

# North Reading Municipal Wastewater System Financial Assessment Study

## Technical Memorandum: Analysis of Potential Property Tax Revenue from Net New Residential Growth

To: Kleinfelder  
From: FXM Associates  
Date: June 2022

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This memorandum summarizes FXM Associates' assessment of potential net new tax revenues from multifamily<sup>1</sup> residential growth following implementation of a proposed wastewater system to service properties within the study area. The memorandum reports the assumptions, methods, data sources, analyses and findings of all work accomplished.

### *Assumptions*

The study area has been described in other documents and includes all vacant and other properties that would be served in Phase I of the proposed wastewater system. The wastewater system is assumed to come on-line in 2026. The analytic period for this assessment is the bond repayment schedule of 30 years, i.e., 2026 through 2056. Only net new growth is counted for tax revenue calculations<sup>2</sup>. Tax rate and escalation assumptions have been discussed with the Town Assessor and are further described in the sections below.

*NOTE ON LIMITATIONS OF THE ANALYSIS. The use of the term "potential" used throughout this report is purposely meant to convey that this analysis is not a feasibility study. It does not address, for example, development costs, specific site constraints, or prospective financing of particular potential developments. It can only be applied in the context of long range planning that seeks to consider the possible financial implications of proposed wastewater systems, based on the consultant's interpretation of current and foreseeable market conditions and trends using data cited in the report. It cannot be used as a basis for bond offerings or other financial instruments.*

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<sup>1</sup> As used in this report "multifamily" housing is defined to include rental and condo units in higher density structures. Based on research conducted for this study these types of residential developments are facilitated by wastewater systems. Single family homes are not and are therefore not included in this analysis.

<sup>2</sup> This analysis does not consider potential municipal service costs, which will be based on specific attributes of the actual developments that may occur, nor does it consider non-real property tax revenues such as excise taxes, licenses and fees, and personal property taxes.

## Summary Findings

As shown in the text table below, installation of a wastewater system within the project area could facilitate the addition of about 1,300 new multifamily residential units, \$698.6 million in net new residential property values, and \$10.5 million in net new property taxes.

Summary Findings Potential Financial Impacts of Proposed Wastewater System Multifamily Residential Properties			
Potential Net New Growth (2026-2056)			
Inventory (number of units)		1,302	
Property Values		\$ 698,587,000	
Tax Revenues		\$ 10,479,000	

## Sources and Methods

**Step 1:** In this step, FXM assembled the data to form the basis of the analyses. Key sources of data are:

- The FXM *Housing Demand Model* (HDM) uses Claritas *SPOTLIGHT* reports, a subscription data service of EnvironicsAnalytics. The reports are based on the latest US population and economic census data updated by sources and algorithms proprietary to Claritas. The source provides the number of households by age of householder and income ranges from 2022 estimates projected to 2027. This source also provides the basic demographic information used in the HDM.
- The Warren Group, a real estate and financial information service, provides *Town Stats*, historic data on real estate transactions for Massachusetts and Rhode Island, via Banker and Tradesman.
- CoStar *Property Information Systems*, the most comprehensive real estate market data widely used by industry professionals and developers, is the source for data on current multifamily property values, as well as historic data on inventories, occupancy, and rents in sewerred and non-sewerred communities.

**Step 2:** With the assembled data, FXM prepared alternative growth projections in order to project tax revenue impacts of potential multifamily housing development in North Reading.

First, FXM's proprietary *Housing Demand Model* estimated demand for rental housing<sup>3</sup> within a 30-minute drive time of the center of North Reading, projected over the next five years. The model is designed to capture rental demand by

<sup>3</sup> For the purposes of this analysis rental housing demand could also include condos in multifamily structures.

householder age, a key characteristic of demand, and ability to pay. It uses these data, plus data on mobility and new growth projections within a designated market area to estimate the types of households that might be attracted to the area, along with their estimated ability to pay, based on affordability norms. Although the five-year period of the projections is limited compared to the 30-year time horizon of the current analysis, the model results were used to confirm that there will likely be sufficient demand within the market area to absorb the number of units projected by CoStar to be provided in North Reading at rents reflective of market conditions and householders ability to pay<sup>4</sup>.

A key element of the analysis were historic data on condo sales, number of transactions, and selling prices, from The Warren Group's *Town Stats*. These data permitted the calculation of an average annual per cent change in value (1.3%), which was then applied to the 2022 base year median condo value and projected out for the 2026-2056 period.

CoStar data from 1987 to 2022 were used to examine historic trends in inventory, occupancy, and rents for multifamily units in sewerred and non-sewerred communities within the local market area (LMA)<sup>5</sup>. These trends were used in the calculation of the annual average number of new units that might be absorbed in North Reading. This number of potential new units per year<sup>6</sup>, multiplied by the average values calculated from the Town Stats data, enabled the calculation of annual property values resulting from new multifamily growth. Other CoStar data provided a current picture of assessed values, per unit and per building, in sewerred and non-sewerred communities, permitting a comparison of the values in two types of communities.

**Step 3:** Using the estimate of average annual demand for numbers of units from the CoStar calculations, multiplied by the projected median unit value in 2026 (\$439,111), and then by the average annual change in value (1.3%) yielded the annual values of potential new growth in multifamily units in North Reading. A constant property tax rate of \$0.015 was then applied to those values to yield an annual revenue projection which could be summed to the end of the 30-year period to give the total tax revenue attributable to the new growth in multifamily units.

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<sup>4</sup> See Table 1 on page 5 of this report

<sup>5</sup> Sewered communities within the Local Market Area include Andover, Burlington, North Andover, Reading, Tewksbury, Wilmington, and Woburn. Non-sewerred communities include Lynnfield, Middleton, and North Reading. CoStar defines multifamily housing as structures with 5+ units.

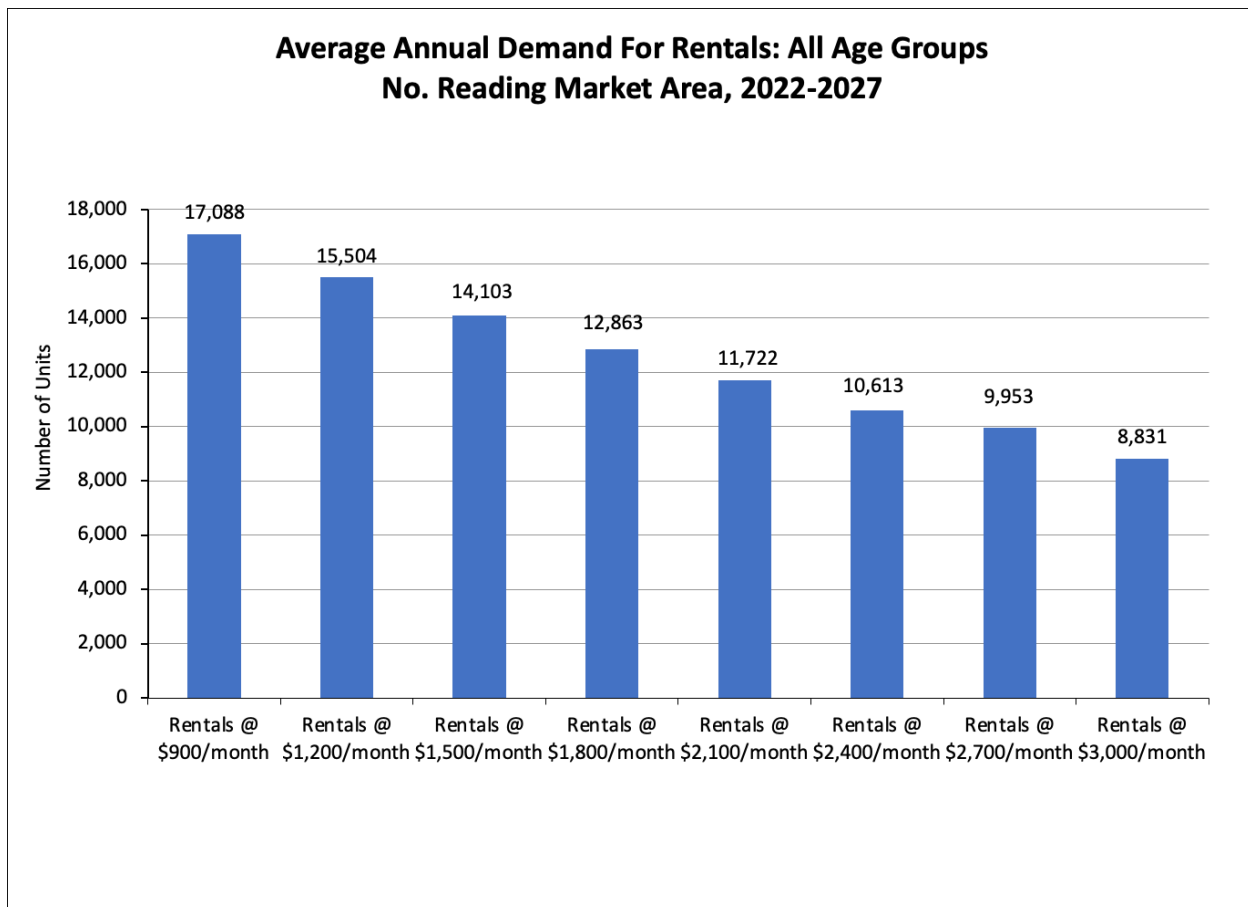
<sup>6</sup> See Table 2 on page 7 of this report.

## Analytic Findings

### *Findings of HDM*

The primary purpose of the HDM in the context of the North Reading analyses is to help establish a projection of demand for rental housing (which would, in turn, lead to demand for multifamily housing development). The following table summarizes the results of the analysis. The market area is defined as the area within a 30-minute drive time radius of the center of North Reading. Figure 1 shows the average annual demand for all rentals by all age groups in the North Reading Market Area, taking into consideration affordability, propensity to move in any given year, and propensity to rent. Note that the figures in the demand bars of Figure 1 are not additive. They are cumulative, with the “Rentals @ \$900” figure representing total estimated average annual demand in both Figure 1 and Table 1, following. Whereas, at rentals of \$2,400 a month, which would not be unreasonable for new units, based on current listings, 10,613 households a year who are projected to move to rental housing within the overall market area could afford to rent in North Reading.

Figure 1



Source: Claritas, *Spotlight Reports*, and FXM Associates, *Housing Demand Model*, 2022

Estimates of how many units North Reading might capture each year from this larger market area are shown in Table 1 below. The table shows the potential for North Reading to capture a share of this total demand in the market area. That estimate is based on North Reading's current share of the rental market in that area (0.4%). The model estimates indicate that there will likely be sufficient demand to absorb the new growth that could come with sewerage the project area. That new growth is further analyzed in the CoStar section below.

Table 1

	<b>Total Average Annual Demand in 30 min Market Area</b>	<b>Total Average Annual Demand in No. Reading @ 0.4%</b>
Rentals @ \$900	17,088	67
Rentals @ \$1,200	15,504	61
Rentals @ \$1,500	14,103	56
Rentals @ \$1,800	12,863	51
Rentals @ \$2,100	11,722	46
Rentals @ \$2,400	10,613	42
Rentals @ \$2,700	9,953	39
Rentals @ \$3,000	8,831	35

Source: Claritas Spotlight Reports, 2022, and FXM Associates

### *Findings of Town Stats analysis*

The Warren Group's Town Stats data are critical to the overall projections. Town Stats is the only readily available source for historic selling prices of condo units<sup>7</sup>. Note that these prices are for both existing and new units. Using data going back to 1987, condo prices have increased at an average rate of 8% per year through 2021. This rate of growth, however, has slowed in recent years. Projecting to 2040 from the same 1987 to 2021 data yields a projected average annual growth rate of 1.3%. For purposes of price projection, this 1.3% average annual growth in prices is used in the analysis through the projection period 2026 to 2056. For 2022 to date, condo prices are averaging \$417,000 per unit, and that figure is used for the base year on which the subsequent projections to 2056 are based. Figure 3 displays the data graphically and Table 3 shows the net new values and tax revenues for each year of the 30-year analysis period.

### *CoStar Analyses*

The CoStar data on inventory of units in both sewerred and non-sewerred communities was key to the calculation of average annual growth rates in multifamily housing production in North Reading. Data cover the years 2000 to 2022. In 2000, the total inventory of North Reading multifamily units was five, rising to 411 in 2008. Over the period 2008 to 2022, the inventory did not change, making projections based on historical data meaningless. Instead, a projected annual increase in units in North Reading was derived by making a projection for the much larger Local Market Area (LMA), which includes all ten communities studied. Currently, North Reading's share of multifamily units in the LMA is 3.3%, which is well below North Reading's share of LMA households at 6.4%. This suggests a significant under-representation of multifamily units in North Reading compared to all LMA communities. With sewer, North Reading's share would be expected to increase to its equivalent share of LMA households. As summarized in Table 2 below, that calculation yielded an average annual increase of 42 multifamily units in North Reading, similar to the HDM estimate of an average annual capture of rental housing demand at current rents of \$2,400 per month, but which is based on longer-term data projected forward, making it a sounder basis for revenue estimates than the 5-year calculation of the HDM. That figure in turn was applied cumulatively to each year between 2026 and 2056, giving a total 1,302 units of potential new growth. Figure 2 shows the cumulative absorption each year graphically.

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<sup>7</sup> Analysis of condo and single-family home prices from *Town Stats* and Zillow, as well as multifamily unit rental rates from CoStar, showed no appreciable difference between sewerred and non-sewerred communities within the LMA. Therefore, and unlike in the case of commercial property, negligible increases in existing residential property values would be anticipated. See Table 4, page 11.

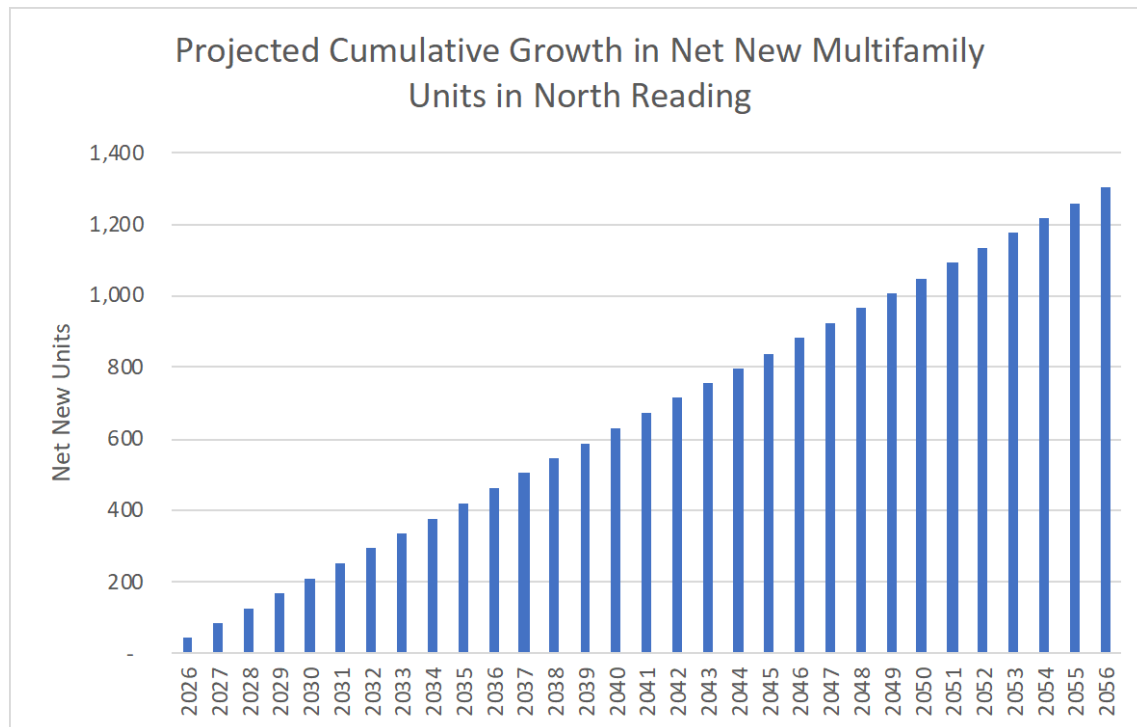
Table 2  
Projected Average Annual New Units with Sewering of  
North Reading

	2022
North Reading Share of LMA Households	6.4%
North Reading Units	1,180
Projected New Units	769
Average Annual New Units	42

Source: CoStar Property Information Systems, 2022, and FXM Associates

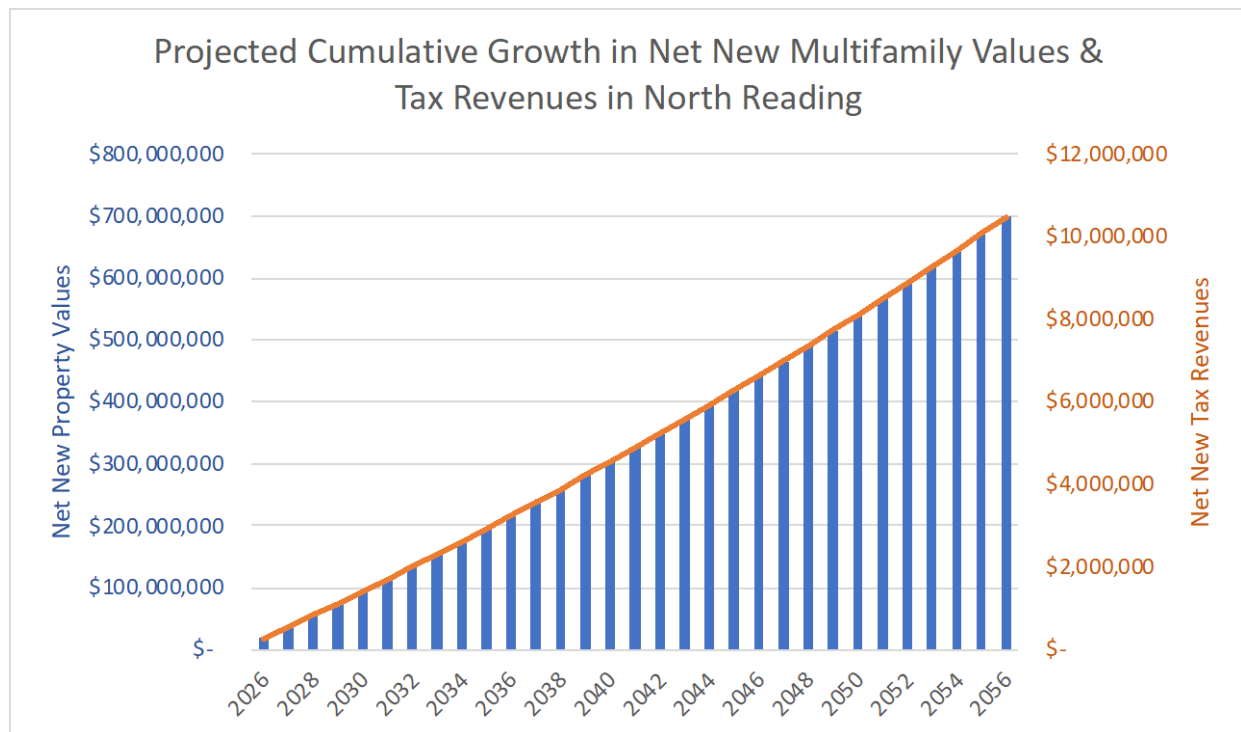
Each year, the number of units was then multiplied by the projected average values to yield a total net new value increase of nearly \$699 million by the end of the period. Applying a constant tax rate of \$15 per thousand to that valuation would provide net new tax revenues of about \$10.5 million over the course of the 30 years. Figure 3 below summarizes these operations, and Table 3 following shows the increases, year by year.

Figure 2



Source: CoStar Property Information Systems, 2022, and FXM Associates

Figure 3



Source: The Warren Group, Town Stats, 2022, North Reading Assessor, and FXM Associates



Table 3

<b>Annual and Total Units, Value and Tax Revenue Increase</b>				
<b>Year</b>		<b>Number of Units</b>	<b>Value</b>	<b>Tax Revenue</b>
2026		42	\$ 18,442,642	\$ 276,640
2027		84	\$ 18,682,396	\$ 280,236
2028		126	\$ 18,925,267	\$ 283,879
2029		168	\$ 19,171,296	\$ 287,569
2030		210	\$ 19,420,522	\$ 291,308
2031		252	\$ 19,672,989	\$ 295,095
2032		294	\$ 19,928,738	\$ 298,931
2033		336	\$ 20,187,812	\$ 302,817
2034		378	\$ 20,450,253	\$ 306,754
2035		420	\$ 20,716,107	\$ 310,742
2036		462	\$ 20,985,416	\$ 314,781
2037		504	\$ 21,258,226	\$ 318,873
2038		546	\$ 21,534,583	\$ 323,019
2039		588	\$ 21,814,533	\$ 327,218
2040		630	\$ 22,098,122	\$ 331,472
2041		672	\$ 22,385,397	\$ 335,781
2042		714	\$ 22,676,407	\$ 340,146
2043		756	\$ 22,971,201	\$ 344,568
2044		798	\$ 23,269,826	\$ 349,047
2045		840	\$ 23,572,334	\$ 353,585
2046		882	\$ 23,878,774	\$ 358,182
2047		924	\$ 24,189,199	\$ 362,838
2048		966	\$ 24,503,658	\$ 367,555
2049		1,008	\$ 24,822,206	\$ 372,333
2050		1,050	\$ 25,144,894	\$ 377,173
2051		1,092	\$ 25,471,778	\$ 382,077
2052		1,134	\$ 25,802,911	\$ 387,044
2053		1,176	\$ 26,138,349	\$ 392,075
2054		1,218	\$ 26,478,147	\$ 397,172
2055		1,260	\$ 26,822,363	\$ 402,335
2056		1,302	\$ 27,171,054	\$ 407,566
Total		1,302	\$ 698,587,402	\$ 10,478,811

As a check on the average annual numbers of new multifamily units, UMass. Donahue Institute projections of households in North Reading over the period 2020 to 2040 were examined and compared to the CoStar-based projections of average annual increases in the supply of multifamily housing. As shown in Table 4 below, the projected growth in multifamily units of 42 per year in North Reading would fit readily within the projected average annual growth in households of 59.

Table 4  
Donahue Institute Projected Households, North  
Reading, 2020-2040

Census 2020	5,665
Projection 2040	6,850
Household Change 2020-2040	1,185
<u>Average annual household change</u>	59

Source: University of Massachusetts Donahue Institute, 2021, and  
FXM Associates

The analysis also compared CoStar data on assessed values of multifamily properties in sewerred and non-sewerred communities to answer the obvious question of whether there is an advantage to value for sewerred properties. As shown in Table 4 below, there is not an obvious answer from these data. The non-sewerred property values shown are higher; however, a major caveat is that there is wide variation in per unit values in current developments. The smaller numbers of units in non-sewerred communities call for caution as well in generalizing from these data. For example, one high-value property in Middleton skews the average per unit value for non-sewerred considerably because of the relatively few units in the group for which assessed value data were available.

Also, many other factors come into play in establishing values, and sewerred alone may not be as strong an influence as, say, individual building and neighborhood characteristics, comparable sales, quality of schools, accessibility, etc. The advantage of sewerred comes, rather, from the ability to accommodate higher density residential development in North Reading which can compete on all value factors.

For these and other reasons, the projected values used in the calculations in the Table 3 calculations above are based on The Warren Group's Town Stats average value for condo unit transactions in 2022.

Table 4

**Average Assessed Values for Multifamily Buildings  
Sewered and Non-sewered Communities**

Community	Total Units	Average Assessed Value per Unit		Average Building Assessed Value	
<i>Sewered</i>					
Andover	1,417	\$	105,819	\$	5,133,221
Burlington	2,373	\$	95,644	\$	14,275,524
North Andover	1,308	\$	139,299	\$	12,362,693
Reading	549	\$	133,916	\$	3,564,648
Tewksbury	1,201	\$	85,585	\$	19,281,233
Wilmington	228	\$	89,468	\$	10,185,369
Woburn	3,108	\$	57,782	\$	5,253,802
total units	10,184				
<i>Non-sewered</i>					
North Reading	411	\$	156,209	\$	33,867,019
Lynnfield	268	\$	148,987	\$	18,144,722
Middleton	13	\$	286,130	\$	678,013
total units	692				

Source: CoStar MultiFam Properties Reports, 2022

## Conclusions

As noted above, multifamily housing's share of North Reading's housing stock is very small, barely 7%. There is, however, some new construction of 450 units for age 55+ at Martin's Landing that is on the market. A sample of listings from Zillow.com indicates that sewered communities are home not only to more units but also to larger developments.

Sewer service would enable North Reading to increase its current share of projected growth in multifamily units in the local market area up to 6.4%, which is North Reading's share of current households in the LMA, compared to its current 3.3% share of multifamily units. The projections in this analysis are for increments of net new multifamily growth that would be more likely with sewer service, since it would allow for the kinds of higher density development that is taking place in neighboring sewered communities. Whether or not such development could be realized depends on many factors. The buildout analysis done for this study shows little potential for development on the town's vacant land, but more possibilities on built land if owners are willing to undertake residential development instead of the existing uses.