

Technical Memorandum

To: Kleinfelder
Town of North Reading

From: FXM Associates

Date: March 29, 2024

RE: Amendment # 2
Additional Analysis for the Proposed Municipal Wastewater System Financial Study
Task 1: Residential New Growth Cost Impacts

Introduction

This memorandum reports FXM's analysis of municipal costs and revenues attributable to potential residential development projected for the period 2026 to 2056. The residential growth scenarios to be assessed are:

- a. Under current zoning conditions resulting in the following number of additional multifamily residential units:
 - i. 1,300 multifamily residential units
 - ii. 1,000 multifamily residential units
 - iii. 500 multifamily residential units
- b. Under new zoning conditions allowing for increased multifamily residential development resulting in the following number of additional multifamily residential units:
 - i. 1,500 multifamily residential units
 - ii. 2,000 multifamily residential units
 - iii. 2,500 multifamily residential units

The analysis of municipal service costs is based on information provided by the Town on historical and projected budgets. FXM used the commonly accepted proportional valuation per household and per pupil average cost techniques applied to the current (2023) number of households in North Reading and pupils in the North Reading school system. These data were extrapolated over the 2026 to 2056 projection period to account for the impacts of the new residential growth scenarios. All new residential growth analyzed is assumed to be multifamily condo or rental units. FXM's 2022 report's assessment of potential property tax revenues attributable to new multifamily units has been revised to reflect updated information on average unit values and historical growth rates.

Town Budget Scenarios

The Town furnished FXM with two scenarios for projected municipal service costs from 2023 to 2043 as shown in Table 1 below. FXM applied the average annual percentage growth in the education and non-education expenditures budgets from 2023 to 2043 to project costs through 2056.

Table 1

Town Budget Scenario (2023-2043)	Average Annual Cost Increase		
	Education	Municipal	Other Fixed
<i>Operating Forecast @ Prop 2.5 Expenditures</i>	2.5%	2.5%	4.5%
<i>Operating Forecast above Prop 2.5 Expenditures</i>	4.1%	3.3%	5.0%

Source: Town of North Reading, February 2024

Baseline (2023) Municipal Service Costs Per Household and Per Pupil

The calculation of per household and per pupil net municipal service costs is shown in Table 2 below.

Table 2

Calculation of Municipal Expenditures, Base Year 2023	
Expenditures	
Total Expenditures	\$ 77,748,863
Attributable to Residential (0.88)	\$ 68,418,999
Schools	\$ 35,474,330
Non-school Expenditures Residential	\$ 32,944,669
Non-tax Revenues	
Total State Aid	\$ 9,904,302
Chapter 70 and Other Schools	\$ 7,357,760
Non-school State Aid	\$ 2,546,542
Local Receipts (non-property taxes)	\$ 4,349,635
Net Expenditures	
Net Non-school Costs Attributable to Residential	\$ 26,876,034
School Costs less State Aid	\$ 28,116,570
Per Household and Per Pupil Costs	
Households	5,607
Pupils	2,354
Net Non-schools Per Household Costs	\$ 4,793
Per Pupil Costs Less State Aid	\$ 11,944

Source: Town of North Reading, December 2023, and FXM Associates

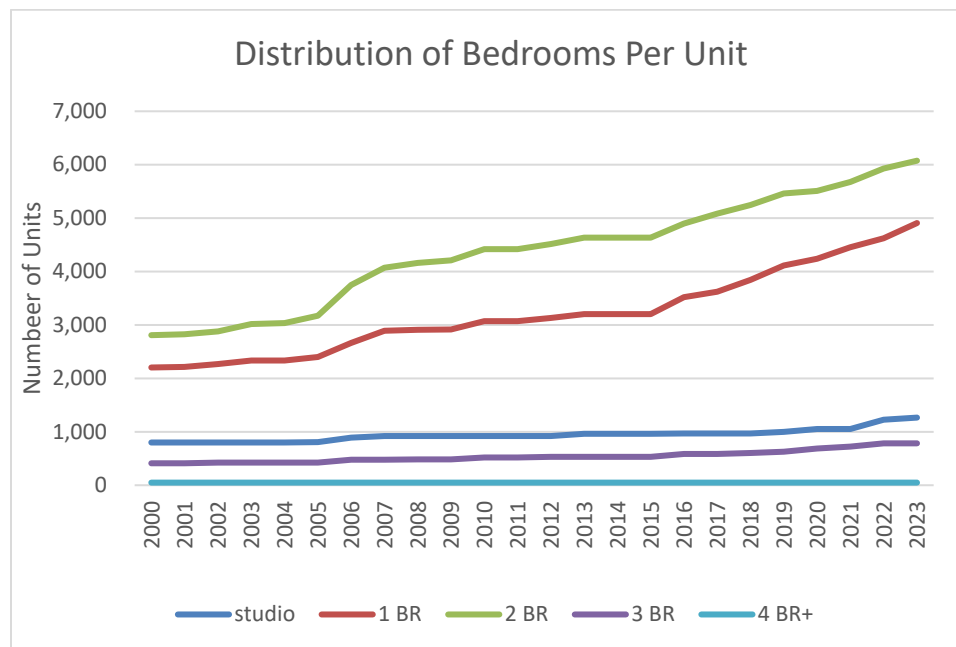
In the proportional valuation method used in this analysis, non-school municipal service costs and non-property and non-school revenues are apportioned based on the relative valuation of residential (0.88) to commercial properties in North Reading. In the table above, attributable net-municipal service costs per household are the total non-education municipal service costs less state aid and local receipts attributable to residential uses (0.88). With annual increases in the number of households, net non-education municipal expenditures per household change each year of the analysis period. Education costs are total expenditures by the schools less state aid for education and increase each year based on the number of units each year and education costs escalation factors. For the purposes of this analysis all school costs are assumed to be attributable to residential uses.

Derivation of School Aged Children

To estimate school aged children expected to be introduced into the North Reading school system, and from which estimates of per unit education costs are derived, FXM first analyzed historic trends in number of bedrooms per multifamily unit within the local market area¹.

Figure 1 shows historical trends in number of bedrooms per multifamily unit and Figure 2 shows the distribution of those bedrooms in 2023 and projected to 2041 (midpoint of analysis period).

Figure 1



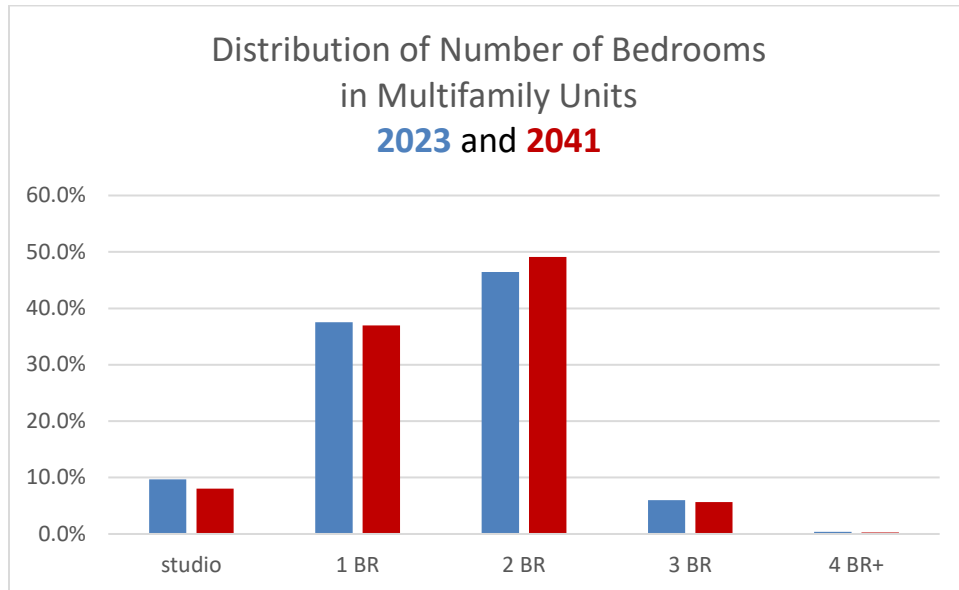
Source: Co Star Property Information Systems Dec 2023, and FXM Associates

As shown by the data in Figure 1, the predominant number of units in multifamily structures within the local market area have 1 or 2 bedrooms with a continuing trend of 1 and 2-bedroom

¹ Andover, Burlington, North Andover, Reading, Tewksbury, Wilmington, Woburn, Lynnfield, Middleton, North Reading. These are the same communities defined as the Local Market Area in the 2022 report. Includes a total of 14,062 multifamily rental units through November, 2023.

units indicated in the historical data. The average number of bedrooms per multifamily unit is 1.5 in 2023 and substantially the same projected to 2041. The analysis therefore uses 1.5 bedrooms for the average of multifamily units analyzed in the current and new zoning projections of education costs.

Figure 2



Source: Co Star Property Information Systems Dec 2023, and FXM Associates

To estimate the average number of school aged children FXM used a widely accepted source, The UMass Dartmouth Public Policy Center Working Paper Series No.2, *The Costs and Hidden Benefits of New Housing Development in Massachusetts*, Goodman et al., February 2016².

FXM analyzed the data in that report, which included estimates of school aged children by number of units in building and number of bedrooms for pre-school to grade 5 and grades 6-12 for housing values (2016) over \$400,000 per unit. The average number of school aged children for the average of 1 and 2-bedroom units is calculated at 0.12 for purposes of this analysis.

This is not to say that individual projects in future years will not have more than 1.5 bedrooms per unit on average.³

² The authors surveyed 257 units in 8 mixed-income projects, ranging from 6 to 86 units, in 8 different communities. See Appendix A. Residential Multipliers, Estimates of the Average Number of School-Age Children per Housing Unit by Type and Housing Value.

³ The average number of school age children in the referenced study for 3-bedroom apartments is 0.33, less than the 0.38 school aged children per household now in North Reading, which is predominantly single-family homes.

Derivation of Annual New Growth Property Tax Revenues

As in the 2022 report, FXM used, per instructions of the Town Assessor, the current average condo sales value in North Reading, as shown in *Banker and Tradesman*, and the current tax rate factor of 0.01399. The tax rate factor is held constant throughout the analysis period, again per instructions of the Town Assessor. The average condo sales value in 2023 is \$515,000. The annual escalation factor for average multifamily unit sales value is 4% and is based on the average annual growth in multifamily rents for the market area communities since 2010.⁴ Absorption of the number of units in each scenario is assumed to be evenly spread over the 30-year analysis period.

Findings

In the following pages, Table 3 provides a comprehensive summary of additional school and municipal expenditures due to (1) residential new growth impacts and annual bond and operating costs attributable to construction of a new municipal sewer system and (2) corresponding residential new growth property tax revenues for each of the Town's budget models identified in Table 1. As data in Table 3 show, cumulative net new residential growth revenues are positive under both current and new zoning scenarios for each of the Town's budget assumptions (see Table 1). The greater the number of units under each projected budget assumption, the greater the cumulative net revenues (2026-2056). The *Operating Forecast @ Proposition 2.5. Expenditures* assumption yields the highest net cumulative revenues because the escalation factor (average annual growth rates 2023-2043 projected to 2056) is lower for school expenditures (2.5%) general government expenditures (2.5%), and other fixed cost expenditures (4.5%) compared with the *Operating Forecast above Proposition 2.5 Expenditures* assumptions shown in Table 1.

Following the summary spreadsheet in Table 3 are graphs of the cumulative net residential new growth revenues 2026-2056 for each of the budget assumptions and number of unit scenarios under current and new zoning. Figure 5 summarizes the overall comparisons by number of units including building permit fees.

Figure 3: Operating forecast At Proposition 2.5 Expenditures, *Cumulative Net Revenues 2026-2056* by Number of Units

Figure 4: Operating Forecast Above Proposition 2.5 Expenditures, *Cumulative Net Revenues 2026-2056* by Number of Units

Figure 5: *Cumulative Net Operating Revenues 2026-2056* by Operating Forecast Expenditures and Number of Units Plus Building Permit Fees

⁴ Source: CoStar *Property Information Systems*, 10 community local market area (see footnote 1). Recent trends in condo prices in North Reading, reported by *Banker and Tradesman*, are too variable to be considered reliable.

Table 3

Summary Findings							
Cumulative (2026-2056) Expenditures and Revenues							
	Number of Units and Zoning Scenarios						
	Current Zoning			New Zoning			
	500 Units	1,000 units	1,300 Units	1,500 units	2,000 units	2,500 units	
Budget Assumptions *							
Operating Forecast @ Proposition 2 1/2 Expenditure Levels							
General Government Expenditures (2.5%)	\$ 2,035,523	\$ 3,871,826	\$ 4,891,966	\$ 5,386,644	\$ 6,880,618	\$ 8,259,387	
Other Fixed Cost Expenditures (4.5%)	\$ 3,582,964	\$ 6,815,258	\$ 8,610,926	\$ 9,481,668	\$ 12,111,387	\$ 14,538,322	
School Expenditures (2.5%)	\$ 1,179,512	\$ 2,359,023	\$ 3,066,731	\$ 3,538,536	\$ 4,718,048	\$ 5,897,559	
Total Expenditures	\$ 6,797,999	\$ 13,046,108	\$ 16,569,623	\$ 18,406,847	\$ 23,710,053	\$ 28,695,269	
Property Tax Revenue	\$ 8,174,027	\$ 15,867,228	\$ 20,675,479	\$ 23,265,730	\$ 31,020,974	\$ 38,776,217	
Net Revenues	\$ 1,376,028	\$ 2,821,120	\$ 4,105,856	\$ 4,858,883	\$ 7,310,921	\$ 10,080,948	
Operating Forecast Above Proposition 2 1/2 Expenditure Levels							
General Government Expenditures (3.3%)	\$ 2,293,523	\$ 4,357,818	\$ 5,502,628	\$ 6,057,243	\$ 7,730,156	\$ 9,271,266	
Other Fixed Cost Expenditures (5.0%)	\$ 3,955,859	\$ 7,516,346	\$ 9,490,909	\$ 10,447,507	\$ 13,332,940	\$ 15,991,039	
School Expenditures (4.1%)	\$ 1,654,014	\$ 3,308,027	\$ 4,300,435	\$ 4,962,041	\$ 6,616,054	\$ 8,270,068	
Total Expenditures	\$ 7,903,396	\$ 15,182,192	\$ 19,293,973	\$ 21,466,791	\$ 27,679,151	\$ 33,532,373	
Property Tax Revenue	\$ 8,174,027	\$ 15,867,228	\$ 20,675,479	\$ 23,265,730	\$ 31,020,974	\$ 38,776,217	
Net Revenues	\$ 270,631	\$ 685,036	\$ 1,381,506	\$ 1,798,939	\$ 3,341,823	\$ 5,243,844	

* () show average annual growth projected by town for 2023-2043 carried through 2056

Source: Town of North Reading, data sources op. cit., and FXM Associates

Building Permit Fees

In addition to the net municipal revenues shown in Table 3, the Town will collect one-time building permit fees. Estimates of these revenues are based on an average of 950 square feet per unit⁵ and \$175 per square foot construction costs⁶, or \$166,250 per unit in this analysis. At \$12 per \$1,000 building permit fee assessment⁷, building permit fees for each unit average \$2,225 dollars in the 2023 base year. Assuming an equal number of units are built out each year, the fee assessment remains the same, and construction costs increase over the 30-year period at the same rate as unit market values, the text table below shows cumulative building permit fees over the 2026-2056 analysis period:

Cumulative (2026-2056) Building Permit Fees					
500 units	\$	2,045,261	1500 units	\$	6,135,784
1000 units	\$	4,090,523	2000 units	\$	8,181,045
1300 units	\$	5,317,679	2500 units	\$	10,226,306

⁵ Source: CoStar average for the one and two-bedroom multifamily units in the market area

⁶ Fixr.com, Houzeo.com, local developers

⁷ Town of North Reading Building Department, February 2024

Figure 3

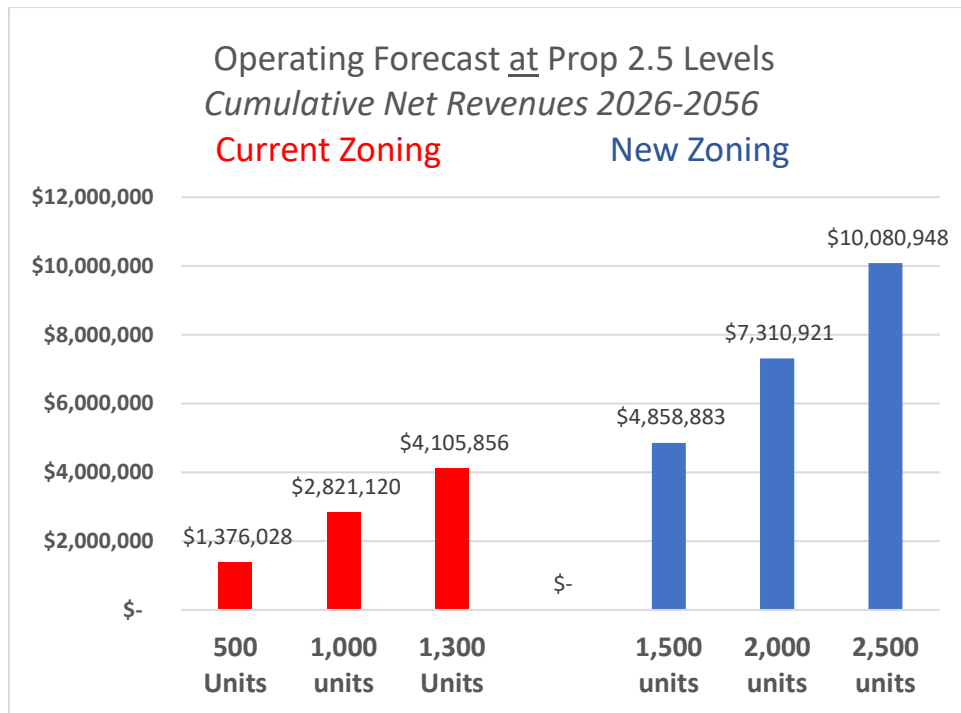


Figure 4

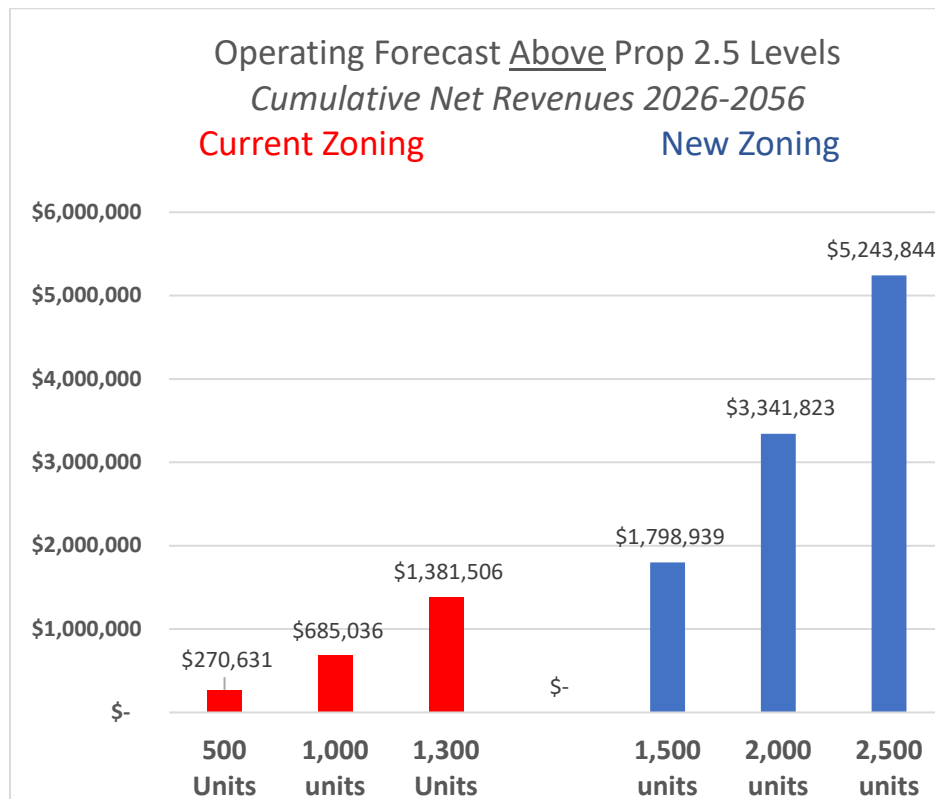


Figure 5

