indicates that the Zoning Ordinances allow maximum By-right development of:

- ◇ Approximately 5,700 additional dwellings (in single or multi-family homes) and
- ◇ Almost 2,900,000 square feet (SF) of new commercial (retail/business/office) space.

Additional findings relative to By-Right development include:

- ◇ Wards One and Four have the highest development potential, and Wards Eight and Nine have the lowest potential, for By-Right residential development.
- ◇ Wards One and Seven have the highest potential, and Wards Six and Nine have the lowest potential, for By-Right commercial development.

Further conclusions indicate that the Zoning Ordinances allow maximum Special Permit development of:

- ◇ Approximately 12,200 additional dwellings (in single or multi-family homes) and
- ◇ Nearly 42,000,000 SF of new commercial (retail/business/office) space.

Other important conclusions relative to maximum development under Special Permits include:

- ◇ Wards Four and Nine have the highest potential, and Wards Three and Seven have the lowest potential, for Special Permit residential development.
- ◇ Conversion of commercial and industrial buildings into housing in Wards Eight and Nine could generate nearly 7,000 additional dwellings, while development of the Fernald Center in Ward Four can yield over 2,500 homes with Special Permits.
- ◇ Wards One and Seven have the highest development potential, and Wards Eight and Nine have the lowest potential, for Special Permit commercial development in this analysis
- ◇ Properties clustered along Route 128, in Ward One, have zoning capacity for development of an additional 25,000,000 SF of space

The build-out analysis is conservative in that it does not include development of most tax-exempt parcels in Waltham, which are assumed to remain unchanged from their current state.

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Introduction

A build-out analysis is a model of a community's potential for property development, based upon existing physical conditions (amounts of vacant, developed and underdeveloped land; wetlands; easements, etc.); existing regulatory conditions governing land development (Zoning and Building Codes); and current and future economic trends that influence the "highest and best" uses for land in the area. Although it is not possible to predict exactly what the future development of a parcel or an area will be, it is possible to estimate the maximum possible development that is allowed by regulation. The capacity of infrastructure to accommodate possible development is not factored into a build-out analysis.

The Metropolitan Area Planning Council (MAPC), a regional planning agency serving over one hundred communities in the Greater Boston area, completed a general build-out analysis for Waltham in 2000. MAPC relied on a methodology developed by its own planners, and adopted by the Massachusetts Executive Office of Environmental Affairs (EOEA), to provide an initial view of potential future development of communities across the entire state. This "initial" build-out methodology was adept at analyzing new development on vacant lands (based on aerial photo interpretation of land uses), but was not designed to analyze potential future development on already-developed or under-developed properties. MAPC further developed its build-out formulae to allow them to better calculate the redevelopment potential of developed areas and communities. Waltham's final 2000 build-out report enhanced its general findings with a redevelopment analysis of the Route 128 commercial/industrial corridor.

Subsequently, the City took advantage of State funding to contract with MAPC to work with the Planning Department and community residents to develop a Community Development Plan under Executive Order 418, which enabled communities to develop comprehensive plans to identify and guide appropriate development. A draft Community Development Plan was completed in June 2004. The City then contracted MAPC to undertake a more detailed build-out analysis than that prepared in 2000. The expanded build-out analysis of the city would be based on the Assessors' parcel-level information, and would examine the potential for redevelopment in all of the city's neighborhoods and commercial areas.

To start this effort, MAPC developed an initial set of calculations and assumptions based upon Waltham's Zoning Ordinances and economic trends, and then reviewed these figures with the Planning Department. As part of this process, the Planning Department helped MAPC set reasonable standards for expectations for future development in each of the zoning districts and wards of the city. The City's Planning Department subsequently applied these standards together with the Zoning Ordinances themselves to virtually every parcel in the city.

Waltham's buildout analysis is an examination of the maximum amount of development that Zoning Ordinances could allow both as-of-right and by Special Permit based on a series of assumptions. Inherently subjective, these assumptions address neither market demand nor infrastructure capacity, both of which determine, along with land use regulations, what will ultimately be built over time. All three variables—zoning, infrastructure and the market (and their interaction)—are critical in influencing development decisions.

The buildout analysis is a tool designed to guide decision-making. It is not a prophecy of what will happen, but rather what can happen under certain circumstances. A buildout analysis focuses on only one of the many factors that determine the type and amount of development that may occur in the future: Zoning.

Waltham's real estate market demand is clearly cyclical and is driven by a number of factors including regional, national and even international economies; hence, it cannot be predicted with any reliability. While infrastructure, such as the traffic network and the water and sewer system, technically does have saturation points, it is extraordinarily difficult to project the timing and extent to which the capacity to accommodate increased development actually affects demand. While the buildout analysis clearly has its limitations, if used properly it can provide decision makers with an understanding of the City's land use controls and how and where they might be amended. The results of the Buildout Analysis are not cause for concern. Rather, the analysis should serve as a foundation upon which to base discussion and, if appropriate, adjustments to the Zoning Ordinances.

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Results

This parcel-based build-out analysis is a complex process with a large number of assumptions and conditions under which different calculations were applied to the data. The analysis was also run twice: first for the assumptions and calculations based upon the potential for By-Right development under the Zoning Ordinances, and then a second time using the assumptions and calculations derived from the Special Permit provisions of the Zoning Ordinances. Table One and Maps One and Two summarize the results of the Build-out Analysis assuming that future development is undertaken to the limits allowed By-right under Waltham's zoning regulations, and follows parameters, described later in the report, developed by MAPC and the Planning Department.

Table 1: By-Right Build-out Summary					
Ward	Parcels Analyzed	Existing Dwellings	Additional Dwellings	Existing Commercial Space (SF)	Additional Commercial Space (SF)
1	1,720	2,789	817	11,248,869	1,881,753
2	1,820	2,786	645 ¹	1,573,022	216,803
3	1,851	2,424	456 ²	2,894,823	101,130
4	1,394	1,628	1,535 ³	1,686,627	199,795
5	1,298	2,625	475	2,697,528	130,009
6	1,200	2,959	677	1,018,706	-213,031
7	1,312	1,762	482 ⁴	2,382,487	742,492
8	1,176	3,100	317	1,050,245	-12,429
9	967	2,663	318	2,060,469	-166,292
Totals	12,738	22,736	5,722	26,612,776	2,880,229

1. Includes actual construction of 264 multi-family units at The Ridge development. 2. Includes actual construction of 265 multi-family units at the former Middlesex County Hospital. 3. Includes projected development of 1,255 multi-family units By-Right at the Fernald School. 4. Includes actual construction of 364 units at Longview Place at the former Waltham Hospital.

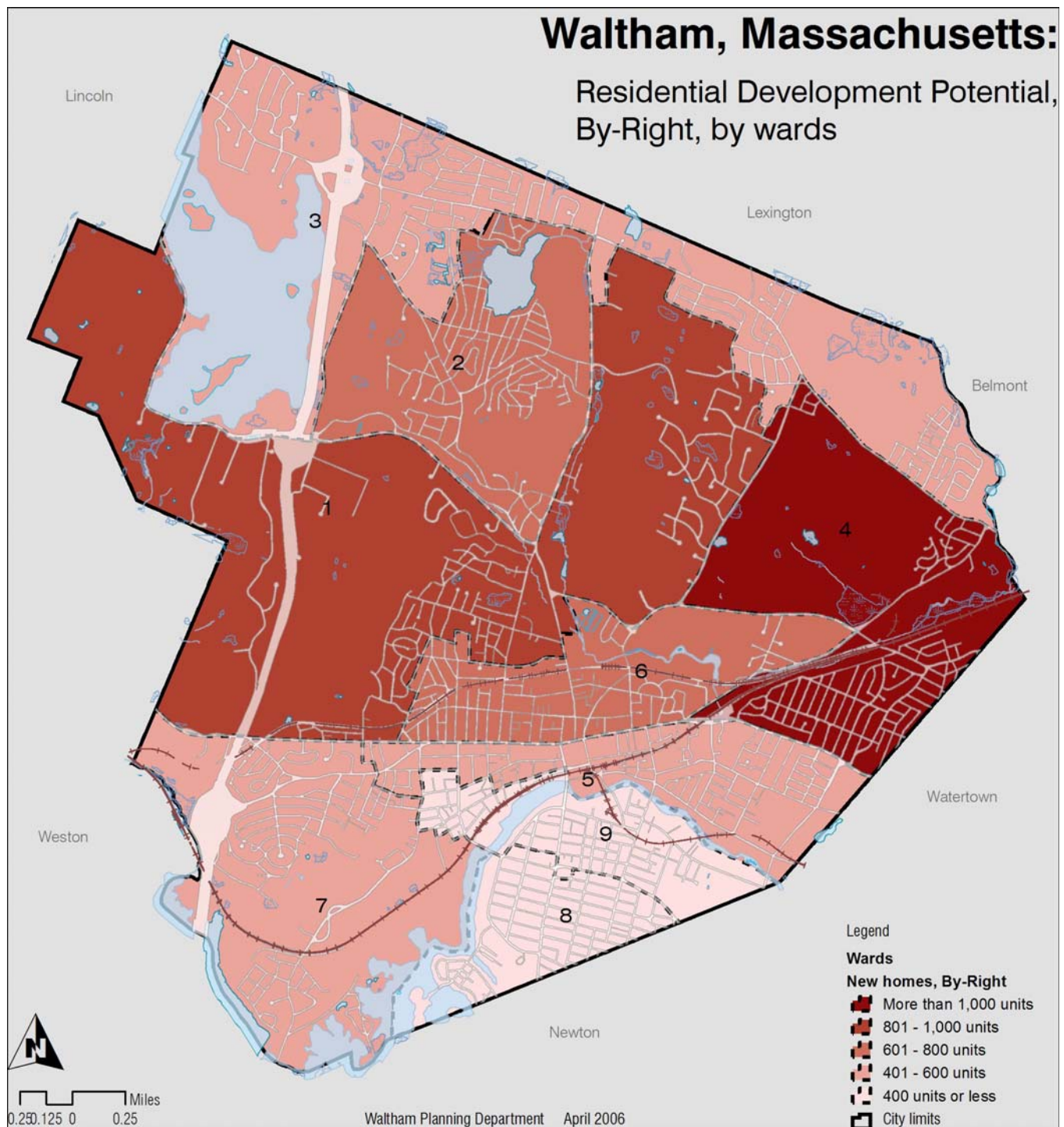
Table Two and Maps Three and Four present the results of a build-out analysis that assumes future development will be undertaken to the limits of Waltham's existing Special Permit regulations.

Table 2: Special Permit Build-out Summary					
Ward	Parcels Analyzed	Existing Dwelling Units	Additional Dwellings (units)	Existing Commercial Space (SF)	Additional Commercial Space (SF)
1	1,720	2,789	1,454	11,248,869	26,212,089
2	1,820	2,786	663 ¹	1,573,022	1,389,534
3	1,851	2,424	670 ²	2,894,823	634,577
4	1,394	1,628	3,206 ⁵	1,686,627	1,207,391
5	1,298	2,625	1,234	2,697,528	2,901,945
6	1,200	2,959	1,143	1,018,706	1,672,151
7	1,312	1,762	530 ⁴	2,382,487	8,646,093
8	1,176	3,100	1,028	1,050,245	-334,032
9	967	2,663	2,277	2,060,469	-622,671
Totals	12,738	22,736	12,205	26,612,776	41,707,077

1. Includes actual construction of 264 multi-family units at The Ridge development 2. Includes actual construction of 265 multi-family units at the former Middlesex County Hospital 4. Includes actual construction of 364 units at Longview Place on the former Waltham Hospital 5. Includes projected Special Permit development of 2,744 multi-family units at the Fernald School Campus

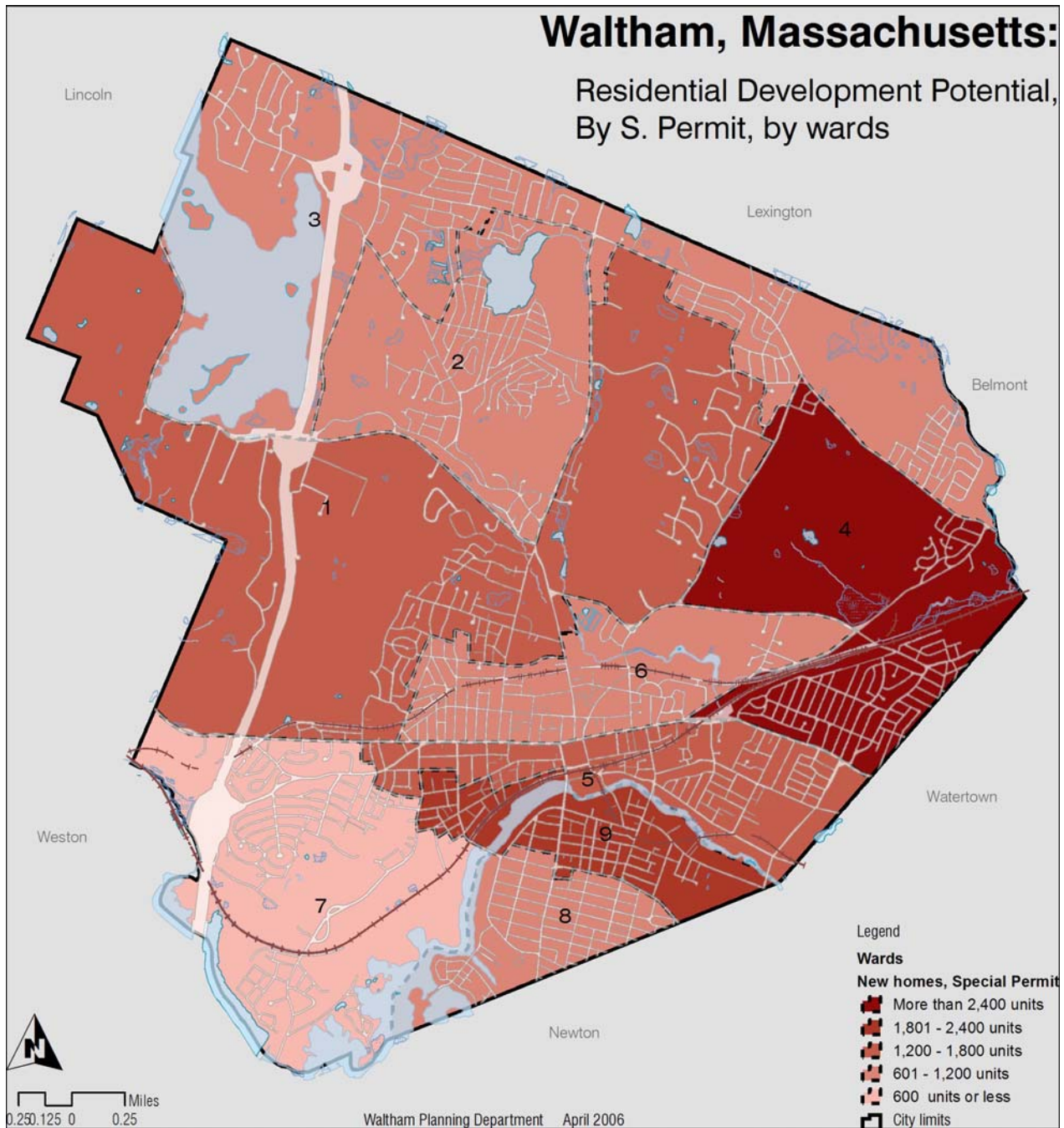
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Map One



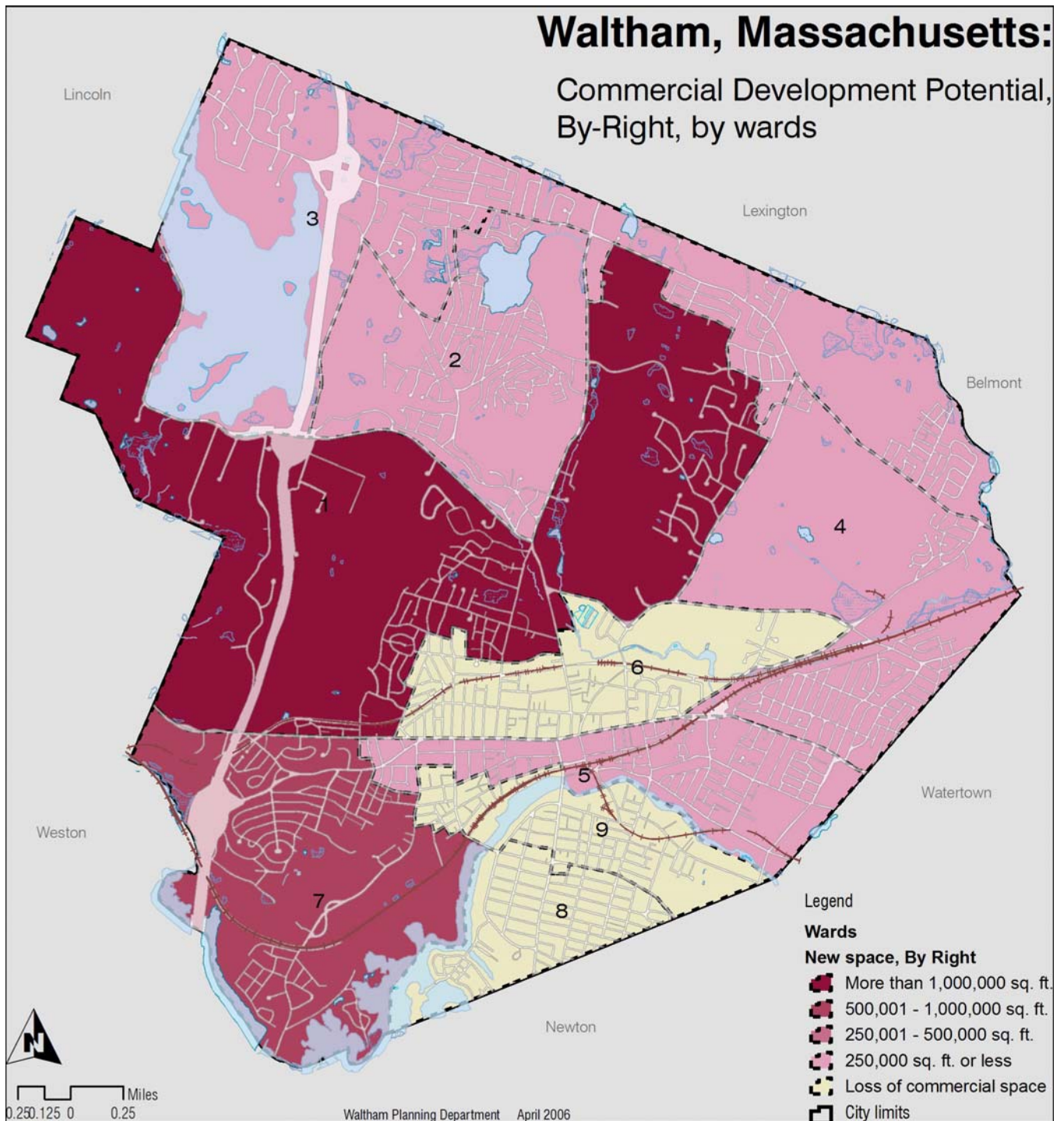
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Map Two



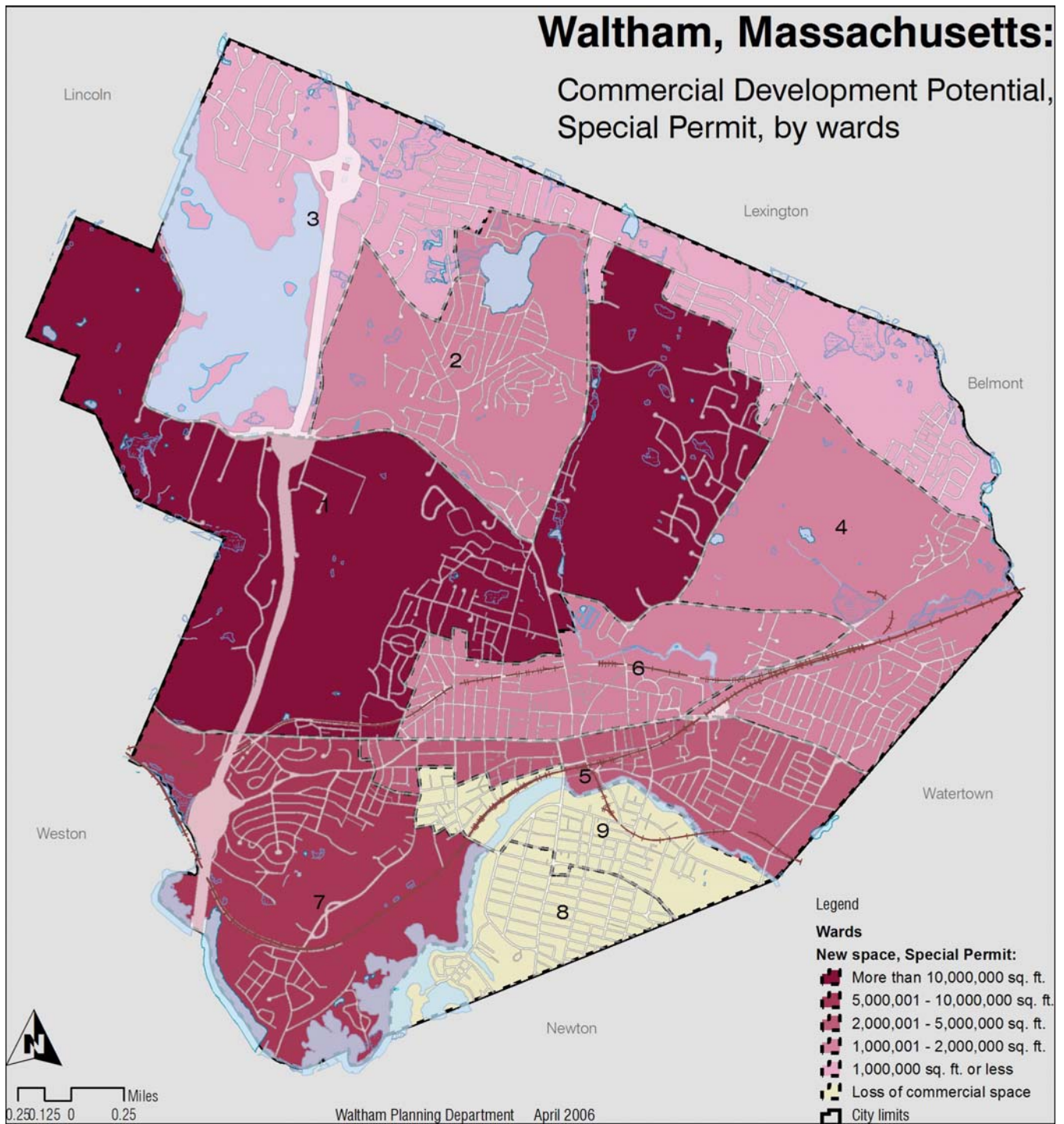
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Map Three



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Map Four



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Assumptions

A build-out analysis is based on a series of assumptions that influence each other and the equations that ultimately yield projected future development calculations. This study was driven by eleven major principles that are summarized below. The importance of carefully establishing the assumptions underlying a build-out analysis is illustrated in the following example. Office space can be built to a maximum Floor Area Ratio (FAR) of 2.0 by Special Permit in the commercial districts along the Route 128 corridor (i.e. 50,000 square feet of space can be built on a 25,000 square foot parcel). However, multi-level parking garages are required to support such dense development, because buildings occupy so much of their sites. It was assumed that areas outside of the I-95/Route 128 corridor (Wards Two, Four and Five) will not economically support the structured parking that are needed to achieve the maximum FAR. Hence, assumptions relating to the economic viability of structured parking have critical implications for the amount of development that a parcel can accommodate.

- I. Current economic trends in the Boston area will remain in effect, and conditions in Waltham's real estate markets will remain stable over the short and medium-term.
- II. Given Principle I, housing will generally be the highest and best use of property in Waltham, except in the I-95/Route 128 business area and the Riverfront Overlay Zoning District along the Charles River. Office/retail/commercial/research space and mixed residential/commercial development will be the highest and best uses of sites respectively along I-95 and within the overlay district.
- III. Residential properties will not be redeveloped with a lower number of units than currently exists. If the number of existing dwellings is greater than the projected development capacity of residentially zoned parcels, these parcels will not sustain any change.
- IV. Similar to Principle III, commercial parcels will not redevelop with a smaller amount of space than currently exists. Such parcels will not change if the amount of existing space is greater than their projected development capacity.
- V. Residential properties will be converted to commercial/office uses, where possible under zoning, only if 5,000 or more square feet of commercial space can be developed on the subject parcel.
- VI. Existing residential or commercial properties will convert to mixed-uses in zoning districts that permit such development. In parcels projected to convert to mixed uses, the number of existing homes or the amount of commercial space can rise or fall. However, as in Principle III, residential properties are assumed to convert to mixed-use only if 5,000 or more square feet of commercial space can be developed in its place.
- VII. Commercial or industrial uses within residential zoning districts will neither change in use nor expand. An adequate market does not exist for these non-conforming uses to allow for continued use of the property without conversion to residential uses.
- VIII. Areas outside of both the I-95/Route 128 corridor and downtown area will not economically support structured parking areas (i.e. garages) that are needed to achieve the maximum densities permitted by Special Permit in business, commercial and industrial zones.
- IX. Parcels within and around the city's Riverfront Overlay District along the Charles River will redevelop into mixed-use developments with two or more floors of apartments over ground floor shops and other commercial uses.
- X. Tax-exempt property is generally assumed to remain unchanged in this build-out analysis. Exceptions were made for parcels that may revert to taxable status in the near future, such as the Fernald School campus, all or part of which may be declared surplus by the Commonwealth of Massachusetts.
- XI. Wetlands and utility/road easements are assumed not to have any development potential.

Table Three overleaf illustrates the parameters for developing the build-out calculations, which were derived from Waltham's Zoning Ordinances and reviewed and approved by the Planning Department.

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Table 3: Land Use Assumptions for Projected Future Development of Waltham Parcels

Location(s)	Land Use	Zoning District	Assumed use By-Right unless otherwise specified	Assumed use(s) for Special Permit	Minimum lot area required	FAR - By-Right (or as limited by other regulations)	FAR - By Special Permit (or as limited by other factors)
"Small" lots - All Wards	Vacant residential	RA 1-4	Single family housing	None allowed	N/A	N/A	N/A
"Small" lots - All Wards	Vacant residential	RB	Two family housing	None allowed	N/A	N/A	N/A
"Small" lots - All Wards	Vacant residential	RC	Two family housing	Apartments @ 18 units/acre	N/A	N/A	N/A
All Wards	Residential	RA1	Single family housing	None allowed	20,000	N/A	N/A
All Wards	Residential	RA2	Single family housing	None allowed	15,000	N/A	N/A
All Wards	Residential	RA3	Single family housing	None allowed	9,600	N/A	N/A
All Wards	Any Business	Residential	Business use remains	None allowed	9,600	N/A	N/A
All Wards	Residential	RA4	Single family housing	None allowed	7,000	N/A	N/A
All Wards	Residential	RB	Two family housing	None allowed	6,000	N/A	N/A
All Wards	Residential	RC	Two family housing	Apartments @ 18 units/acre	6,000	N/A	N/A
Wards 3 & 4	All but tax exempt	Bus. A	Retail / office	Retail / office	N/A	0.41	0.41
Ward 2	All but tax exempt	Bus. A	50% apartments; 50% retail/office	50% apartments; 50% retail/office	N/A	0.41	0.41
Ward 5,7,8, 9	All but tax exempt	Bus. A	67% apartments 33% retail/office	67% apartments 33% retail/office	N/A	0.41	0.41
Wards 1, 6,	All but tax exempt	Bus. A	Apartments	Apartments	N/A		
Wards 2 & 3	All but tax exempt	Bus. B (out RF Overlay)	Retail/office (CR-Off)	Retail/office (CR-Off)	N/A	0.24	0.41
Wards 1,4,5,6,7,8,9	All but tax exempt	Bus. B (out RF Overlay)	25% retail, 75% apartments	25% retail, 75% apartments	N/A	0.24	2.5
All Wards	All but tax exempt	Bus. B in RF Overlay	Retail/office (CR-Off)	3 floors residential; 1 floor commercial	N/A	0.5	1
All Wards	All but tax exempt	Bus. B in RF Overlay	Retail/office (CR-Off)	3 floors residential; 1 floor commercial	N/A	0.5	1.5
All Wards	All but tax exempt	Bus. B in RF Overlay	Retail/office	3 floors residential; 1 floor commercial	N/A	0.5	2
All Wards	All but tax exempt	Bus. C (out RF Overlay)	4 floors residential over 1 commercial	4 floors residential; 1 floor commercial	N/A	1	2.5
All Wards	All but tax exempt	Bus C in RF Overlay	5 floor Office	4 floors residential; 1 floor commercial	N/A	1	1
All Wards	All but tax exempt	Bus. C in RF Overlay	5 floor Office	4 floors residential; 1 floor commercial	N/A	1	1.5
All Wards	All but tax exempt	Bus. C in RF Overlay	5 floor Office	4 floors residential; 1 floor commercial	N/A	1	2
Wards 2 & 4, 5 (out of RF Overlay)	All but tax exempt	C (out of RF Overlay)	Office	Office	N/A	0.4	0.66*

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Table 3: Land Use Assumptions for Projected Future Development of Waltham Parcels; continued

Location(s)	Land Use	Zoning	Assumed use By-Right unless otherwise specified	Assumed use(s) for Special Permit	Minimum lot area required	FAR - By-Right (or as limited by other regulations)	FAR - By Special Permit (or as limited by other factors)
Wards 1,3,6,7,8,9	All but tax exempt	C (out of RF Overlay)	Office	Office	N/A	0.4	2
All Wards, parcels < 40,000 SF	All but tax exempt	C in RF Overlay	Office	5 floors residential; over 1 commercial	N/A	0.4	1
All Wards	All but tax exempt	Bus C in RF Overlay	5 floor Office	4 floors residential; 1 floor commercial	N/A	1	2
Wards 2 & 4, 5 (out of RF Overlay)	All but tax exempt	C (out of RF Overlay)	Office	Office	N/A	0.4	0.66*
Wards 1,3,6,7,8,9	All but tax exempt	C (out of RF Overlay)	Office	Office	N/A	0.4	2
All Wards, parcels < 40,000 SF	All but tax exempt	C in RF Overlay	Office	5 floors residential; over 1 commercial	N/A	0.4	1
All Wards, parcels, 40 - 80,000 SF	All but tax exempt	C in RF Overlay	Office	5 floors residential; over 1 commercial	N/A	0.4	1.5
All Wards, parcels > 80,000 SF	All but tax exempt	C in RF Overlay	Office	5 floors residential; over 1 commercial	N/A	0.4	2
All Wards	All but tax exempt	LC	Office or retail	Office or retail	N/A	0.25	0.6
Ward 4	All but tax exempt	I (out of RF Overlay)	Office	Office	N/A	0.4	0.66*
Wards 1,2,3,5,6,7,8,9	All but tax exempt	I (out of RF Overlay)	Office	Office	N/A	0.4	2
All Wards, parcels < 40,000 SF	All but tax exempt	I in RF Overlay	Office	5 floors residential; over 1 commercial	N/A	0.4	1
All Wards, parcels, 40 - 80,000 SF	All but tax exempt	I in RF Overlay	Office	5 floors residential; over 1 commercial	N/A	0.4	1.5
All Wards, parcels > 80,000 SF	All but tax exempt	I in RF Overlay	Office	5 floors residential; over 1 commercial	N/A	0.4	2
All Wards	Tax exempt (special cases only) ¹	All but CR	Apartments @ 6 units/acre	Apartments @ 13 units/acre	N/A	N/A	N/A
All Wards	Tax exempt (special cases only) ¹	CR	Apartments @ 6 units/acre	Apartments @ 13 units/acre	N/A	N/A	N/A

* FAR of Special Permit development limited by projected infeasibility of building structured parking in Wards 2, 4 and 5.

1. The only tax-exempt parcels assumed to be developed were those with the potential to revert to taxable uses in the near future (such as the Fernald School campus). All other tax-exempt parcels were assumed to retain their existing uses.

2. The area of wetlands and easements was computed by the Waltham MIS Department and was removed from calculations of development potential.

This analysis calculated the development potential of all parcels within the city. Despite considerable efforts to make municipal property data as comprehensive as possible, a small percentage of the Waltham's 13,567 parcels could not be studied due to mismatches between the Waltham's GIS database and Assessors' records. These conflicts are being resolved by the MIS Department. Inclusion of these "missing parcels", which are generally very small, will not significantly change the results of the study.

Finally, this build-out study describes two possible futures, for By-Right and Special Permit development, under Waltham's Zoning laws. Alternative development scenarios, based upon different assumptions and parameters than those underlying this analysis, can be computed with the computation systems developed by MAPC and the Planning Department for this study.

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Ward-specific results and discussion

Ward One

Ward One, Waltham's largest, stretches from the city's western border, over Interstate 95-Route 128 and Prospect Hill Park to the Piety Corner neighborhood and across Lexington Street towards Forest Street and Trapelo Road. The 1,720 parcels analyzed in this ward currently contain 2,800 residences, a mixture of single-family homes, apartment complexes and condominium developments; and 11,250,000 SF of commercial space, consisting mostly of office parks, research campuses and some manufacturing plants along Route 128.

Based on the assumptions underlying this analysis, the parcels examined in Ward One have a total By-Right development capacity of 817 additional dwellings and 1,881,753 SF of additional commercial, retail, office and research space. These same properties have a Special Permit capacity of 1,454 additional dwellings and 26,212,089 SF of additional commercial space, assumed to consist primarily of multi-story offices and research facilities with parking garages. These results are summarized in Table Four below.

Table 4: Ward One - Build-out Summary							
Property type	Number of Parcels	Current Dwellings	Current Commercial Space (SF)	Additional Dwellings, By-Right	Additional Commercial, By-Right (SF)	Additional Dwellings, By Sp. Permit	Additional Commercial, Sp. Permit (SF)
Residential	1,448	2,729	0	686	0	1,261	56,360
Commercial	89	0	7,333,547	5	360,626	5	8,261,066
Industrial	55	0	3,873,329	0	984,281	0	14,355,719
Mixed-Use	8	25	41,987	-3	15,040	-5	222,762
Tax Exempt	51	35	0	0	0	0	0
Vacant	65	0	0	109	521,806	140	2,611,053
<i>Uncategorized</i>	<i>4</i>	<i>0</i>	<i>6</i>	<i>19</i>	<i>0</i>	<i>54</i>	<i>705,128</i>
TOTAL	1,720	2,789	11,248,869	817	1,881,753	1,454	26,212,089

Residential Parcels

This analysis studied 1,493 residential parcels in the ward, of which 1,448 are developed and 45 are vacant. Most (1,352) contain single-family homes; two-family homes occupy another 62 parcels. These small residential parcels have a projected By-Right expansion capacity of 166 dwellings. Fifty-four parcels contain some of the largest residential developments in the city, including the Archstone at Bear Hill apartment community; and the Northgate, Bishop's Forest and Clark's Pond condominium complexes. Zoning allows 520 additional dwellings to be developed By-Right on these multi-family parcels. Non-residential parcels in the ward currently have the By-Right capacity to add 134 residences. One parcel was assumed to convert from residential to commercial use, yielding a loss of three dwellings and the addition of over 8,700 SF of commercial space.

As noted above, Ward One's residential parcels have greater development potential via Special Permit than as-of-right. Single and two-family properties can add an additional 161 units with Special Permits, while the large residential complexes mentioned above can add 1,095 extra dwellings. Non-residential parcels in the ward have a Special Permit capacity of 191 residences.

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Commercial/Industrial Parcels

Ward One currently has 144 developed commercial/industrial parcels with over 11,200,000 SF of finished space, representing 44% of Waltham's commercial/industrial base. Most (62%) of these properties have no By-Right development capacity. Fifty-six commercial/industrial sites can add nearly 1,350,000 SF of new space By-Right; however only 21 of these properties can expand by more than 10,000 SF. Ward One has enormous commercial development potential under the Special Permit provisions. The ward's existing commercial properties, heavily clustered around Route 128, have the capacity to add over 22,500,000 SF of retail, office, research, manufacturing and warehousing space by Special Permit, which would double the city's stock of commercial space. Over 8,000,000 SF of new commercial space can be developed on three properties near Route 128 currently or previously owned by Polaroid, NStar and GTE; and 57 parcels have the ability to add more than 100,000 SF of new commercial uses.

Mixed-Use Parcels

Ward One currently has eight properties that contain a mix of 25 residences and nearly 42,000 SF of commercial space. Only two (25%) of these parcels have any By-Right development capacity, for a total of 15,000 SF of commercial area at the expense of three residences. Three of these sites can add a total of 222,000 SF of commercial area by Special Permit at the cost of five dwellings. Additionally, residential properties in Commercial and Limited Commercial zoning districts have the capacity to add 25,000 SF of commercial space By-Right, and over 117,000 SF by Special Permit.

Tax Exempt Parcels

Fifty-one tax-exempt properties owned by public agencies or private non-profit organizations were examined in Ward One. None of these sites are expected to be redeveloped in the near future.

Vacant Sites

This study examined 65 vacant parcels in Ward One, of which 45 are classified as residential, while 20 are classified as commercial/industrial. Overall, these properties can add 109 dwellings and nearly 522,000 SF of commercial/industrial space as-of-right, and 146 new homes and over 2,600,000 SF of commercial/industrial space by Special Permit. Three vacant parcels near Route 128 represent 40% (757,000 SF) of the ward's By-Right commercial development capacity.

Ward Two

Ward Two runs from Lexington Street to I 95-Route 128 and from the northern shore of Hardy Pond to Totten Pond Road. The 1,820 parcels analyzed contain nearly 2,800 dwellings, mostly single-family homes with some apartments and condominiums, as well as 1,573,000 SF of commercial space, primarily a mix of retail business and offices. These parcels have a By-Right development capacity of 645 additional dwellings and 217,000 SF of additional commercial space, and a Special Permit development capacity of 663 additional dwellings and 1,390,000 SF of commercial space. These figures incorporate the 264 townhouses being built at The Ridge development along Lexington and Lake Streets. These results are summarized in Table Five below.

Table 5: Ward Two - Build-out Summary							
Property type	Number of Parcels	Current Dwellings	Current Commercial Space (SF)	Additional Dwellings, By-Right	Additional Commercial, By-Right (SF)	Additional Dwellings, By Sp. Permit	Additional Commercial, Sp. Permit (SF)
Residential	1,663	2,748	1,518	137	85,350	151	220,561
Commercial	22	0	1,114,873	7	13,797	11	647,632
Industrial	3	0	450,463	0	26,567	0	296,914

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Mixed-Use	5	5	6,168	-2	15,262	-2	40,027
Tax Exempt	58	33	0	89	0	89	0
Vacant	69	0	0	414*	75,827	414*	184,400
<i>Uncategorized</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
TOTAL	1,820	2,786	1,573,022	645	216,803	663*	1,389,534

* Includes the development of 264 homes at The Ridge development

Residential Parcels

This analysis examined 1,723 residential parcels in Ward Two, 1,663 of which are developed and 60 are vacant. The great majority (94%) of these properties are single-family homes. The 1,080 multi-family units are concentrated in the Windsor Village Apartments (707 units), the Totten Pond Village condominium complex and three medium-sized (25-100 unit) apartment buildings. Ward Two also has a relatively high number (118) of "grandfathered" parcels that are subdivided into smaller lots that, in some cases, can be developed under zoning. Forty-two parcels in Ward Two can each add an additional dwelling, and 27 parcels can add a total of 99 units of multi-family¹ housing By-Right. This By-Right figure includes the addition of 102 new dwellings on "grandfathered" parcels. Four residential parcels near Route 128 are assumed to convert from residential to commercial uses, yielding a loss of four dwellings and the addition of nearly 45,800 SF of commercial space.

Residential expansion capacity in Ward Two is greater under Special Permit than By-Right provisions, but not to the degree seen elsewhere in the city. The ward has 46 parcels with the capacity to add an additional dwelling by Special Permit, while 34 properties can add a total of 113 multi-family units by Special Permit, including three parcels with the capacity to add more than 10 dwellings by Special Permit. Another seven residential parcels were assumed to convert from residential to commercial uses, yielding a net loss of eight dwellings and the addition of nearly 233,000 SF of commercial space by Special Permit.

Commercial/Industrial Parcels

Thirty-four parcels with commercial or industrial uses totaling nearly 1,600,000 SF were examined in Ward Two, 22 of which are developed and nine are vacant. Only nine (26%) of these parcels have By-Right capacity to add additional commercial space (110,000 SF), including three vacant sites that can accommodate 70,000 SF of new uses. One commercial property was assumed to convert nearly 3,000 SF of commercial space into two new residences By-Right.

Commercial/industrial properties in Ward Two have much greater expansion capacity via Special Permit than By-Right provisions. The ward has 22 commercial properties that can accommodate over 1,350,000 SF of new space by Special Permit. Unlike Ward One, most of this capacity comes from developed properties; vacant parcels in Ward Two can only accommodate 177,000 SF of new commercial uses. In addition, 23 properties without commercial uses can add over 200,000 SF of commercial space by Special Permit.

Mixed-Use Parcels

Ward Two currently has five properties that contain a mix of five homes and nearly 6,000 SF of commercial space. Only two (25%) of these parcels have any By-Right development capacity, for a total of 15,000 SF of commercial area at the expense of two residences. Three of these sites can add a total of 40,000 SF of commercial area by Special Permit at the cost of three dwellings. Residential properties in Business and Limited Commercial zones in Ward Two have the capacity to add 85,000 SF of retail space By-Right, and nearly 228,000 SF of space by Special Permit.

¹ Multi-family housing is defined in this study as residential structures with two or more dwellings per building.

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Tax-Exempt Parcels

All but one of the 58 tax-exempt parcels analyzed in Ward Two were assumed to remain unchanged by redevelopment, primarily because most (41) are publicly owned. The development capacity of only one large property, owned by the Archdiocese of Boston, was calculated at 89 single-family house lots both By-Right and by Special Permit under existing zoning.

Vacant Parcels

Assumptions were applied to 69 vacant parcels including 60 classified as "residential" and nine termed "commercial" by the Assessors' Department. These parcels can absorb 414 new dwellings and nearly 76,000 SF of commercial space By-Right, and 414 new homes and almost 185,000 SF of commercial space by Special Permit. Both residential projections include the construction of 264 townhouse units at The Ridge complex near Lexington and Lake Streets. In addition, 150 new dwellings can be constructed on vacant residential parcels By-Right and with a Special Permit. Only a token amount of new commercial development can occur on these vacant residential properties (6,300 SF By-Right, 7,000 SF by Special Permit).

Ward Three

Ward Three encompasses the area between Waltham's northern border and Trapelo Road, as well as the Hobbs Brook Reservoir and residential neighborhoods to the west of Hardy Pond. The 1,851 parcels analyzed in this ward contain over 2,400 dwellings and nearly 2,900,000 SF of commercial/industrial space, primarily a mix of retail businesses and offices. These parcels have a By-Right development potential of 456 additional dwellings and 101,000 SF of additional commercial/industrial space. These projected capacities increase to 685 additional residences and 635,000 SF of commercial space under Special Permits. The residential totals include the 280 residences being developed on the former Middlesex County Hospital property on Trapelo Road. These results are summarized in Table Six.

Table 6: Ward Three - Build-out Summary							
Property type	Number of Parcels	Current Dwelling Units	Current Commercial Space (SF)	Additional Dwelling Units, By-Right	Additional Commercial, By-Right (SF)	Additional Dwelling Units, Sp. Permit	Additional Commercial, Sp. Permit (SF)
Residential	1,755	2,407	0	85	0	190	0
Commercial	16	0	2,864,211	267*	67,316	267*	67,316
Industrial	3	0	27,565	0	0	0	23,127
Mixed-Use	3	3	3,047	0	0	0	0
Tax Exempt	57	14	0	58	14,109	122	510,555
Vacant	17	0	0	46	19,705	91	33,579
<i>Uncategorized</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
TOTAL	1,851	2,424	2,894,823	456	101,130	670	634,577

* Includes the development of 265 homes at the former Middlesex County Hospital site on Trapelo Road

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Residential Parcels

Ward Three is primarily residential, with 1,729 single-family homes and 26 multi-family properties with 678 dwellings, including the Northgate and Kingsway condominium complexes. By-Right development of 60 residential parcels can add a total of 85 new dwellings. Most of these properties can add one extra home each, although 15 can accommodate a total of 40 additional dwellings. Sixteen properties that contain “grandfathered lots” can absorb 19 additional dwellings By-Right. No residential parcels in Ward Three are assumed to convert from residential to commercial uses.

Ward Three’s housing stock has limited capacity to grow via Special Permit, with 64 residential parcels able to add 190 new dwellings. As mentioned above, the ward’s residential growth capacity is heightened by the residential transformation of the former Middlesex County Hospital into 265 condominium townhomes in a multi-phase development that includes associated construction of housing in Lexington.

Commercial-Industrial Parcels

Ward Three currently has 19 parcels with commercial/industrial uses approaching 2,900,000 SF. Only six (24%) of these parcels have any By-Right capacity, with the ability to accommodate a total of 67,000 SF of additional commercial space. No commercial properties in the ward were projected to lose commercial space in favor of residential uses. Waltham’s Zoning Code allows seven commercial/industrial properties in Ward Three to add over 90,000 SF of additional commercial space by Special Permit.

Mixed-Use Parcels

Three mixed-use properties with a total of three homes and 3,000 SF of commercial space in Ward Three were examined. None of these properties has any additional development capacity under either the By-Right or Special Permit provisions of existing Zoning.

Tax-Exempt Parcels

Fifty-seven tax-exempt parcels were analyzed in Ward Three, including the former Metropolitan State Hospital site, Our Lady the Comforter of the Afflicted Church on Trapelo Road and the United States Postal Service facility on Smith Street. Since the Waltham portion of the Metropolitan State Hospital site was recently acquired by the City, as was an undeveloped portion of the Our Lady’s parcel, only five of these parcels are assumed to be redeveloped in the future. The Postal Service’s facility can add an additional 14,100 SF of commercial space By-Right, and nearly 511,000 SF of space by Special Permit under existing zoning, although Federal regulations may allow the Service to build beyond this capacity. Three properties owned by the Commonwealth near the former Middlesex County Hospital site can accommodate 55 new homes By-Right, and 116 new dwellings by Special Permit, while another property owned by the State can absorb two new homes By-Right and five new dwellings under Special Permit.

Vacant Parcels

Seventeen (17) vacant parcels were examined in Ward Three. These parcels can absorb 46 new dwellings and nearly 20,000 SF of commercial space By-Right; via Special Permit they can accommodate 91 new homes and almost 34,000 SF of commercial space. One parcel, located directly west of Hardy Pond and subdivided with a number of “grandfathered” lots, has the capability to add 28 units By-Right on these “sub-parcels”, although surrounding wetlands could inhibit actual development of this many units. A relatively significant amount of new commercial development can occur on one vacant residential property in the ward (9,750 SF By-Right and Special Permit).

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Ward 4

Ward Four covers most of Waltham's northeastern quadrant, encompassing the area east of Forest Street between Trapelo Road and Beaver Street, as well as the Warrendale neighborhood north of Main Street. Tax-exempt organizations, including the National Archives, the Massachusetts Department of Mental Retardation, Bentley College and the Girl Scouts of America, own several large properties in the ward, many of which are undeveloped or contain large swathes of undeveloped land. The 1,394 parcels analyzed in this ward currently contain 1,628 dwellings and 1,687,000 SF of commercial space, primarily office and industrial uses.

If current development trends remain constant, these parcels have a By-Right development capacity of 1,535 additional dwellings and 200,000 SF of additional commercial space and a Special Permit development capacity of 3,206 additional homes and 1,208,000 SF of commercial space. This significant capacity to accommodate residential expansion reflects the redevelopment of the Fernald Center into a residential community, with over 1,300 townhouses if developed By-Right and 2,850 units by Special Permit. The results for Ward Four are summarized in Table Seven.

Table 7: Ward Four - Build-out Summary							
Property type	Number of Parcels	Current Dwelling Units	Current Commercial Space (SF)	Additional Dwelling Units, By-Right	Additional Commercial, By-Right (SF)	Additional Dwelling Units, Sp. Permit	Additional Commercial, Sp. Permit (SF)
Residential	1,289	1,601	0	40	5,134	40	76,353
Commercial	24	0	847,851	75	140,644**	123	799,265
Industrial	21	0	830,070	16	-13,695**	16	213,621
Mixed-Use	4	7	8,706	0	0	0	0
Tax Exempt	39	20	0	1,390	0	3,013	0
Vacant	17	0	0	14	67,712	14	118,152
<i>Uncategorized</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
TOTAL	1,394	1,628	1,686,627	1,535	199,795	3,206	1,207,391

** These figures represent net totals that include properties adding commercial space and others converting existing commercial space into residences in mixed-use developments

Residential Parcels

The build-out analysis examined 1,289 residential parcels in Ward Four, including 1,215 single-family homes and 74 multi-family properties with 386 dwellings, most of which are small 2-4 unit buildings. Waltham's Zoning allows 17 residential properties to add a total of 40 dwellings By-Right; 12 of these properties can each add one new home, while five can accommodate 28 new units. Three residential properties are projected to add both an extra dwelling and 3,800 SF of commercial space By-Right, while another four parcels can add a total of 1,400 SF in new commercial uses to existing dwellings. Fourteen residential parcels can absorb a new home by Special Permit. More significantly, seven strictly residential parcels in business zoning districts are projected to add a total of 36 homes and nearly 54,000 SF in retail space in mixed-use developments in the ward.

Commercial/Industrial Parcels

Ward Four has 45 parcels with nearly 1,700,000 SF of commercial/industrial land uses. Only six (13%) of these parcels have any By-Right development capacity; they can accommodate a total of 267,000 SF of new commercial uses. At the same time, 11 commercial parcels in the ward have potential to redevelop By-Right

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into mixed residential/commercial uses, losing 140,000 SF of commercial space in favor of 91 dwellings situated over 33,000 SF of shops.

Thirty-one (69%) of Ward Four's commercial/industrial parcels can accommodate over 1,000,000 SF of additional development via Special Permit. Most (79%) of this capacity is contained in just five sites, one of which can absorb nearly 500,000 SF of new commercial uses. Fourteen parcels in the ward with 137,000 SF of existing commercial uses will be able to add 123 dwellings and over 185,000 SF of retail space in mixed-use development by Special Permit. One parcel with nearly 36,000 SF of commercial space is projected to lose 15,000 SF of space in favor of adding 17 residences.

Conversion of commercial parcels into mixed retail and residential uses will be concentrated in the business zones districts that are closer to Main Street, where renovation of buildings into two floors of apartments over ground floor shops will closely match existing development patterns on Main Street.

Mixed-Use Parcels

This study analyzed four mixed-use properties with a total of seven homes and 8,700 SF of commercial space in Ward Four. None of these properties has any additional development capacity under either the By-Right or Special Permit provisions of Waltham's Zoning Ordinances.

Tax Exempt Parcels

Ward Four is home to a number of large tax-exempt parcels, including those owned by the Commonwealth of Massachusetts, Bentley College, the Girl Scouts of America and the City itself. Thirty-nine tax-exempt parcels were examined, with large-scale redevelopment projected for the Fernald Center as well as the portion of the former Murphy Federal Center that is now owned by Bentley College. Some of these parcels can accommodate a tremendous amount of residential expansion under the city's current Zoning Ordinances, particularly by rezoning them to residential districts. Rezoning of the Fernald Center site into a Residence D district and construction of multi-family townhouses on the property alone will produce 1,320 new units By-Right and 2,864 residences by Special Permit. Bentley College has also just completed the construction of 150 dormitory units at the site of the former Murphy Federal Center.

Vacant Parcels

Seventeen vacant parcels were examined in Ward Four. Twelve of these properties are classified as "vacant residential" by the Assessors' Department, the rest are "vacant commercial" or "vacant industrial" plots. These sites can absorb 14 new dwellings and nearly 58,000 SF of new commercial space By-Right, and 14 new homes and over 102,000 SF of commercial space with Special Permits.

Ward Five

Ward Five encompasses the neighborhoods between Main Street and the Charles River, from the Watertown line west to Banks Square. A total of 1,298 parcels were analyzed in this ward, which includes many of the city's older neighborhoods and parts of the downtown. These properties contain 2,625 dwellings as well as 2,698,000 SF of commercial space, characterized by relatively dense single- and multi-family residences and small to medium-sized retail, office and light industrial enterprises.

Assuming current development trends remain constant, Ward Five has a By-Right development capacity of 485 additional dwellings and 130,000 SF of additional commercial space. Under Special Permit, this development capacity increases to 1,234 additional dwellings and 2,902,000 SF of commercial space. The large difference between By-Right and Special Permit capacity in Ward Five is mainly attributable to the presence of the City's Riverfront Overlay District across the southern portion of the ward, where dense mixed residential and commercial uses are permitted and encouraged by Special Permit. These findings are summarized in Table Eight.

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Table 8: Ward Five - Build-out Summary

Property type	Number of Parcels	Current Dwellings	Current Commercial Space (SF)	Additional Dwellings, By-Right	Additional Commercial, By-Right (SF)	Additional Dwellings, By Sp. Permit	Additional Commercial, Sp. Permit (SF)
Residential	1,095	2,189	0	256	12,017	302	99,611
Commercial	72	0	955,624	170	-27,362**	545	1,061,174
Industrial	19	0	1,656,562	0	29,952	248	1,174,856
Mixed-Use	35	135	85,342	2	-2,798**	30	10,646
Tax Exempt	41	301	0	0	0	0	0
Vacant	36	0	0	48	118,199	109	555,658
<i>Uncategorized</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
TOTAL	1,298	2,625	2,697,528	475	130,009	1,234	2,901,945

** These figures represent net totals that include properties adding commercial space and others converting existing commercial space into residences in mixed-use developments

Residential Parcels

Ward Five includes 1,095 residential parcels. Although single-family homes occupy 56% of these properties, the bulk of the ward's housing (almost 2,000 dwellings) is located in 517 multi-family properties, most of which consist of small (2-4 unit) buildings. Ward Five has only five large (20+ unit) developments with just over 125 residences. A total of 227 parcels have By-Right development capacity to add a total of 256 additional dwellings; just 13 of these have the ability to add more than one new unit. Additionally, 10 residential properties in business zones in Ward Five are projected to add a total of 12,017 SF in commercial space along with 10 new dwellings By-Right.

Similar to other wards, expansion capacity of residential parcels is not much greater under the Special Permit provisions. Two hundred and fifty-nine parcels can add a total of 302 dwellings by Special Permit, 44 of these properties can add multiple new dwellings totaling 75 units. Three residential parcels within Industrial zones are assumed to redevelop from residential to commercial uses, yielding a net loss of seven dwellings and the addition of over 33,000 SF of commercial space by Special Permit.

Commercial/Industrial Parcels

Ninety-one parcels with over 2,600,000 SF of commercial/industrial uses were examined in Ward Five. Only 13 of these parcels have any By-Right expansion capacity; they can accommodate 179,000 SF of additional space. Twenty of these properties, with 266,000 SF of space, are projected to convert By-Right into mixed-use developments with 170 dwellings and 95,000 SF of ground floor retail space.

Properties in Ward Five have much greater expansion capacity via the Special Permit than By-Right. Twenty-three commercial/industrial properties with 1,700,000 SF of space can add almost 2,600,000 SF of similar uses by Special Permit. Two properties, a shopping center and a former industrial complex, account for almost 80% (2,100,000 SF) of this Special Permit expansion capacity.

While Ward Five's commercial and industrial base has substantial expansion capacity, more than half (53) of such properties are expected to convert to mixed residential/retail developments via Special Permit, adding nearly 793 dwellings to the housing stock. Twelve commercial/industrial parcels with Special Permit development capacity are expected to add 102 new residences along with almost 53,000 SF of retail space in mixed-used developments. More significantly, 41 commercial/industrial properties in the ward are expected to convert by Special Permit over 350,000 SF of commercial space into mixed-use developments with 517 residences and

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272,000 SF of retail uses. Most of this conversion activity will be focused along the ward's southern boundary, where 30 non-residential parcels within the Riverfront Overlay Zoning District will convert to mixed-use complexes with nearly 120 dwellings and 144,000 SF of retail space.

Mixed Use Parcels

Thirty-four parcels in Ward Five contain both residential and commercial uses, totaling 135 dwellings and 85,000 SF of commercial space. Only two of these properties have any By-Right growth potential, consisting of conversion of 2,800 SF of commercial space into two dwellings. Fifteen of these parcels can expand via Special Permit, adding a total of 30 residences at the cost of 9,000 SF of commercial space.

Tax Exempt Parcels

None of the 41 tax-exempt parcels was assumed to remain unchanged by redevelopment, primarily because most are publicly owned.

Vacant Parcels

Thirty-six vacant properties in Ward Five were analyzed. A third (12) of these parcels are residential, the remainder are commercial/industrial. A total of 48 homes and 118,000 SF of commercial space can be built By-Right on these sites; under Special Permit 109 dwellings and 555,000 SF of commercial uses can be constructed. Some of this Special Permit development capacity rests within the 12 vacant parcels in the ward that lie within the Riverfront Overlay District; these can accommodate mixed-unit development totaling 28 units and 70,000 SF of retail space.

Ward Six

Ward Six stretches across the middle of the city, extending from the Highlands neighborhood eastwards to the area around the Gardencrest apartment complex. The 1,200 parcels analyzed in this ward contain nearly 3,000 dwellings, mixed between single-family homes and apartment buildings, as well as 1,019,000 SF of commercial space comprised of retail businesses, light industrial facilities and some small office properties.

Assuming current development trends remain constant, these parcels have a By-Right development capacity of 677 additional dwellings and no additional commercial space, and a Special Permit development capacity of 1,143 additional dwellings and 1,670,000 SF of commercial space. These findings are summarized in Table Nine.

Property type	Number of Parcels	Current Dwellings	Current Commercial Space (SF)	Additional Dwellings, By-Right	Additional Commercial, By-Right (SF)	Additional Dwellings, By Sp. Permit	Additional Commercial, Sp. Permit (SF)
Residential	1,013	2,829	0	275	11,005	318	144,295
Commercial	76	0	647,698	135	-174,361**	284	697,999
Industrial	16	0	324,986	14	-65,696**	36	389,575
Mixed-Use	20	62	46,022	5	-504**	12	8,080
Tax Exempt	41	66	0	189	0	407	0
Vacant	33	0	0	59	16,525	86	432,202
<i>Uncategorized</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
TOTAL	1,200	2,959	1,018,706	677	-213,031**	1,143	1,672,151

** These figures represent net totals that include properties adding commercial space and others converting existing commercial space into residences in mixed-use developments

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Residential Parcels

This analysis examined 1,013 residential parcels in Ward Six. Almost half of these lots contain a single-family dwelling, the rest are primarily occupied by two, three and four-units. Sixty-eight parcels contain larger apartment buildings with over 1,200 residences, including Gardencrest with more than 700 units. One hundred fifty-nine parcels can add an additional dwelling By-Right, while 36 parcels can add a total of 116 units By-Right. Residential properties in business zones can accommodate nine dwellings and 11,000 SF of retail space in new mixed-use development By-Right. Ward Six also has a high number (87) of “grandfathered” small-lot parcels containing 166 homes that can accommodate an additional 70 single-family dwellings By-Right. No residential parcels in the ward are projected to convert to commercial uses.

Expansion capacity for residential properties in Ward Six is not much greater by Special Permit than By-Right. One hundred and nine residential parcels can each add one additional dwelling by Special Permit, while 57 properties can accommodate multiple (162) new units by Special Permit. Residential properties in business zones can add a total of 52 new dwellings and 103,000 SF of new retail space in mixed-use development. Three residential parcels in commercial zoning districts are expected to convert to commercial uses through the Special Permit process, yielding a net loss of five dwellings and the addition of over 41,000 SF of commercial space.

Commercial/Industrial Parcels

Ninety-two parcels with commercial uses totaling over 970,000 SF were examined in Ward Six. Only six (7%) of these parcels have any By-Right capacity to add additional commercial space totaling 65,000 SF. On the other hand, 45 of these parcels, located in business zones, can convert over 305,000 SF of existing commercial space By-Right into 135 residences in mixed-use developments containing about 46,000 SF of retail space.

As seen elsewhere in the city, commercial properties in Ward Six have much greater Special Permit expansion capacity than is available By-Right. Given the ward’s location north of Main Street, it is projected that much of the future commercial expansion in Ward Six will be combined with residences in mixed-use developments. Thirty-six of the ward’s commercial properties can add over 1,250,000 SF of commercial space by Special Permit. Five of these parcels can add more than 100,000 SF of commercial space, while another seven can add between 25,000 and 100,000 SF of commercial uses by Special Permit. Just over half (19) of the lots with Special Permit expansion capacity are projected to add 1,210,000 SF of strictly commercial space; the remaining 17 properties are projected to add 79 dwellings along with nearly 51,000 SF of retail space in mixed-use developments. This amount of growth will nearly double the amount of commercial space in Ward Six.

Mixed Use Parcels

Twenty parcels in Ward Six contain both residential and commercial uses, totaling 62 dwellings and 46,000 SF of commercial space. Nineteen of these parcels have no By-Right expansion capacity under zoning; the one lot that can expand By-Right can add five dwellings. Under Special Permit provisions, eight of these properties can add a total of 12 dwellings and 8,080 SF of retail space.

Tax Exempt Parcels

All but four of Ward Six’s 41 tax-exempt parcels were assumed to remain unchanged by redevelopment. The former Saint Joseph’s Church parcel, the Waltham District Courthouse on Linden Street and two parcels that comprise the University of Massachusetts Agricultural Field Station on Beaver Street were analyzed for their development capacity because they were either recently auctioned to a private developer or have been linked to being auctioned in the past. The Saint Joseph Church and Waltham Courthouse properties have a total By-Right capacity of 26 additional dwellings and a Special Permit capacity of 53 dwellings. In contrast, the much

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larger Field Station lots can accommodate 164 multi-family units By-Right, and 355 residences by Special Permit.

Vacant Parcels

Thirty-three vacant properties were analyzed in Ward Six. Seven (21%) of these parcels are residential; the remaining parcels are either commercial or industrial. These lots can accommodate a total of 59 homes and 16,500 SF of commercial space By-Right and 86 new dwellings and 432,000 SF of commercial uses by Special Permit.

Ward Seven

Ward Seven covers Waltham's southwest quadrant, encompassing the Cedarwood, Ravenswood, Angleside and Robert's Cove neighborhoods. The 1,312 parcels analyzed contain 1,762 dwellings, mostly in single-family homes, as well as 2,382,000 SF of commercial space comprised primarily of medium and large office complexes. Ward Seven also includes the Brandeis University campus.

Assuming current development trends remain constant, these parcels have a By-Right development capacity of 482 additional dwellings and 742,000 SF of additional commercial space, and a Special Permit development capacity of 530 additional dwellings and 8,646,000 SF of commercial space under current zoning. Please note that these figures include the recent construction of 364 apartments at Longview Terrace on the site of the former Waltham Hospital. Table Ten summarizes these findings.

Property type	Number of Parcels	Current Dwellings	Current Commercial Space (SF)	Additional Dwellings, By-Right	Additional Commercial, By-Right (SF)	Additional Dwellings, By Sp. Permit	Additional Commercial, Sp. Permit (SF)
Residential	1,119	1,704	0	41	0	43	42,566
Commercial	34	0	2,298,021	4	103,575	4	4,495,789
Industrial	8	0	75,720	0	187,483	0	1,213,888
Mixed-Use	4	13	8,692	0	0	0	11,112
Tax Exempt	106	45	0	40	0	86	0
Vacant	40	0	0	397	451,434	397	2,882,738
<i>Uncategorized</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
TOTAL	1,312	1,762	2,382,487	482	742,492	530	8,646,093

** These figures represent net totals that include properties adding commercial space and others converting existing commercial space into residences in mixed-use developments

Residential Parcels

This analysis examined 1,119 residential parcels in Ward Seven, consisting of 993 single-family homes and 126 multi-family properties. Most (76) multi-family lots contain two and three-family residences; 50 properties consist of apartment houses with a total of 547 dwellings, including the Charlesbank Gardens apartment complex and the Angleside condominiums. Only 34 residential parcels in the ward can add one additional dwelling By-Right, while another three parcels can add seven units of multi-family housing By-Right. No residential parcels are assumed under the parameters of this analysis to convert By-Right from residential to commercial uses.

Ward Seven has a residential expansion capacity that is not much greater by Special Permit than By-Right. Only 33 residential parcels have the capacity to add an additional dwelling, while seven properties can add a

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total of 10 multi-family units by Special Permit. Additionally, three residential parcels in commercial zones were assumed to convert to commercial uses with Special Permits, yielding a net loss of three dwellings and the addition of nearly 42,000 SF of commercial uses.

Commercial/Industrial Parcels

Forty-two parcels with commercial uses totaling nearly 2,400,000 SF were examined in Ward Seven. Only 15 (32%) of these parcels have capacity to add additional commercial space By-Right; these properties can add a total of 306,000 SF of space. No commercial properties were projected to convert space to mixed residential and commercial uses.

Similar to Ward One, commercial properties in Ward Seven have tremendous expansion capacity via Special Permits. Overall, projected Special Permit commercial development will nearly quadruple the amount of commercial space in the ward. Ward Seven's location west of downtown precludes extensive mixed commercial and residential development; most future commercial expansion will consist of office and research space, following existing development patterns. Thirty-one commercial properties in the ward can add nearly 5,750,000 SF of commercial space by Special Permit; 12 of these parcels can accommodate over 100,000 SF of new commercial development, including parking garages.

Mixed Use Parcels

Four parcels contain both residential and commercial uses, totaling 13 homes and 8,700 SF of commercial space. None of these parcels has By-Right expansion capacity. Under Special Permit provisions, one of these properties can add a total a dwelling while retaining 2700 SF of retail space, and another parcel is projected to convert a dwelling into 11,200 SF of commercial uses.

Tax-Exempt Parcels

All but five of the 106 tax-exempt parcels were assumed to remain unchanged by redevelopment. Five properties owned by the Commonwealth of Massachusetts and Brandeis University have a total By-Right capacity of 40 additional dwellings and a Special Permit capacity of 86 dwellings.

Vacant Parcels

Forty vacant parcels were analyzed in Ward Seven. Eighteen of these lots are categorized as residential, the others as commercial or industrial. Overall, 377 new residences can be built on these properties By-Right and by Special Permit respectively, including the recently constructed 364-unit Longview Terrace apartment complex on the grounds of the former Waltham Hospital. Sixteen vacant commercial and industrial lots can also add over 450,000 SF of commercial uses By-Right and 2,850,000 SF of commercial space by Special Permit.

Ward Eight

Ward Eight covers much of Waltham's south side, stretching from the Island neighborhood around Rumford Avenue to the Newton border along High Street. The 1,176 parcels analyzed contain 3,100 dwellings, mixed between single-family homes and apartment buildings, as well as 1,050,000 SF of commercial space comprised of retail businesses, light industrial facilities and small office properties. These parcels have a net By-Right development capacity of 317 additional dwellings and no additional commercial space, and a Special Permit development capacity of 1,028 additional dwellings and no additional commercial space under current zoning.

These figures are based on the assumption that residential and mixed-use residential/commercial development are the highest and best uses of land in Ward Eight, and that owners of existing commercial properties with any expansion capacity will choose to develop additional mixed-use space either By-Right or by Special Permit. The presence of Waltham's Riverfront Overlay District throughout a large portion of the ward provides an incentive to construct dense multi-use developments. Table Eleven summarizes these projections.

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Table 11: Ward Eight - Build-out Summary							
Property type	Number of Parcels	Current Dwellings	Current Commercial Space (SF)	Additional Dwellings, By-Right	Additional Commercial, By-Right (SF)	Additional Dwellings, By Sp. Permit	Additional Commercial, Sp. Permit (SF)
Residential	1,051	2,898	0	202	2,703	213	117,111
Commercial	40	0	418,456	31	-41,660**	58	-132,975**
Industrial	13	0	569,444	0	3,031	596	-361,329**
Mixed-Use	26	100	62,345	0	0	2	2,047
Tax Exempt	26	102	0	0	0	0	0
Vacant	20	0	0	84	23,497	159	41,114
<i>Uncategorized</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
TOTAL	1,176	3,100	1,050,245	317	-12,429**	1,028	-334,032**

** These figures represent net totals that include properties adding commercial space and others converting existing commercial space into residences in mixed-use developments

Residential Parcels

This analysis examined 1,081 residential parcels in Ward Eight. One-quarter of these lots contain a single-family dwelling, the rest are primarily occupied by two, three and four-unit homes. Eighty-nine parcels contained larger apartment buildings with a total of 817 residences. By-Right, 195 parcels can add one additional dwelling, while three parcels can add seven new dwellings By-Right. No residential parcels in the ward are assumed to convert By-Right from residential to commercial uses.

Expansion capacity for residential lots in Ward Eight is slightly greater under the Special Permit provisions than under the By-Right regulations. Specifically, 206 residential properties have the capacity to add one additional dwelling by Special Permit, while two properties can each add four new units by Special Permit. One residential property in the ward is projected to convert one existing home into 9,700 SF of commercial space by Special Permit.

Commercial/Industrial Parcels

The Zoning Ordinances offer commercial and industrial properties in Ward Eight, particularly those in the Riverfront Overlay District, with significant potential to redevelop into mixed-use residential and retail projects. Fifty-three parcels with commercial or industrial uses totaling over 990,000 SF were examined. Only seven (9%) of these properties can expand By-Right; overall they have the capacity to add a total of 41,000 SF of new commercial space. On the other hand, 15 non-residential parcels are projected to convert nearly 80,000 SF of commercial space By-Right into 31 dwellings in mixed-use projects.

Waltham's Special Permit zoning provisions dramatically increase Ward Eight's capacity to absorb new mixed-use development, particularly for properties in the Riverfront Overlay District, which covers portions of the ward along the Charles River and the Island. Ten commercial/industrial parcels in the ward can add 59,000 SF of new commercial space by Special Permit, along with 106 new residences. In contrast, 33 non-residential properties are projected to convert over 550,000 SF of commercial uses into 548 new residences in mixed-use developments with over 300,000 SF of retail space. Almost all of this redevelopment will occur in 15 lots within the Riverfront Overlay District, where 476,000 SF of primarily industrial uses will be converted into 535 new homes.

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Mixed Use Parcels

Four parcels contain both residential and commercial uses, totaling eight dwellings and 10,000 SF of commercial space. None of these parcels has any By-Right expansion capacity; one of these properties can convert 5,700 SF of commercial uses into two new residences by Special Permit.

Tax-Exempt Parcels

This analysis assumes that none of the 26 tax-exempt parcels in Ward Eight will be redeveloped.

Vacant Parcels

Twenty vacant parcels in Ward Eight were studied. Eight of these lots are residential, the rest are commercial or industrial. These properties can add 84 units and 23,400 SF of retail space By-Right, and 159 units and 41,000 SF of retail space by Special Permit. Approximately half of the new homes on these parcels and all of the new commercial space will be in mixed-use developments.

Ward Nine

Ward Nine stretches across Waltham's downtown and along the banks of the Charles River. The ward extends from the Charles Street area southeastwards to Moody Street and onwards to Newton Street and Calvary Cemetery near the Newton border. The 967 parcels analyzed in this ward contain nearly 2,663 dwellings, mixed between single-family homes and apartment buildings, as well as 2,060,000 SF of commercial space comprised of shops, restaurants, bars, offices, wholesale and light industrial facilities. Many commercial uses are contained in former factory buildings that may be well suited to conversion into mixed-use residential and retail complexes.

Property type	Number of Parcels	Current Dwellings	Current Commercial Space (SF)	Additional Dwellings, By-Right	Additional Commercial, By-Right (SF)	Additional Dwellings, By Sp. Permit	Additional Commercial, Sp. Permit (SF)
Residential	727	2,093	0	122	24,592	273	189,237
Commercial	91	0	1,050,557	154	-279,306**	830	-467,974**
Industrial	36	0	821,844	3	27,303	973	-427,901**
Mixed-Use	50	469	188,068	18	2,655	123	16,897
Tax Exempt	42	101	0	0	1,516	0	29,788
Vacant	21	0	0	21	56,948	78	37,282
<i>Uncategorized</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
TOTAL	967	2,663	2,060,469	318	-166,292	2,277	-622,671

** These figures represent net totals that include properties adding commercial space and others converting existing commercial space into residences in mixed-use developments

These parcels have a By-Right development capacity of 318 additional dwellings and no additional commercial space, and a Special Permit development capacity of 2,277 additional dwellings and no additional SF of commercial space. Similar to Ward Eight, these figures are based on the assumptions that residential and mixed-use residential/commercial development are the highest and best uses of land, and that owners of existing commercial properties with any expansion capacity will choose to develop additional mixed-use space either By-Right or by Special Permit. The presence of Waltham's Riverfront Overlay District in significant portions of Ward Nine heightens the ability to construct dense multi-use developments. These findings are summarized above in Table Twelve.

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Residential Parcels

This analysis examined 727 residential parcels in Ward Nine. They are primarily occupied by two, three and four-unit homes. Eighty-two parcels contain larger apartment buildings providing a total of 671 units. Under the assumptions of this study, 99 parcels can add one additional dwelling By-Right, while 11 parcels can add 28 new units By-Right. Twelve of these properties, situated in commercial and business districts, can also add 24,600 SF of commercial uses By-Right. Two residential parcels are projected to convert from residential to over 15,000 SF of commercial uses.

As in other wards, residential expansion capacity in Ward Nine is greater under Special Permit than as-of-right regulations. Ninety-two parcels can add one additional dwelling by Special Permit, while 86 properties can add multiple units (totaling 183 dwellings) by Special Permit. Unlike other areas, this Special Permit residential capacity is not concentrated amongst a few properties in that 25 properties can accommodate relatively small, but dense, multi-family developments by adding more than three residences. Additionally, 154 residential parcels can add nearly 180,000 SF of commercial space by Special Permit. One residential parcel is projected to convert to a commercial use through the Special Permit process, yielding a net loss of two dwellings and the addition of 9,700 SF of commercial space.

Commercial/Industrial Parcels

One hundred twenty-seven parcels with over 1,870,000 SF of strictly commercial or industrial space were examined in Ward Nine. Only 29 of these properties can expand By-Right by 154,000 SF. Another 33 commercial-industrial parcels in the ward are projected to convert 88% of their existing commercial space (406,000 SF) into 154 residences By-Right.

Commercial properties in Ward Nine have much greater expansion capacity via the Special Permit provisions of the Zoning Ordinances and the Riverfront Overlay District. The ward's location astride the Moody Street and Charles River corridors, with concentrations of large, older industrial and heavy commercial properties, indicates that most commercial expansion will be combined with residential uses in developments similar to Cronin's Landing, a large mixed-use complex on Moody Street.

Fourteen small commercial/industrial properties are projected to add new commercial space by Special Permit, nearly tripling their space (to over 260,000 SF) while adding 623 dwellings. In contrast, 104 properties, mainly older factories and other industrial facilities, are projected to convert nearly 65% of their existing commercial space (1,060,000 SF) into over 1,100 new residences by Special Permit, with the remaining commercial area converted into retail and entertainment uses. This mixed-use conversion capacity is concentrated in 27 properties that can adapt their commercial area into 20 or more dwellings; these parcels are projected to convert nearly 560,000 SF of commercial uses (58% of their total space) into over 850 new homes.

Mixed Use Parcels

Fifty parcels examined in Ward Nine contain both residential and commercial uses, totaling 469 dwellings and 188,000 SF of commercial space. Forty-two of these parcels have no By-Right expansion capacity; the remaining seven lots can add a total of 18 dwellings and 2,700 SF of commercial space By-Right. Special Permits could allow 33 properties to add 123 units and 20,000 SF of retail space.

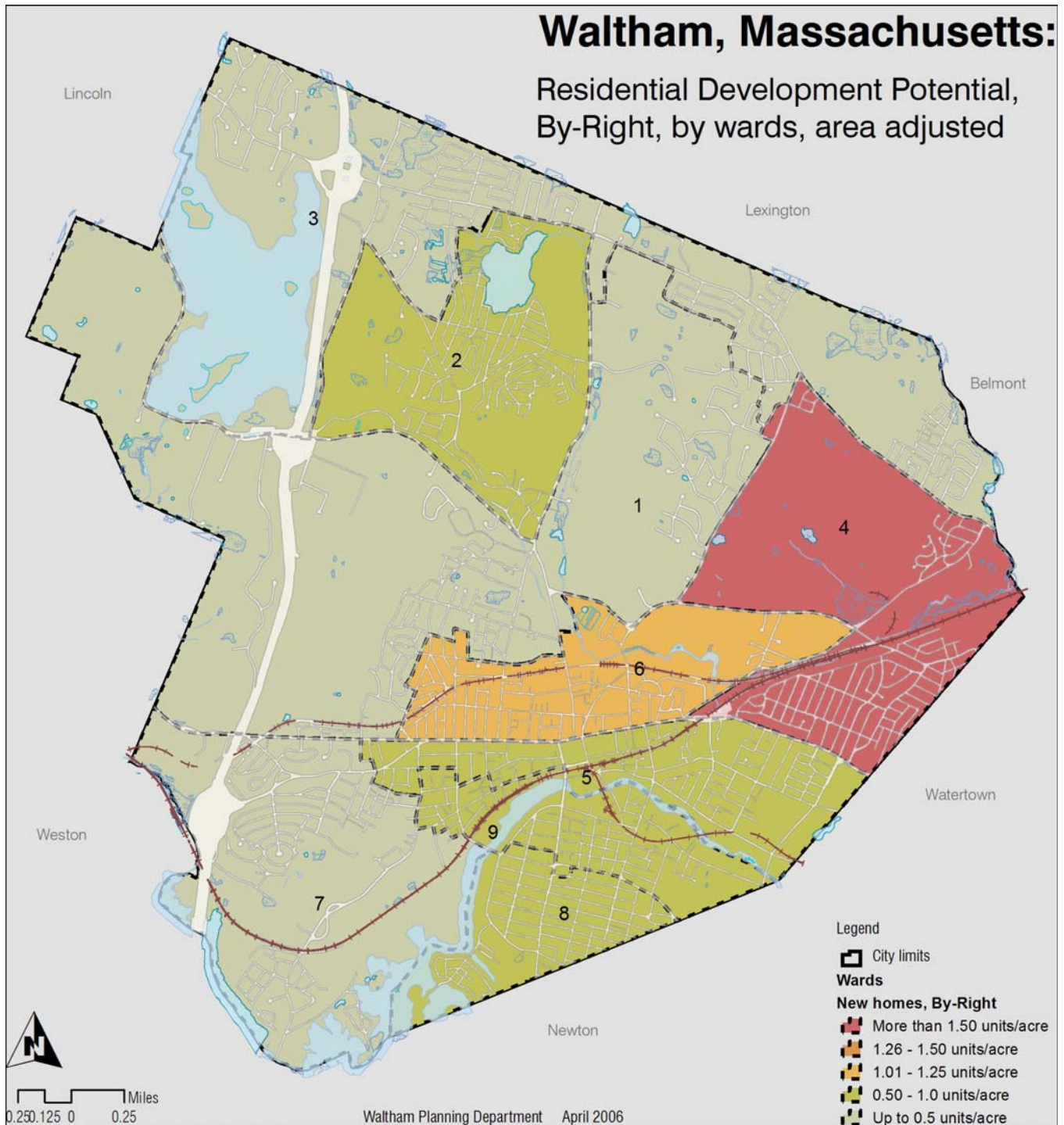
Tax-Exempt / Vacant Parcels

None of the 42 tax-exempt parcels in Ward Nine is projected to be redeveloped. Twenty-one vacant parcels in Ward Nine were examined, of which 6 are residential and the rest are commercial or industrial. These properties can add a total of 21 units and 57,000 SF of retail space By-Right, and 133 units and 37,000 SF of retail space by Special Permit.

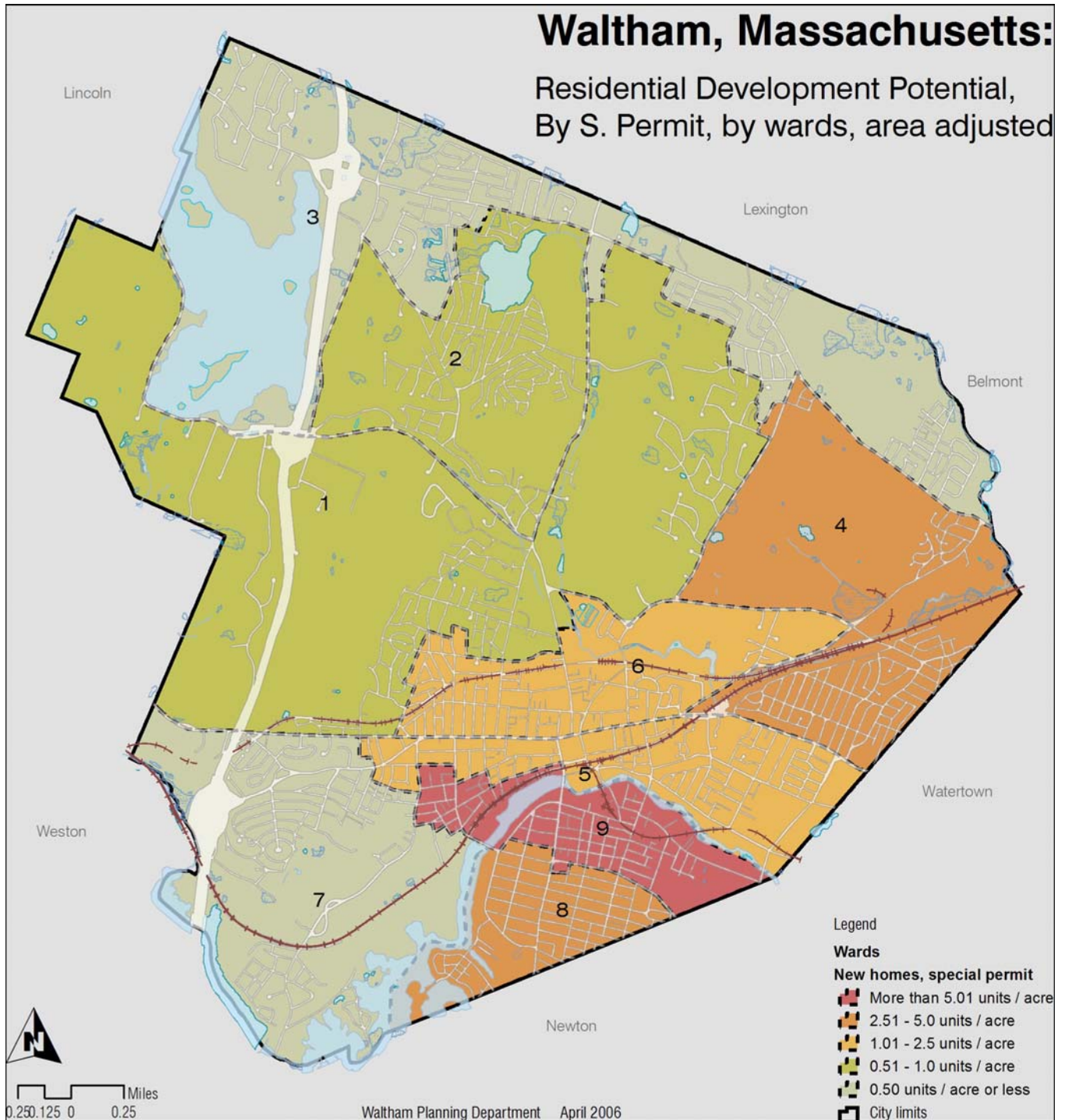
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Additional maps

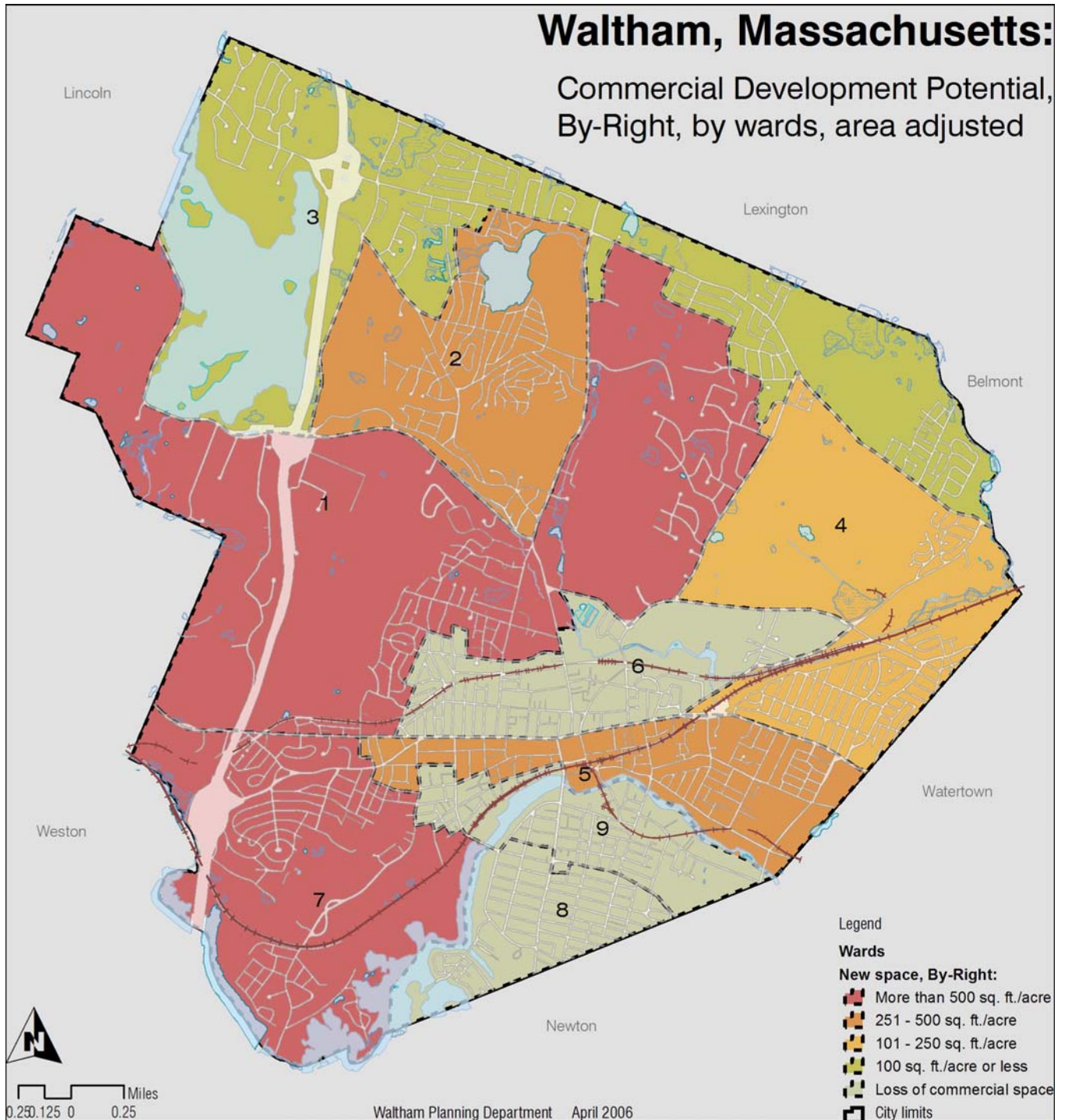
Map Five



Map Six

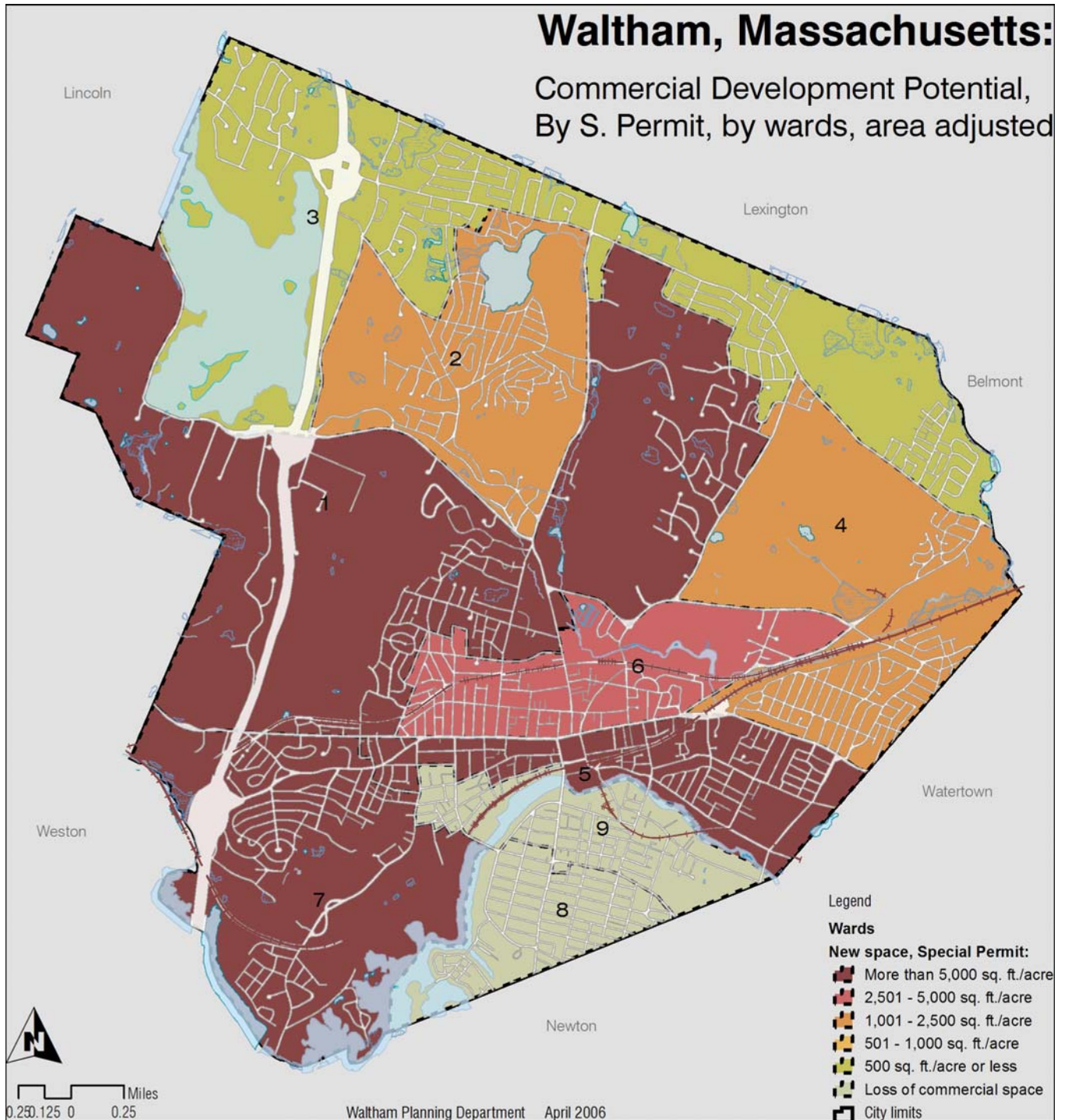


Map Seven



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Map Eight



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Impacts of Projected Development

Communities use development impact studies to gauge the potential consequences of maintaining current development patterns, estimate the results of revising zoning ordinances or to explore the implications of allowing particular development proposals to be permitted. These reports are often combined with fiscal impact analyses, which project the net benefits and costs associated with estimated future development. Fiscal and other constraints dictate that this Buildout Analysis briefly and broadly examine impacts to municipal services resulting from development to the estimated capacities allowed By-Right and under Special Permit in Waltham's existing zoning ordinances. This should at least provide a sense of the magnitude of change that could be felt by Waltham residents if development is allowed to proceed to the limits allowed by existing zoning.

School Enrollment

Increases in the number of school-aged children will probably be the largest single impact of future residential development. Education costs generally consume the greatest share of municipal budgets in Massachusetts; in 2004 the Waltham School Department spent \$13,478 per pupil across all of its programs, which served over 4,700 students. Forecasting school enrollment resulting from future development requires making several assumptions about types of home construction, household composition and size. MAPC developed excellent forecasting methods using statistical data from the 2000 Census and surveys of residential developments throughout metropolitan Boston for its *Peer Review of the Master Plan for the South Weymouth Naval Air Station*, published in 2005.

Table A summarizes the application of MAPC's methodology to Waltham's projected By-Right and Special Permit capacity for new residential development. Overall, construction of 5,700 dwellings By-Right in Waltham will add nearly 2,000 new school-age children to the city's school system, while the addition of over 12,200 new homes by Special Permit will bring in nearly 3,400 school-age children. Adjusting for private school attendance², residential development on this scale will respectively boost enrollment in the Waltham School System between 35% and 61%. To maintain Waltham's current staffing levels in the face of such increases, between 135 and 269 new teachers and 32 and 55 administrative personnel may have to be hired³. While the Waltham School Department is nearing completion of an eight-school rebuilding program, accommodation of this amount of new students will require construction of new school buildings, or at the very least re-use of some formerly surplus school properties⁴.

Property type	Projected Number of Units, By-Right	Projected Number of Units, Sp. Permit	School-Age Children per New Unit*	Additional School-Age Children, By-Right	Additional School-Age Children, Special Permit
Senior Apartments	176	685	0	0	0
Condominiums	1,038	2,968	0.233	242	694
Apartments	620	1,581	0.316	196	524
Townhouses	2,429	5,513	0.219	531	1,172
Single Family Homes, Basic	580	580	0.676	392	392
Single Family Homes, Large	878	878	0.698	613	613
TOTAL	5,722	12,205	-	1,975	3,395

* These rates were estimated by MAPC with the Public Use Microdata Set from the 2000 US Census for the Boston metropolitan area.

** Totals may not add due to rounding.

² The 2000 U.S. Census found that 10.5% of children in Waltham between the ages of 5 and 17 attended private schools. The Massachusetts Department of Education reported a private school attendance rate of 15% in the Waltham school district for 2002-03.

³ Waltham's overall student-teacher ratio for 2005-06 is 10.7 to 1. The Waltham School Department also has 1.9 administrative staff per 100 students in 2005-06.

⁴ At the conclusion of its eight-school building program, the Waltham School Department will be able to absorb up to 1,600 new students between grades K-12.

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Table A also clearly demonstrates that the type of new homes built is just as important as the number of new dwellings in determining the sheer number of new students that could access Waltham's school system under different Buildout scenarios. Assuming current construction trends continue over the next five to ten years, most new residences in Waltham will consist of condominiums, townhouses and apartments, the bulk of which will have two bedrooms. MAPC's aforementioned Census analysis indicates that the average number of children per dwelling climbs steeply between dwellings with one or two bedrooms and those with three or more bedrooms, while single-family homes and apartments generally have higher numbers of school-age children than condominiums and townhouses.

Public Safety

Development of over 5,700 and 12,200 dwellings respectively By-Right and by Special Permit, along with the potential addition of millions of square feet of new commercial space, will require the hiring of additional public safety personnel and possibly construction of new police, fire, and ambulance facilities. The Waltham Fire Department estimates that development of between 1,200 and 2,800 new homes on the Fernald School campus alone could require an additional fire and ambulance company to be located in North Waltham. To maintain Waltham's current staffing of fire and emergency personnel, in terms of personnel as a percentage of population, 32 additional firemen and 7 additional paramedics/emergency medical technicians will have to be hired to accommodate Waltham's By-Right Buildout capacity, and 64 new firemen and 14 new emergency staff will be needed to handle Special Permit capacity. This additional staffing will also require between two and four new fire engines, as well as new ambulances, support vehicles and possibly up to four new fire stations if current fire structures cannot adequately house additional equipment and manpower.

Similarly, the Waltham Police Department estimates that projected residential development of just the Fernald campus would require the hiring of twelve additional police officers. Construction of housing up to Waltham's By-Right and Special Permit capacities will respectively require hiring between 33 and 70 additional police officers, 4 and 8 new emergency dispatchers, 7 and 9 new school crossing guards and 2 and 5 additional civilian support staff. Besides new police vehicles and equipment, this amount of additional staff may require construction of up to two new police sub-stations.

Table B: Projected Public Safety Hiring Required to Maintain Current Staffing Levels				
Public Safety Personnel	ADDITIONAL STAFF REQUIRED		ADDITIONAL FACILITIES REQUIRED	
	By-Right Capacity	Sp. Permit Capacity	By-Right	Sp. Permit
Fire	32	64	2	4
Paramedic / EMT	7	14	1	1
Police	33	70	1	2
Emergency Dispatch	4	8	0	0
School Traffic	7	9	0	0
Administrative (Police & Fire)	5	10	0	0
TOTAL	88	175	4	7

** Totals may not add due to rounding.

Infrastructure

Construction of new homes and commercial property will not only require the hiring of additional municipal employees, but will increase usage of public infrastructure such as roads, and water, sewer and drainage systems. In gauging the effects of residential development of just the Fernald School campus, Waltham's Transportation Department estimates that peak hour vehicle traffic on Trapelo Road could increase by over 10%,

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requiring provision of additional lanes to maintain current service levels. Construction of thousands of new dwellings By-Right and by Special Permit, along with millions of square feet of new commercial space, will increase traffic loads on major and minor roads throughout Waltham. Unfortunately, little space exists for road widening, particularly for major arteries such as Trapelo Road and Lexington, Main, Moody and South Streets.

Waltham faces a similar situation with its water systems, part of which (drinking water and trunk sewer) are operated by the Massachusetts Water Resources Authority. Many water, sewer and storm mains in the city are operating substantially below capacity due to age and condition, and can handle very little additional strain from new development without being completely replaced. The Commonwealth of Massachusetts is now requiring storm water run-off to be handled on individual properties in retention ponds and basins, and has imposed tight conditions on sewer expansion in the city to prevent illegal connections and ground water/run-off infiltration into the Charles River.

Recreation

The Waltham Recreation Department currently spends approximately \$28.25 per resident per year to provide recreation programming (sports leagues, summer camps, etc.) in municipal parks and playgrounds. The department would have to spend an additional \$370,000 to maintain existing recreational programs if 5,700 new homes were built By-Right in the city, and an additional \$790,000 if 12,200 new homes were constructed by Special Permit. Population growth will boost demand for new playing fields, parks, playgrounds, community centers and open spaces, worsening the shortfall of such property currently faced by the Recreation Department. With little undeveloped land remaining in Waltham, the ability of the city to acquire new recreation property will be severely limited, particularly if demand rises for land on which to build new homes and businesses. In short, development to Waltham's By-Right or Special Permit capacities will likely consume the few remaining parcels suitable and available for use as new recreational areas.

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Special Topics

Properties in the Riverfront Overlay District

The Riverfront Overlay District straddles the Charles River across portions of Wards Five, Eight, Nine and a small part of Ward Seven, encompassing dense clusters of commercial and industrial properties along River, Calvary, Charles, Felton and Crescent Streets and Rumford Avenue. Running through Waltham's downtown and historic Southside neighborhood, the District encompasses many large manufacturing and commercial facilities, which are well suited for adaptation to mixed residential and commercial use. Continual decline in Waltham's manufacturing base means that the highest and best use of factory and warehouse buildings in the Riverfront Overlay District in the current real estate market is as mixed use space, with multiple stories of apartments over ground floor shops and restaurants. The potential for this type of conversion has already been realized in Waltham in the Cronin's Landing development, as well as in the proposed redevelopment of a bag factory at 78 Rumford Avenue into apartments.

This study examined 353 parcels in the Riverfront Overlay District, which contain 547 homes and over 2,500,000 SF of commercial and industrial uses, as demonstrated below in Table Thirteen and Map Nine. Three hundred twenty-four of these properties are occupied and 29 are vacant. Most of these parcels (67%) are located within Ward Nine, with the remaining properties concentrated in Ward Five. Land uses on these properties tend to be small, averaging 7,200 SF of commercial/industrial space, except in Ward Eight, where the 27 parcels in the District average 28,000 SF in size.

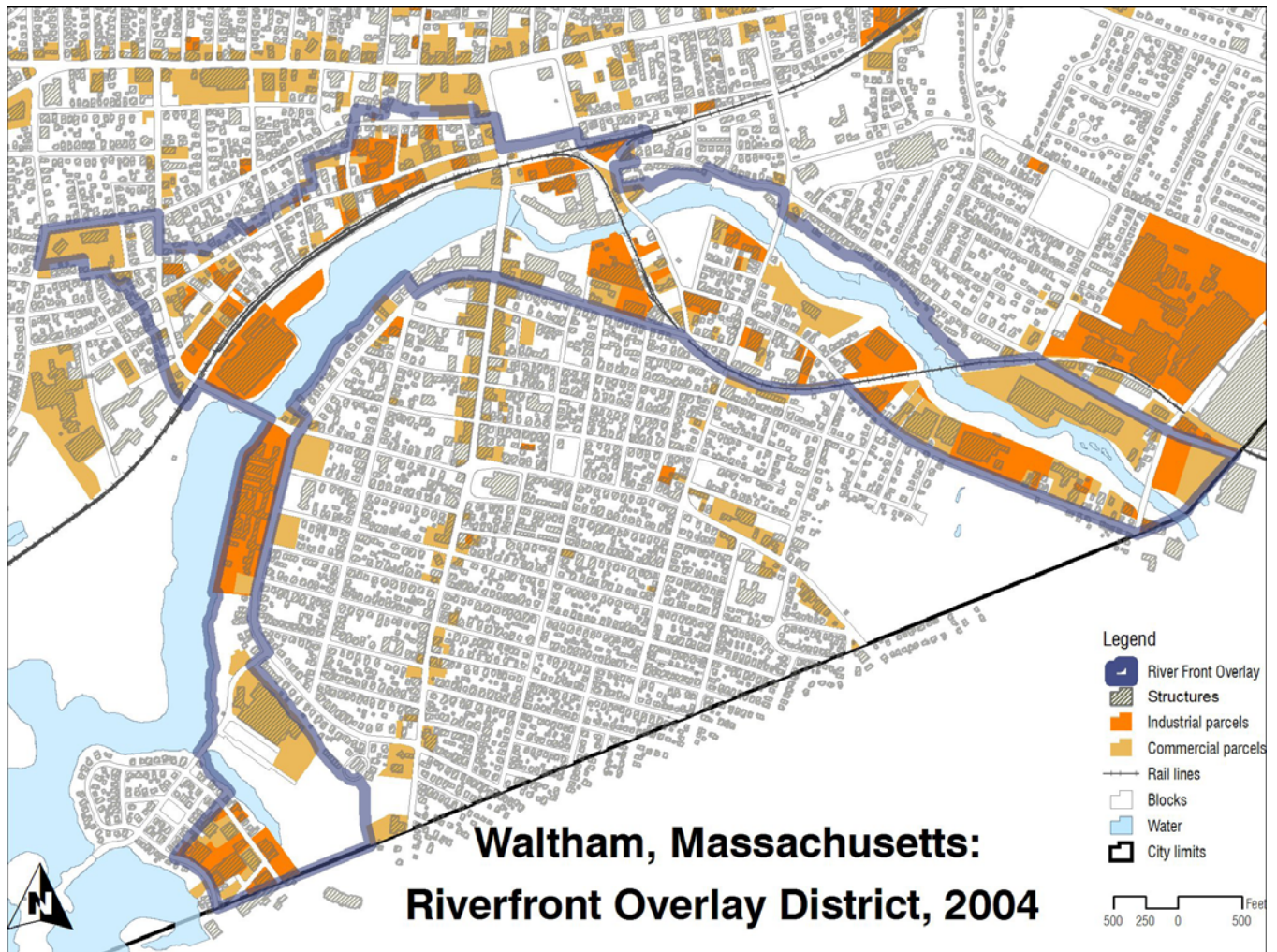
The development potential of properties in the Riverfront Overlay District By-Right is relatively small, totaling 22 new dwellings and nearly 475,000 SF of additional commercial space. In contrast, by Special Permit these parcels can accommodate almost 3,000 new homes, primarily by converting nearly half of their existing commercial/industrial space into residential uses. Vacant parcels in the District can absorb 525 new residences and 113,000 SF of retail space by Special Permit; the remaining capacity of 2,465 new units is derived from adaptation of existing space to residential uses.

Table 13: Parcels in the Riverfront Overlay District - Build-out Summary							
Property type	Number of Parcels	Current Dwelling Units	Current Commercial Space (SF)	Additional Dwelling Units, By-Right	Additional Commercial, By-Right (SF)	Additional Dwelling Units, Sp. Permit	Additional Commercial, Sp. Permit (SF)
Ward Five	88	154	438,894	4	194,773	531	-188,227*
Ward Seven	1	0	7,987	0	0	0	0
Ward Eight	27	19	780,893	25	58,085	677	-446,531*
Ward Nine	237	374	1,320,174	-7*	221,328	1,782	-566,872*
TOTAL	353	547	2,547,948	22	474,186	2,990	-1,201,630

* These figures represent net totals that include properties adding commercial space and others converting existing commercial space into residences in mixed-use developments

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Map Nine



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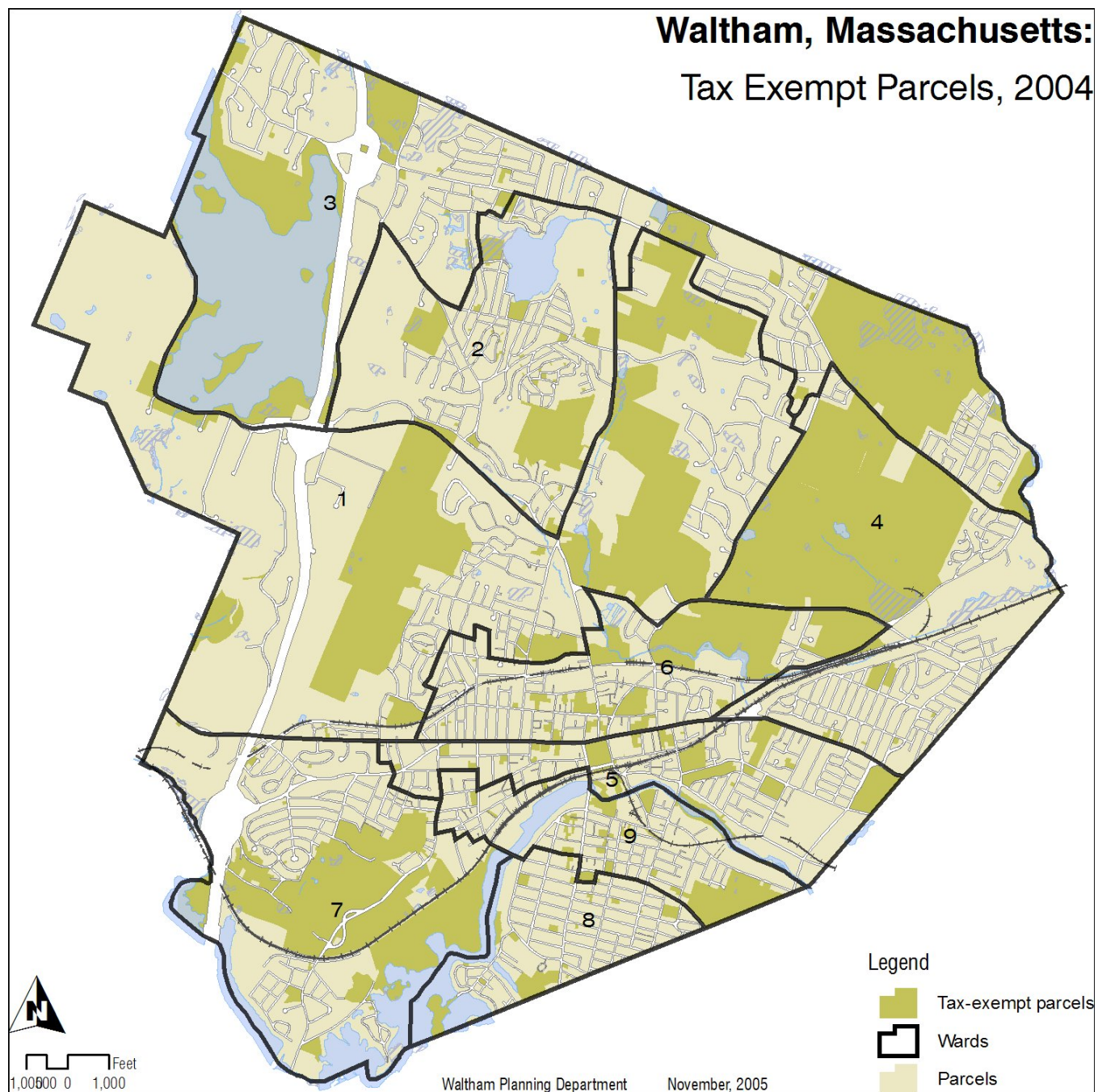
Tax Exempt Properties

Waltham has a large number of properties owned by public entities and private tax-exempt organizations, including government agencies, religious and educational institutions, charities and other non-profit groups. Over 460 such parcels were analyzed, as shown below in Table Fourteen and Map Ten. While these properties are distributed fairly evenly across the city, they range greatly in size from 5,000 SF lots to the 200-acre Fernald School campus. Most of the 700 dwellings on tax-exempt parcels are owned and operated by the Waltham Housing Authority or social service agencies that assist homeless or disabled people. None of these parcels is currently occupied by commercial or industrial uses.

As stated before, this analysis assumes that only 20 (4%) of Waltham's tax-exempt properties will be redeveloped in the near future. While few in number, these parcels have a large capacity for new residential development (1,700 new units By-Right and 3,600 new units by Special Permit), particularly in North Waltham. Fernald has the potential to add 1,225 new town homes By-Right and over 2,740 new units by Special Permit in Ward Four. Other tax-exempt parcels with significant development potential include the Stigmatine Fathers property in Ward Two, which can be redeveloped into 89 single-family homes both By Right and by Special Permit, and the University of Massachusetts' Agricultural Field Station in Ward Six, which can be redeveloped into 150 new multi-family units By-Right and 324 new dwellings by Special Permit. Commercial expansion capacity is limited to the United States Postal Service distribution facility on Smith Street.

Table 14: Tax Exempt Parcels - Build-out Summary							
Property type	Number of Parcels	Current Dwelling Units	Current Commercial Space (SF)	Additional Dwelling Units, By-Right	Additional Commercial, By-Right (SF)	Additional Dwelling Units, Sp. Permit	Additional Commercial, Sp. Permit (SF)
Ward One	51	35	0	0	0	0	0
Ward Two	58	33	0	89	0	89	0
Ward Three	57	14	0	58	14,109	122	510,555
Ward Four	39	20	0	1,390	0	3,013	0
Ward Five	41	301	0	0	0	0	0
Ward Six	41	66	0	189	0	407	0
Ward Seven	107	45	0	40	0	86	0
Ward Eight	26	102	0	0	0	0	0
Ward Nine	42	101	0	0	1,516	0	29,788
TOTAL	462	717	0	1,710	15,625	3,598	540,344

Map Ten



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Industrial properties

Waltham has a long and notable industrial history. Its manufacturing base, in decline since the 1970's, is still significant relative to other communities in the region. This study examined 186 industrial parcels with over 8,600,000 SF of manufacturing space, as detailed below in Table Fifteen and Map Eleven. Nearly two-thirds of this capacity is located along I-95/Route 128 in Ward One and River Street in Ward Five, while 18% of this space is located within the Riverfront Overlay District.

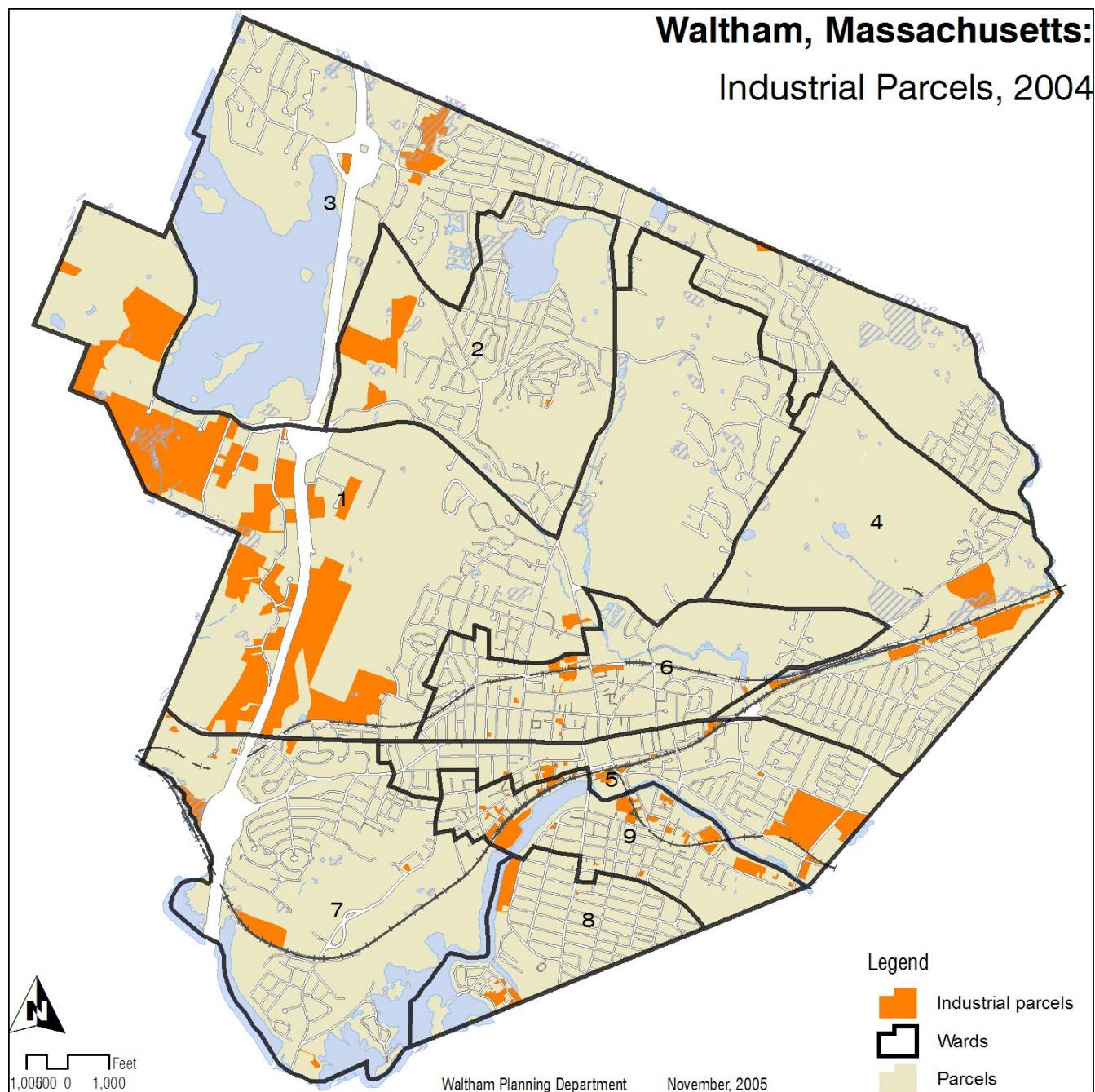
Over the past two decades, industrial activity in the greater Boston area has migrated overseas, to southern states, or to peripheral locations along Route 495 and in Western Massachusetts in search of lower labor and production costs. As a result, the highest and best use of industrial property in Waltham now and in the near future is generally not manufacturing but rather office or research functions inside the Route 128 corridor, and mixed residential and commercial uses in other parts of the city.

The development potential of industrial properties is relatively small By-Right, totaling 33 new dwellings and almost 1,600,000 SF of new commercial space. In contrast, by Special Permit these parcels can accommodate over 3,300 new homes and more than 19,000,000 SF of office/research and commercial space. This development potential is not evenly distributed throughout the city, but is concentrated in the I-95/128/Winter Street corridor (with the potential to accommodate 17,200,000 SF of new commercial space) and along the Charles River in the Riverfront Overlay District (where properties can absorb 1,800 new homes in mixed-use developments).

Property type	Number of Parcels	Current Dwellings (units)	Current Commercial Space (SF)	New Dwellings, By-Right (Units)	New Commercial, By-Right (SF)	New Dwellings, Sp. Permit (Units)	New Commercial, Sp. Permit (SF)
Ward One	59	0	3,873,329	0	1,298,349	0	15,844,501
Ward Two	4	0	450,463	0	26,567	0	296,914
Ward Three	3	0	27,565	0	0	0	23,127
Ward Four	22	0	830,070	16	-13,695*	16	213,621
Ward Five	22	0	1,656,562	0	100,760	248	1,629,886
Ward Six	17	0	324,986	14	-65,696*	36	498,258
Ward Seven	9	0	75,720	0	215,486	0	1,353,901
Ward Eight	13	0	569,444	0	3,031	596	-361,329*
Ward Nine	37	0	821,844	3	31,303	973	-426,234*
TOTAL	186	0	8,629,983	33	1,596,105	1,869	19,072,645
<i>Inside Riverfront Overlay District</i>	<i>56</i>	<i>0</i>	<i>1,578,093</i>	<i>0</i>	<i>149,497</i>	<i>1,812</i>	<i>-934,233</i>

* These figures represent net totals that include properties adding commercial space and others converting existing commercial space into residences in mixed-use developments

Map Eleven



WALTHAM, MASSACHUSETTS - BUILDOUT ANALYSIS, 2006

Vacant Parcels

Waltham has a small number (323) of vacant properties, as shown below in Table Sixteen and Map Twelve. These properties are distributed fairly evenly across the city, and range greatly in size from small 5,000 SF lots to sprawling tracts spanning dozens of acres. Most of these parcels (59%) are residential in character; the remaining parcels are either commercial or industrial in nature.

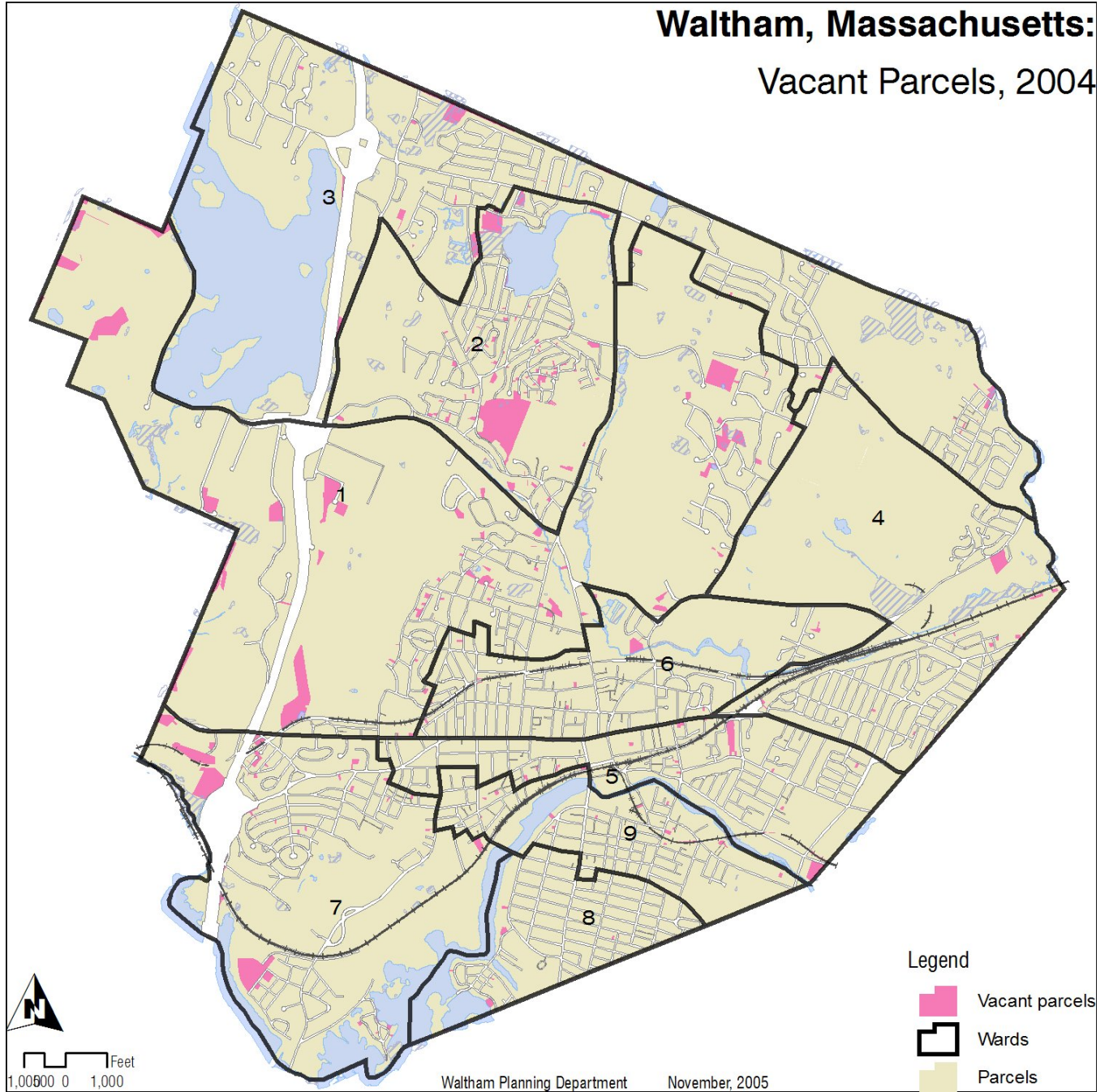
While few in number, Waltham's vacant parcels have a large capacity to accommodate new development both By-Right (910 homes and 1,350,000 SF of commercial uses) and particularly by Special Permit (almost 1,200 homes and 7,600,000 SF of commercial space). These figures include the recent construction of 264 town homes at The Ridge development in Ward Two on formerly vacant commercially-zoned property. Residential development capacity is focused in Wards Two and Five, where large vacant parcels in Commercial and Industrial zones allow for dense residential redevelopment. Similarly, tracts of unused property in Commercial, Limited Commercial and Industrial zones along the I-95/Route 128 corridor allow commercial development capacity to be highly concentrated in Wards One and Seven. Additionally, vacant parcels in the Riverfront Overlay District can accommodate a significant amount of new mixed-use development, totaling 160 new homes and over 110,000 SF of retail space by Special Permit.

Table 16: Vacant Parcels Buildout Summary							
Property type	Number of Parcels	Current Dwelling Units	Current Commercial Space (SF)	Additional Dwelling Units, By-Right	Additional Commercial, By-Right (SF)	Additional Dwelling Units, Sp. Permit (Units)	Additional Commercial, Sp. Permit (SF)
Ward One	68	0	0	123	521,806	164	3,316,182
Ward Two	69	0	0	414*	75,827	414*	184,400
Ward Three	17	0	0	46	19,705	91	33,579
Ward Four	17	0	0	14	67,712	14	118,152
Ward Five	36	0	0	48	118,199	109	555,658
Ward Six	33	0	0	59	16,525	86	432,202
Ward Seven	39	0	0	397**	451,434	397**	2,882,739
Ward Eight	20	0	0	84	23,497	159	41,114
Ward Nine	21	0	0	21	56,948	78	37,282
TOTAL	320	0	0	1,206	1,351,653	1,512	7,601,306
<i>Inside Riverfront Overlay District</i>	<i>29</i>	<i>0</i>	<i>0</i>	<i>29</i>	<i>167,108</i>	<i>160</i>	<i>112,880</i>

* Includes actual construction of 264 multi-family units at The Ridge development

** Includes actual construction of 364 multi-family units at the Longview Place development on the site of the former Waltham Hospital

Map Twelve



WALTHAM, MASSACHUSETTS - BUILDOUT ANALYSIS, 2006

"Small lot" (Grandfathered) Parcels

Waltham has a number of residential parcels, collectively referred to as "small lots" or "grandfathered lots", that are comprised of multiple small sub-parcels that often, under the City's Zoning Ordinances, can legally have additional structures built on them. This study analyzed 311 such properties, as summarized below in Table Seventeen and Map Thirteen. These properties are primarily residential, and contain a total of 894 "sub-parcels" and 471 dwellings. "Small lot" properties are concentrated in Wards Two, Four and Six, and are generally small, averaging slightly over one-quarter acre (12,000 SF). These parcels were primarily created prior to the adoption of zoning, and are often the sites of former summer cottages, particularly in the Hardy Pond area in Ward Two, which was a popular vacation spot in the early twentieth century.

Waltham's "small lot" parcels have substantial capacity to accommodate new development. By-Right, these properties can accommodate 217 new homes; by Special Permit they can absorb a total of 291 new homes, a 62% increase in the number of residences that currently exist on them.

Table 17: "Small Lot" Parcels - Buildout Summary					
Property type	Number of Parcels	Total Lots on Parcels	Current Dwellings on Parcels	Additional Dwelling Units, By-Right	Additional Dwelling Units, Sp. Permit
Ward One	14	31	16	11	11
Ward Two	118	269	173	84	84
Ward Three	34	113	32	47	47
Ward Four	49	118	76	2	2
Ward Five	2	4	1	6	17
Ward Six	87	251	166	67	68
Ward Seven	0	0	0	0	0
Ward Eight	0	0	0	0	0
Ward Nine	7	29	7	0	62
TOTAL	311	815	471	217	291

Map Thirteen

