City of Newton

Inclusionary Zoning:

Financial Feasibility Analysis

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PREPARED FOR:

City of Newton
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EXECUTIVE SUMMARY

Scope of Work

The scope of this analysis is to determine the financial impact resulting from proposed changes to Newton's existing Inclusionary Zoning (IZ) ordinance. RKG Associates Inc. (RKG) constructed a financial feasibility model to test specific scenarios chosen by the City of Newton and determine the relative impact in relation to the proposed IZ ordinance. The importance of this analysis cannot be understated, as setting the appropriate ordinance is key to ensuring the continuation of housing development for households of various income levels across the city.

Process

The process undertaken was collaborative and included engaging City staff and housing developers to understand the market dynamics unique to Newton. RKG utilized information gained from market research and interviews to construct an adaptable financial model. The model enables the City to test prototypical developments to understand the financial implications of changing the inclusionary ordinance.

Summary Findings

The results of the analysis are based upon a financial model driven by assumptions. While exact precision cannot be guaranteed, the model utilizes local-market relevant assumptions to forecast the financial return to a developer and compares the change in financial return between the existing ordinance and the proposed IZ ordinance.

Based on the analysis conducted by RKG, it appears that project size (number of units) matters in relation to the proposed IZ ordinance. The proposed IZ ordinance for small developments, defined as those under six units, seems to have a detrimental impact on the overall project financial feasibility. Most notably, the existing IZ ordinance does not require units or payments in lieu of units for small projects. The addition of an affordable unit has an outsized impact on the overall financial return of the project, as small-scale developers have greater sensitivity to changes in their development program. This increase in sensitivity is due to the inability to spread the cost of an affordable unit (or payment in lieu of a unit) across several market rate units.

For medium sized projects between six and 20 units, the proposed changes to the inclusionary zoning ordinance appear calibrated correctly, as they result in more affordable units for the City and/or cash contributions to the affordable housing fund while returning an acceptable financial outcome to the developer. The ordinance is calibrated correctly because at the proposed 20% commitment of units, the revised income threshold requirements allocate some units be priced for households earning up to 110% of AMI. From the standpoint of building affordable units, the increase in affordable unit requirements is offset by the addition of moderate income household thresholds (110% AMI) in the proposed language.

In large size projects, defined as 20 units and above, the proposed IZ ordinance as designed has a negative impact on the overall financial return in a prototypical development. The key issues within the proposed IZ ordinance is the 25% IZ requirement (10% higher than existing IZ ordinance) as well as the reintroduction of the lowest income tier (50% of AMI) requirement. Without the compensating offset of targeting higher income households, these projects become financially infeasible for the developer compared to the existing ordinance.

The proposed increase in bonus density (two market rate units for every one additional unit committed to affordability) has a positive financial impact on the overall project feasibility, but not at a level great enough to offset the impacts of 25% dedication to affordable units and the high percentage committed at 50% of AMI. Even applying a hypothetical three-to-one ratio still does not yield a positive result for larger projects. The key finding for the bonus density is that as currently structured, it is not sufficient for making these larger projects financially viable.

One possible solution towards improving the bonus density is rather than require all affordable units resulting from utilizing the bonus density to fall within the 50 percent AMI threshold, the units could be allocated across all the AMI thresholds. This spreading of affordable units ultimately helps the development financially because it offsets the units at deeper levels of affordability.

The accompanying analysis of the proposed IZ provides greater context to the summary findings and can help guide the City of Newton to modify elements of the proposal to ensure unintended impacts to the current real estate market do not result.

INTRODUCTION

The City of Newton has undertaken a substantial effort in refining its existing IZ ordinance to better preserve its economically diverse population. This effort was borne through the City's Housing Strategy process, which identified the potential to strengthen the City's existing IZ ordinance to realize the greatest public benefit from private development occurring in the City. In a memorandum dated December 8, 2017, the City's Planning and Development Department outlined a detailed proposal on modifying the Inclusionary Zoning ordinance.

Table 1. Existing IZ Ordinance

Tier Level	6+ Units*	
	Rental	Owner
Tier 1, Up to 50% AMI	7.5%	-
Tier 2, 51% - 80% AMI	7.5%	15.0%
Total	15.0%	15.0%

Source: City of Newton and RKG Associates Inc., 2018
*Ordinance has been interpreted to start at six new units

Among the recommendations included in the memorandum, the four most prominent include [1] requiring inclusionary units for projects of 4 units or larger; [2] offering a payment in lieu of delivering units for fractional requirements; [3] modifying the minimum percentage of units to be income controlled based on the size of the project, and [4] adjusting the income thresholds to be served by the IZ ordinance. The following tables reveal the existing IZ requirements (Table 1) and the proposed IZ requirements (Table 2 and 3).

Table 2 Proposed IZ Ordinance for Rental Developments

Renter Units	Tier 1 Up to 50% AMI	Tier 2 51% - 80% AMI	Tier 3 81% - 110% AMI	Total
4-6 new units	-	15.0%	-	15.0%
7-9 new units	-	15.0%	-	15.0%
10-20 new units	-	10.0%	10.0%	20.0%
21-50 new units	5.0%	10.0%	10.0%	25.0%
51-100 new units	7.5%	10.0%	7.5%	25.0%
101+ new units	10.0%	10.0%	5.0%	25.0%

Source: City of Newton and RKG Associates Inc., 2018

Table 3. Proposed IZ Ordinance for Ownership Developments				
Ownership Units	**Tier 1 Up to 50% AMI**	**Tier 2 51% - 80% AMI**	**Tier 3 81% - 110% AMI**	**Total**
4-6 new units	-	15.0%	-	15.0%
7-9 new units	-	-	15.0%	15.0%
10-20 new units	-	10.0%	10.0%	20.0%
21-50 new units	-	10.0%	15.0%	25.0%
51-100 new units	-	15.0%	10.0%	25.0%
101+ new units	-	15.0%	10.0%	25.0%
Source: City of Newton and RKG Associates Inc., 2018				

As stated by the City's staff, Newton is not alone in considering an adjustment to its IZ ordinance. In the past few years, Boston (2015), Cambridge (2017), and Somerville (2017) have all amended their inclusionary housing provisions to balance the growing need for affordable housing units in a rapidly appreciating and high-demand housing market. Cambridge increased its requirement from 11-13% to 20%; Somerville from 12.5-17.5% to 17.5% for smaller projects and 20% for larger projects; and Boston increased its payment-in-lieu requirements, and its requirement for off-site units from 15% to 18%. Wellesley's requirement has been at 20% since 2004.

RKG was retained by the City to respond to questions from the City Council regarding the financial impact of these ordinance changes on residential development. RKG Associates is a multi-disciplinary real estate, planning, and economic development consulting firm with more than 35 years of experience advising public-sector and private-sector clients on real estate development and financial feasibility. RKG provided similar advisory services to the City of Somerville when it was considering changes to the local Inclusionary Zoning ordinance. Moreover, RKG Associates has worked extensively within Newton, including its recent work on the City's Housing Strategy and the feasibility analysis for the 28 Austin Street project.

The following analysis details the approach RKG used to test the proposed IZ ordinance changes, the results of this analysis, and recommended modifications to the proposed IZ ordinance to minimize financial impacts to future residential development. The appendix section includes a glossary of terms used throughout this analysis.

MODEL

To perform the analysis, RKG Associates created a financial feasibility model based on traditional pro forma analysis standards for real estate development. The model was created in Microsoft Excel to allow for the greatest functional flexibility and analysis transparency.

The RKG Associates model focuses on Internal Rate of Return (IRR) calculations to determine financial feasibility. This measure is a standard approach to understanding the potential performance of a real estate investment. Real estate development is a risk-based venture that requires an investor to guarantee a sum of money in exchange for the potential revenue and value created by that investment. Developers seek to reduce the risk of a project (i.e. development duration and cost overruns) while

maximizing the revenue potential (i.e. rent payments and reversion for a rental project and sales pricing for an ownership project).

IRR calculations are presented as percentages. A higher percent indicates the property will provide a greater return for the investor. IRR is generally compared against an investors desired return rate (or discount rate) to determine if an investment meets the perceived risk level. IRR calculations are much more detailed than overall return calculations, and account for inflation, projected income escalators and the reversion (or sale) of the property at the end of the study period (or hold period). **Boston area development industry minimum standards for a desired IRR currently are 20% for new construction ownership residential and 12% for rental residential projects.**

For analysis purposes, RKG determined the land values under the existing IZ ordinance which would realize the desired financial return under each of the seven scenarios tested and then compared the financial performance of the same projects under the proposed IZ ordinance. The land costs used are not necessarily the market value of land, but rather the value of land which would realize the desired financial return. The methodology was used because ultimately changes in the IZ ordinance would impact the financial returns on projects, and the only way to recover costs from the developer perspective is to pay less for the underlying land. The public benefit that result from inclusionary zoning ultimately comes out of the land cost because other development costs are generally fixed and the developers can negotiate the price of the land.

Not surprisingly, the resulting land values for the selected model developments fell within the expected land value range identified by local developers. These results corroborate that the marketplace has normalized to the existing IZ ordinance. To this point, the analysis provides a realistic assessment of how the proposed changes to the IZ ordinance will impact financial feasibility, and ultimately land values within the City.

Data Collection

Pro forma development modeling, particularly IRR approach modeling, requires substantial market data to generate the model assumptions needed to calculate financial performance. There are three primary data categories needed to run a pro forma model, [1] construction/development data, [2] revenue/expenditure data, and [3] finance/investment data.

- Construction and development data include the costs of land, the costs to develop the structures, and the basic assumptions of types of units, size of units, and unit amenities.

- Revenue and expenditure data includes prevailing rent rates (both market rate and income controlled), prevailing sales prices, and operation costs for rental housing. Operation cost data points include direct operations (i.e. maintenance, marketing) and indirect costs (i.e. real estate taxes).

- Financial and investment data include prevailing lending rates, debt/equity requirements, capitalization rates, and discount rates.

RKG used several tools to gather this information, with a preference to gather locally-relevant information specific to the City of Newton. In areas where local data was not available or not appropriate, RKG relied on regional data (i.e. Boston Metro). The primary data collection method was capturing primary and secondary data about the Newton housing market. RKG gathered current rent rates (per month) and sales prices (by unit type) for owner and renter housing within the City to determine potential revenues. RKG gathered sales data from the City to understand current contract pricing.

RKG also interviewed several for-profit and non-profit residential developers, and commercial lending bank professionals to garner greater understanding of the local marketplace. Finally, RKG used nationally-recognized secondary data sources, such as Marshall & Swift Valuation Services, to verify data provided by the local real estate community. The results of this effort were used to create the baseline market assumptions for the financial feasibility model.

The following section provides details on the results of the data collection, and provides the underlying performance metrics used to test the financial impacts of the proposed IZ ordinance on specific development examples.

Components of the Model

As mentioned, the model functions on a traditional pro forma analysis platform, measuring the potential revenue of a real estate investment and comparing it to the costs and expenditures to construct, operate, and sell the asset. The modeling efforts compared the financial performance of seven distinct residential development scenarios under the existing IZ ordinance against the financial performance of those same scenarios under the proposed IZ ordinance. The seven development scenarios reflect various small, medium and large-scale ownership and rental development projects that may occur within Newton. The results were compared to understand the impact of the proposed IZ ordinance on the financial feasibility of each scenario. The seven development scenarios include:

- Four-unit ownership development
- Four-unit rental development
- Eight-unit ownership development
- 20-unit rental development
- 35-unit ownership development
- 65-unit rental development
- 180-unit rental development

The model has three primary components that drive the financial performance analysis: development assumptions, financial assumptions, and affordability assumptions. Each component influences the revenue and expenditure efficiencies of the development.

- *Development Assumptions* – The development assumptions focus on the 'bricks and mortar' facets of the proposed residential developments. Factors such as total unit count, unit breakout by bedroom count, average unit size by bedroom count, type of parking, cost of land to accommodate the development, and whether the development utilizes the City's bonus density program. These factors influence construction costs, potential operational revenues (for rental housing) and sale values (for ownership housing).

- *Financial Assumptions* – The financial assumptions include factors relating to debt and equity requirements, the cost of development financing (i.e. mortgage rates), inflation and appreciation rates (for operational costs and revenues), and project return expectations. The financial data directly affects the project's financial performance by adjusting the timing and amount of capital outlays (both debt and equity).

- *Affordability Assumptions* – The affordability assumptions include the market performance data such as market rent rates, target income thresholds for the IZ units, assumptions about the size of the Inclusionary units, and the percent requirement of IZ units of the total development. These assumptions further impact potential revenue levels as well as overall construction costs.

The following section details the individual assumptions used to run the model, and how those data points were collected. As mentioned, RKG collected primary and secondary data about residential development in Newton. RKG also performed several interviews with local real estate professionals to verify those findings. That said, the model was constructed to enable the City to customize the pro forma analysis through data overrides. This flexibility in modeling allowed RKG to perform sensitivity analyses about the impacts of changes in the proposed IZ ordinance requirements. This effort informed RKG's findings.

Income Tiers – The City's IZ ordinance is based on creating affordable housing targeted to specific income thresholds. The existing IZ ordinance focuses on 50% of AMI and 80% of AMI (for an average of 65% AMI) for housing affordability. The proposed IZ ordinance adds the 110% of AMI threshold as part of the affordability matrix. Table 4 details the 2017 income thresholds for various household sizes.

Table 4. FY 2017 Income Limits Summary - Newton, MA

	Household Size					
Income Level	**1-Person**	**2-Person**	**3-Person**	**4-Person**	**5-Person**	**6-Person**
50% AMI	$36,200	$41,400	$46,550	$51,700	$55,850	$60,000
60% AMI	$49,680	$55,860	$62,040	$76,020	$72,000	$76,980
80% AMI	$54,750	$62,550	$70,350	$78,150	$84,450	$90,700
100% AMI	$72,400	$82,800	$93,100	$103,400	$111,700	$120,000
110% AMI	$79,640	$91,080	$102,410	$113,740	$122,870	$132,000

Source: City of Newton and RKG, 2018

Rent Thresholds – The model calculates potential gross income by applying the market rate threshold to market rate units, and a rent threshold equivalent to 30% of gross income (utilities included) for income controlled units. The market rate rents were calculated through RKG research of current rent levels for apartments within the City built in the past ten years. Table 5 details the thresholds for each income level.

Table 5. Maximum Affordable Rents (Utilities Included)

Unit Type	Household Size (# of BR + 1)	50% AMI	80% AMI	110% AMI	Non-Affordable Market Rate Unit Rent
1 BR Unit	2	$1,035	$1,564	$2,277	$3,166
2 BR Unit	3	$1,164	$1,759	$2,560	$4,005
3 BR Unit	4	$1,293	$1,954	$2,844	$4,832
Source: City of Newton and RKG Associates Inc., 2018					

Sales Price Thresholds – Like rent thresholds, the sales price thresholds were established by using HUD standards for lending (28% of gross income) with the income thresholds identified in the previous section. As seen in Table 6, purchase income controlled price thresholds are substantially lower than the market rate sales price levels identified by RKG. The market rate data was compiled by averaging recent sales prices of 1, 2, and 3-bedroom ownership units within the City.

Table 6. Maximum Affordable Sales Price

Unit Type	Household Size (# of BR + 1)	50% AMI	80% AMI	110% AMI	Non-Affordable Market Rate Unit Sales Price
1 BR Unit	2	$191,750	$220,000	$308,750	$419,000
2 BR Unit	3	$217,000	$249,000	$348,250	$637,000
3 BR Unit	4	$255,000	$292,000	$400,000	$862,000
Source: City of Newton and RKG Associates Inc., 2018					

DEVELOPMENT REVENUES

Rents

RKG collected rental rate data for relatively new luxury developments which included efficiency (studio), one-bedroom, two-bedroom, and three-bedroom apartments. The market rental rates were used as a baseline for the analysis, and compared to information obtained from developers. Generally, new units rent for an average of nearly $3.25 per square foot. Within the model the rents can be modified by the user. For more information about rental rates, see Appendix 1.

Sales Values

The sales values of housing units were determined through a combination of market research and utilizing the City Assessor database to parse the most recent sales values by bedroom count. The results are used for the baseline assumption in the model. For more information about sales values, see Appendix 1.

Other Income

Income streams outside of traditional rent and sales value stem from parking revenues. For rental units, it was assumed in the model that parking revenues of $150 per space were attainable. No parking revenues are included in ownership units because the parking space is inherently included in the price of the unit.

DEVELOPMENT COSTS

Land Costs

The amount of money a developer can pay for a piece is land is a critical component to the financial feasibility of a project. The higher the land value, the more a developer needs to offset their costs through things like higher density, lower parking rates, or increased sales prices and rents. The price of land is one of the key factors that can affect financial feasibility; and this is especially true for projects on the financial margin. From a cost perspective, the cheaper a developer can obtain the land, the greater the potential financial return. This is because in terms of development, construction and financing costs are relatively fixed. Whereas the price of land and its developable potential can significantly impact the viability of a project.

The price of land in Newton is high, and based on conversations with developers spans a large range based on the underlying zoning and the total number of units which can be developed. An example being that a single-family home can easily sell for $1 million as a tear-down project which is then replaced with two units each selling for $1.3 million. This indicates that developable land is in scarcity in and around Newton.

Developers typically calculate the residual value of the land to determine what they would be willing to pay for the land on a per unit basis. This calculation considers construction costs, financing expenditures, and expected returns. The general approach towards determining the land value is to calculate the income expectations for the developed land, subtract all expenses associated with this development, and the remainder is the land residual. The decision to pursue the project depends on whether the developer can acquire the land at a favorable price.

Within the model RKG created a land value override where the model user can input their own land value assumption. This allows the user to test financial feasibility based on the different land costs, since they may vary significantly based on development size and underlying zoning.

Construction Costs

To determine construction costs, RKG interviewed several developers and utilized the December 2017 Marshall & Swift Valuation Services booklet to build out customized per square foot construction costs for traditional townhouse, stick, and stick over podium construction. RKG assumed that new construction would have either "excellent" or "good" interior or exterior finishes. Construction costs are adjusted by using a local Boston Metro multiplier supplied by Marshall and Swift. The Marshall and Swift numbers are an industry standard, and aligned to what was generally heard through the developer interviews.

Within the model the appropriate construction cost is applied to the development based on its type and average size. Four-unit developments are assigned townhome construction costs, greater than four units but less than 35 are deemed stick construction, and greater than 35 units are classified as stick over podium construction. RKG assumed for this model that all projects would take one year to complete and construction would begin in 2018. Appendix 1 has more detailed information about construction costs.

Parking Costs

Within the model three types of parking costs were included: surface, structured above ground, and underground. The types of parking have dramatically different cost estimates. Surface parking is by far the cheapest option for parking. Typically, this type of parking is done on smaller projects which have sufficient land area to accommodate the parking requirements under zoning. Structured parking occurs in developments that have the land area to build decked parking. While underground parking is by far the most expensive and done in space scarce developments.

The parking calculations are based on the number of parking spaces required for the development scenario based on the total number of residential units. RKG differentiated the parking requirements based on if the project was in a Transit-Oriented Development (TOD) or Non-TOD location. TOD centers around the concept of higher density development taking place around transportation nodes, the type of development envisioned includes residential, commercial, and retail spaces together in single area. Appendix 1 has more detailed information about parking costs.

Financing

Development financing is possibly the most important element of any real estate deal. The ability to secure long-term financing at an affordable rate allows a developer to complete their project. Different types of financing are available depending the scale of the project. For very large projects, financing might be obtained from a national bank, institutional investors, or a debt fund. These types of entities invest capital in projects for investors, and typically provide favorable interest rates given the track records of large scale developers.

Smaller scale developers utilize traditional bank financing as the main source of funding. Local banks typically act as partners with smaller scale developers, and provide funding to projects which meet their lending standards and risk profiles. Lending at the small scale is very much relationship based.

Modeling the financing component of development requires assumptions to be made about the equity, loan terms, and interest rates. As part of the data collection process, RKG interviewed several local developers who provided reality-based data regarding project financing.

EQUITY

The equity investment on the part of the developer which is required to obtain financing is dependent on many factors, some of which include: financial wherewithal, experience, project type, etc. Lenders require developers to contribute funding towards the project. The percentage of equity required is a variable within the model that can have a significant impact on the overall financial return. Typically, if a developer can secure financing which requires a smaller percentage of equity contribution, then the overall project return will be greater because the initial out-of-pocket cost will be less. The benefit to the developer is that they minimize their risk when they do not have to contribute large amounts of equity. For the modeling exercise, the default equity requirement was set at 30% for both owner and rental developments, this value can be changed within the model by the user.

TERMS

The length of the loan is dependent on the type of project under construction. For for-sale units, the loan is repaid once the units have sold. In this case, the loan period might last for 1 or 2 years depending on the time it takes for a project to be constructed and the units sold. For rental projects, the loan term can be variable. Developers have different exit strategies depending on their investment philosophies; some developers will hold a project for 10 years and then sell it, while others just build and hold the property. For the analysis, the model was calibrated to assume as a default that the loan for a for-sale development would be two years, and that for rental properties the loan term would be 20 years.

INTEREST RATES

Financial institutions provide funding based on the viability and potential success of a project, and the interest rates charged are evaluated against the developers financial standing and ability to complete the project. A range of interest rates could be charged to a developer depending on their track record, development program, or equity contribution. The higher the interest rate, the greater the overall cost to the developer. Small fluctuations in interest rates can have large impacts on the project financial return because the cost of debt service can substantially increase, thus rendering a project infeasible. Some developers contribute greater amounts of out-of-pocket equity as a means of lowering the interest rate on the loan. The default model assumptions for interest rates were 6.0% for rental developments and 5.5% for ownership developments. The higher interest rate for rental developments was used because the loan term is longer than that of the ownership developments.

DENSITY BONUS

What is a Density Bonus?

A density bonus is a mechanism allowing a developer to build a greater number of units than the existing underlying zoning dictates in exchange for the creation of additional affordable units. This incentive works well in cases where a community is focused on building more affordable units above

and beyond the required number of units. The density bonus provides a developer with an incentive to create units at deeper levels of affordability, in exchange for the ability to build more market rate units.

Existing Density Bonus

Under the existing IZ ordinance, a bonus density may be granted equal to one new market rate unit for each by-right market rate unit committed to income restriction. The existing IZ ordinance requires 65% AMI for Rental (average of ½ at 50% AMI and ½ at 80%AMI) and 80% AMI for ownership. The density bonus is limited to where lot area per dwelling unit is decreased by up to 25 percent. While the current density bonus exists in the inclusionary zoning ordinance, its usage has historically been limited. The 'one for one' ratio between affordable and market rate units is not enough of a financial incentive to induce developers to utilize the bonus.

Proposed Density Bonus

The proposed density bonus expands upon the existing bonus density by providing a greater number of additional market rate units to the developer for each by-right market rate unit committed to income controls. Under the proposed IZ ordinance, a project that includes more than the required number of inclusionary units in the Tier 1 category (50% AMI) is awarded a bonus of two market rate units, with a limitation on the number of bonus units not exceeding 20% of the number of units otherwise permissible on the lot under lot area per dwelling unit requirements.[1]

The key concept of the density bonus is to entice the developer to build affordable units at deeper levels of affordability, while at the same time offering an incentive for the developer to regain lost value from the creation of the affordable units by supplementing with market rate units. Within the model that RKG produced, it is possible to adjust the density bonus to test the implications on the financial feasibility of the project. Density bonus units tend to have greater importance on smaller projects which, from a financial perspective, may not be viable without the addition of market rate units above underlying zoning.

CASH PAYMENT

As a method to capture the full value of affordable units that do not get built under the inclusionary ordinance, the City proposes to include a cash payment amount for fractional units. The cash payment amount is applied to fractional units which result from applying the appropriate inclusionary percentage across Tier's One, Two, and Three. The proposed IZ ordinance does not round any of the units, rather it prescribes each full unit be built, and any fractional piece be captured by a cash payment.

Under the proposed IZ ordinance, the cash payment as an alternative to each required inclusionary unit, or fraction thereof, is based on a formula that utilizes the current Massachusetts Department of

[1] See City of Newton Planning Memo #109-15(2), December 8, 2017

Housing and Community Development Index for "Total Residential Development Cost Limits" for Production Projects within Metro Boston. This index is updated annually through DHCD's Qualified Action Plan (QAP) and serves as a maximum subsidy amount per unit for affordable housing projects seeking Federal Low-Income Housing Tax Credits (LIHTC) throughout the state. Based on the "Total Residential Development Cost Limits" the value of a unit is set at $389,000. The determination of fractional units is based on the calculations for each of the three tiers in the proposed IZ ordinance.

Table 7 presents an example case of the calculation of the payment-in-lieu across the affordability tiers for a development that has 48 units.

Table 7. Example Payment in-Lieu Calculation for 48 Unit Project

	Tier 1 (50% AMI)	Tier 2 (80% AMI)	Tier 3 (110% AMI)
Inclusionary Percentage	5%	10%	10%
Calculated Units Based on IZ Percentage	2.4	4.8	4.8
Whole Units	2	4	4
Fractional Units	0.4	0.8	0.8
Cash Payment Amount on Fractional	$155,600	$311,200	$311,200
Total Project Units	48		
Inclusionary Units	10		
Market Rate Units	38		
Cash Payment in Lieu	$778,000		
Source: Newton Planning Memo #109-15(2), December 8, 2017			

As part of the modeling process, two additional options were explored regarding the value of the cash payment amount for fractional units. The first option was to use the construction hard costs for developing the affordable unit. The construction hard costs can be defined as the cost of construction for the actual unit, which excludes the price of the land. Utilizing this cost method enables the city to match the cost of building the unit with payment amount requested.

The second approach towards determining the payment amount is to utilize the value gap approach. The value gap is the difference between the value of a market rate unit and that of an affordable unit. The value of a rental unit is determined by the net operating income and the capitalization rate; for an ownership unit, it is determined by the sales value of the unit. In the case of affordable units, the amount of rent or sales value is limited to restricted AMI percentages; resulting in the potential value of a unit having a ceiling. The gap in value negatively impacts the overall financials of a developer because the cost of construction and land to build either an affordable or market rate unit are essentially the same. As part of the modeling process, an option was created to utilize the value gap approach in determining the fee amount to charge for fractional units.

Within the model there is an affordable unit and cash payment calculator which determines both the number of affordable units and potential payments in lieu based under either the existing or proposed

IZ ordinance.[2] The model also calculates the dollar value of the payment in lieu of an affordable unit using either: Total Residential Development Cost Limits ($389,000); construction hard costs, or the value gap approach.

From a financial standpoint, the calculated fee in-lieu payment is added to the initial cost of the development, which ultimately influences the overall financial return. Depending on the project size, a large fee in-lieu could have a detrimental impact. Typically, a small project tends to be more sensitive to greater upfront costs because small dollar amount changes can have an outsized impact as compared to larger projects.

SCENARIO ANALYSIS

Scenarios Under Evaluation

To test the model and the underlying development assumptions, RKG ran seven development scenarios. Table 8 presents the model calibration for each of the seven scenarios. The scenarios were chosen by the City to understand the impact of the IZ changes on prototypical developments. One key difference in terms of development costs is that of parking; in scenarios 35 units or larger the assumption was made that underground parking was the default, resulting in an overall higher development cost.

Table 8. Modeled Scenarios

Scenario	Unit Type	Location	Parking	Number of Units	AMI %	Inclusionary Percentage
1	Ownership	TOD	100% Surface	4	80/110% AMI	15.0%
2	Rental	TOD	100% Surface	4	50/80/110% AMI	15.0%
3	Ownership	TOD	100% Surface	8	80/110% AMI	15.0%
4	Rental	TOD	100% Surface	20	50/80/110% AMI	20.0%
5	Ownership	TOD	100% Underground	35	80/110% AMI	25.0%
6	Rental	TOD	100% Underground	65	50/80/110% AMI	25.0%
7	Rental	TOD	100% Underground	180	50/80/110% AMI	25.0%

Source: City of Newton, and RKG Associates Inc.

The financial analysis conducted by RKG provides key insights regarding the relative impact on development finance resulting from changes in the inclusionary ordinance. RKG modeled each of the seven scenarios by calibrating the model with realistic assumptions. As part of the analysis, RKG modeled financial feasibility under the existing IZ ordinance, as well as under two proposed IZ methods. Under Method One, the conditions for inclusionary housing include the rounding up of fractional units greater than 0.50, and having no fee-in-lieu. Under Method Two, the conditions for inclusionary housing are to build whole units, and charge a fee-in-lieu for any fractional unit. For all

[2] Based calculations of fee-in-lieu on the existing Inclusionary Zoning ordinance and proposed inclusionary zoning ordinance.

scenarios under analysis, RKG used the fee-in-lieu amount of $389,000, which is part of the proposed IZ ordinance, to calculate the payments on fractional units. The data tables for each of the scenarios show the differences between the existing IZ ordinance and both the proposed IZ ordinance methods.

Interpreting Results

The financial model calculates the basic go/ no-go decision a developer must make about a potential project. The decision to pursue a project comes down to overall financial return and risk exposure. If there is confidence that the desired returns will be reached, then the project will be pursued, otherwise the project will not be undertaken.

From a financial perspective, the model calculates outputs that can be helpful when determining whether a developer or a lender will choose to go forward with a project. Of these outputs, both the Internal Rate of Return (IRR) and Net Present Value (NPV) are industry standard financial viability metrics for a given project. While these are important metrics, they are not the sole arbitrators of financial viability, as project risk assessment and developer track record are also important factors. The IRR and NPV when examined together, offer significant insight to both a lender and developer. The IRR is the calculated annual return on investment, taking into consideration net operating income, investment holding period, and sales value. The NPV is the present value of all future cash flows (both revenues and expenditures) for the project based on an expected return rate (discount rate) and over the course of the determined holding period. Based on the size of the initial upfront capital investment in a project, small percentage changes in the IRR can have dramatic effects on the net present value. The decision factor for not pursuing a project is if the IRR does not meet the required rate of return, or if the NPV is below zero. It is possible that a project results in a positive NPV and a lower than desired IRR. In cases such as this, the decision process becomes more nuanced as the developer would have to get comfortable with realizing a lower return. Within the development industry, the standard IRR return for a new construction rental project is 12 percent and 20 percent for new construction ownership units.

As noted earlier, from a development finance standpoint the unknown in a real estate deal is the cost of land. To conduct the comparative analysis, for each of the individual seven scenarios under the existing inclusionary policy the cost of the land was calculated to make the project financially viable and meet the developer's return expectation. This cost of land was then used for each of the two proposed IZ scenarios to understand how the changes in the ordinance impact the overall development return. It should be noted that the calculated land values for each scenario fall within the range of value local developers reported to pay for similar properties, corroborating that land values are normalized to the existing IZ ordinance.

Analysis Limitations

The undertaken analysis is not without limitations. The financial model is based upon assumptions which were collected through developer interviews, market research, and professional judgement. These assumptions are the main drivers of the financial model. The developments that are modeled in this analysis are prototypical developments that could potentially be found in Newton, and not actual developments. While all the assumptions that drive the model can be customizable, RKG

calibrated the model such that the base assumptions are the default. There are countless permutations that can be modeled, but RKG in consultation with the City, chose to model prototypical developments with relatively standardized inputs.

The model is not able to test every variable or possibility, rather it can be used as a ordinance tool to help inform the decision-making process. The model output helps show the relative impact of ordinance changes on development financial feasibility.

Four-Unit Ownership Development

The four-unit ownership development scenario offers a baseline assessment of how the proposed IZ ordinance impacts the existing development landscape. Under the existing IZ ordinance, inclusionary zoning does not get triggered until six units (the ordinance calls for inclusionary units once there are four net new units above the number of units allowed by-right (two units are allowed by-right)). In the case of the four-unit ownership development under the existing IZ ordinance, no inclusionary units are required. The existing IZ ordinance results were calibrated to determine the land value which would result in a 20% return to the developer. The land values used for this scenario were $189,936 per unit, and this value was held constant for each of the proposed scenarios to understand the relative changes inclusionary units and payments-in-lieu would have on financial returns. Table 9 below provides detailed information about each model run for the scenario.

Under Method One, three market rate units and one affordable unit at 80% AMI would be required. As seen in the table, the impact to the developer of having to provide the affordable unit is significant and results in a negative NPV of $316,882. A negative NPV occurs because the financial investment needed to undertake the project is greater than the cash flow generated; this outcome illustrates the investment does not make financial sense from the prospective of the developer. The reason the NPV is negative under Method One is because of the value gap between delivering a market rate unit versus an affordable unit. The value gap is due to the sales value of an affordable unit being capped at a level which is affordable to an 80% AMI household. From the developer's standpoint, the inability to realize full value from the affordable unit, which has a similar cost to that of a market unit, results in a financial loss. Under Method One, the IRR is negative 30.5 percent, which is well below the standard return of 20 percent on ownership developments.

Method Two results in a negative NPV of $233,415 and a negative IRR of 8.4 percent, indicating the project is not financially viable. Under this scenario, four market rate units would be built, and a fee-in-lieu of $233,400 would be paid to the City for the fractional unit. In this instance, the fee-in-lieu payment results in the project becoming infeasible; this is the only difference between the existing IZ ordinance and Method Two. Compared to Method One, the return to the developer while negative, is better under Method Two because the fee-in-lieu amount is less than the value gap loss under Method One.

Based on the calibrations of the model and development scenario, both Method One and Two result in the project becoming uneconomic as compared to the financial results under the existing IZ ordinance.

Table 9. Four-Unit Ownership Development					
	Existing IZ Ordinance	Method One: Proposed IZ Ordinance (Round and Build Unit)	Method Two: Proposed IZ Ordinance (Build Unit and Fee-in-lieu)	Existing IZ vs Method One	Existing IZ vs Method Two
Location	TOD	TOD	TOD		
Unit Type	Owner	Owner	Owner		
Number of Units	4	4	4		
Parking	Surface	Surface	Surface		
Special Permit	Yes	Yes	Yes		
Inclusionary %	15%	15%	15%		
Inclusionary Treatment	Build Affordable Unit	Round and Build Units	Build Units and Pay Fractional		
Inclusionary Units	0	1	0	1	0
Payment in Lieu	$0	$0	$233,400	$0	$233,400
AMI Split	80% AMI	80% AMI	80% AMI		
All Costs	$2,455,107	$2,455,107	$2,455,107		
Land Cost	$759,743	$759,743	$759,743		
Land Cost Per Unit	$189,936	$189,936	$189,936		
Average Cost Per Unit (Inclusive of Land)	$613,777	$613,777	$613,777		
IRR	**20.0%**	**-30.5%**	**-8.4%**	**-50.4%**	**-28.4%**
NPV	**($15)**	**($316,882)**	**($233,415)**	**($316,867)**	**($233,400)**

Four-Unit Rental Development

The four-unit rental development scenario offers a baseline assessment of how the proposed IZ ordinance impacts the existing development landscape. Under the existing IZ ordiance, the affordable units average 65% AMI, based on ½ the units being delivered for households earning 50% AMI and ½ the units at 80% AMI. The existing ordinance does not get triggered until six units (the ordinance calls for inclusionary units once there are four net new units above the number of units allowed by-right (two units are allowed by-right)). So, in the case of the four-unit rental development under the existing IZ, no inclusionary units are required. The existing inclusionary ordinance results were calibrated to determine the land value which would result in a 12% return to the developer. The land values used for this scenario were $210,260 per unit, and this value was held constant for each of the proposed scenarios to understand the relative changes inclusionary units and payments-in-lieu would have on financial returns. Table 10 provides detailed information about each model run for the scenario.

Under Method One three market rate units and one affordable unit at 80% AMI would be required. As seen in the table, the impact to the developer of having to provide the affordable unit is significant and results in a negative NPV of $154,826. The reason the NPV is negative under Method One is because of the value gap between delivering a market rate unit versus an affordable unit. From the developer's standpoint, the inability to realize full value from the affordable unit, which has a similar cost to that of a market unit, results in a financial loss. Under Method One, the IRR is 9.5 percent, which is well below the standard return of 12 percent on new rental developments.

Method Two results in a negative NPV of $231,702 and an IRR of 9.0 percent, indicating the project is not financially viable. Under this scenario, four market rate units would be built, and a fee-in-lieu of $233,400 would be paid to the City for the fractional unit. In this instance, the fee-in-lieu payment results in the project becoming infeasible. Compared to Method One, the return to the developer under Method Two is worse because the fee-in-lieu amount is a greater than the value gap loss from providing the affordable unit under Method One.

Based on the calibrations of the model and development scenario, both Method One and Two result in the project being uneconomic as compared to the financial results under the existing IZ ordinance.

Table 10. Four-Unit Rental Development					
	Existing IZ Ordinance	Method One: Proposed IZ Ordinance (Round and Build Unit)	Method Two: Proposed IZ Ordinance (Build Unit and Fee-in-lieu)	Existing IZ vs Method One	Existing IZ vs Method Two
Location	TOD	TOD	TOD		
Unit Type	Rental	Rental	Rental		
Number of Units	4	4	4		
Parking	Surface	Surface	Surface		
Special Permit	Yes	Yes	Yes		
Inclusionary %	15%	15%	15%		
Inclusionary Treatment	Build Affordable Unit	Round and Build Units	Build Units and Pay Fractional		
Inclusionary Units	0	1	0	1	0
Payment in Lieu	$0	$0	$233,400	$0	$233,400
AMI Split	65% AMI	80% AMI	80% AMI		
All Costs	$1,887,797	$1,849,454	$1,887,797		
Land Cost	$841,040	$841,040	$841,040		
Land Cost Per Unit	$210,260	$210,260	$210,260		
Average Cost Per Unit (Inclusive of Land)	$471,949	$462,364	$471,949		
IRR	**12.0%**	**9.5%**	**9.0%**	**-2.6%**	**-3.0%**
NPV	**$1,698**	**($154,826)**	**($231,702)**	**($156,524)**	**($233,400)**

Eight-Unit Ownership Development

The eight-unit ownership development under the existing IZ ordinance results in one affordable unit built at 80% AMI and seven market rate units. Using the residual land value calculation, the land value per unit which would result in a 20% return would be $294,688. Since this is a hypothetical development with a financial return set to 20%, the land value per unit tends to be much higher than what would normally sell in the market. If the developer could obtain the land at a lower cost ultimately their return on investment would be much higher, but for the sake of the modeling exercise we are assuming a conservative rate of return.

Under Method One, the developer would build seven market rate units and one affordable unit at 110% AMI. The NPV of the project would be a positive $81,530 and the IRR would be 26.7 percent. The financial return is greater than the industry standard return of 20 percent because of the inclusion of the additional value generated by the 110% AMI unit over the 80% AMI unit that would have been built under the existing IZ ordinance.

Under Method Two, seven market rate units, one affordable unit at 110% AMI, and a fee-in-lieu of $77,800 would be paid to the City for the fractional unit. The NPV of the project is a positive $3,730 and the IRR is 20.3 percent. While overall financially positive, the fee-in-lieu decreases the financial return as compared to Method One.

Based on the calibrations of the model and development scenario, both Method One and Two result in a better financial outcome for the developer when compared to the existing IZ ordinance. Under the proposed IZ ordinance, the requirement to build a 110% AMI unit versus an 80% AMI unit which helps the developer financially.

Table 11. Eight-Unit Ownership Development					
	Existing IZ Ordinance	Method One: Proposed IZ Ordinance (Round and Build Unit)	Method Two: Proposed IZ Ordinance (Build Unit and Fee-in-lieu)	Existing IZ vs Method One	Existing IZ vs Method Two
Location	TOD	TOD	TOD		
Unit Type	Owner	Owner	Owner		
Number of Units	8	8	8		
Parking	Surface	Surface	Surface		
Special Permit	Yes	Yes	Yes		
Inclusionary %	15%	15%	15%		
Inclusionary Treatment	Build Affordable Unit	Round and Build Units	Build Units and Pay Fractional		
Inclusionary Units	1	1	1	0	0
Payment in Lieu	$0	$0	$77,800	$0	$77,800
AMI Split	80% AMI	110% AMI	110% AMI		
All Costs	$4,765,353	$4,765,353	$4,765,353		
Land Cost	$2,357,507	$2,357,507	$2,357,507		
Land Cost Per Unit	$294,688	$294,688	$294,688		
Average Cost Per Unit (Inclusive of Land)	$595,669	$595,669	$595,669		
IRR	**20.0%**	**26.7%**	**20.3%**	**6.6%**	**0.3%**
NPV	**$476**	**$81,530**	**$3,730**	**$81,054**	**$3,254**

20-Unit Rental Development

The 20-unit rental development under the existing IZ ordinance results in three affordable units built at an average of 65% AMI and 17 market rate units. Using the residual land value calculation, the land value per unit which would result in a 12% return would be $192,567 and this value was held constant for each of the proposed scenarios to understand the changes in inclusionary units and payments-in-lieu have on financial returns. Table 12 below provides detailed information about each model run for the scenario.

Under Method One, the developer would build 16 market rate units and four affordable units (two at 80% AMI, and two at 110% AMI). The NPV of the project would be a positive $54,251 and the IRR would be 12.2 percent. The financial return is greater than the industry standard return of 12 percent because of the inclusion of the additional value generated by the 80% and 110% AMI units over the 65% AMI units that would have been built under the existing IZ ordinance.

The analysis conducted under Method Two does not yield a different result than Method One because based on a 20-unit development, the math works out such that exactly four units are required and no fractional remainders exist.

Based on the calibrations of the model and development scenario, both Method One and Two result in a better financial outcome for the developer when compared to the existing IZ ordinance. Under the proposed IZ ordinance, the requirement to build 80% and 110% AMI units versus just 80% AMI units which helps the developer financially.

Table 12. 20-Unit Rental Development					
	Existing IZ Ordinance	Method One: Proposed IZ Ordinance (Round and Build Unit)	Method Two: Proposed IZ Ordinance (Build Unit and Fee-in-lieu)	Existing IZ vs Method One	Existing IZ vs Method Two
Location	TOD	TOD	TOD		
Unit Type	Rental	Rental	Rental		
Number of Units	20	20	20		
Parking	Surface	Surface	Surface		
Special Permit	Yes	Yes	Yes		
Inclusionary %	15%	20%	20%		
Inclusionary Treatment	Build Affordable Unit	Round and Build Units	Build Units and Pay Fractional		
Inclusionary Units	3	4	4	1	1
Payment in Lieu	$0	$0	$0	$0	$0
AMI Split	65% AMI	80/110% AMI	80/110% AMI		
All Costs	$8,614,029	$8,548,958	$8,548,958		
Land Cost	$3,851,349	$3,851,349	$3,851,349		
Land Cost Per Unit	$192,567	$192,567	$192,567		
Average Cost Per Unit (Inclusive of Land)	$430,701	$427,448	$427,448		
IRR	**12.0%**	**12.2%**	**12.2%**	**0.2%**	**0.2%**
NPV	**$793**	**$54,251**	**$54,251**	**$53,457**	**$53,457**

35-Unit Ownership Development

The 35-unit ownership development under the existing IZ ordinance results in five affordable units built at 80% AMI and 30 market rate units. Using the residual land value calculation, the land value per unit which would result in a 20% return would be $228,185. Since this is a hypothetical development with a financial return set to 20%, the land value per unit tends to be much higher than what land would normally sell for in the market. If the developer could obtain the land at a lower cost ultimately their return on investment would be much higher, but for the sake of the modeling exercise we are assuming a conservative rate of return.

Under Method One, the developer would build 26 market rate units and nine affordable units (four at 80% AMI, and five at 110% AMI). The NPV of the project would be a negative $739,011 and the IRR would be 5.4 percent. The financial return under Method One is lower than the existing IZ ordinance because an additional four units of affordable housing is required. Even though all the affordable units are restricted to an AMI threshold that is higher than the existing IZ ordinance, the value gap of each affordable unit continues to erode the financial return to the developer. Even with the inclusion of units at 110% AMI, that still is not enough to overcome the value loss.

Under Method Two, the developer would build 27 market rate units and eight affordable units (three at 80% AMI, and five at 110% AMI), and a fee-in-lieu of $291,750 which would be paid to the City for the fractional unit. The NPV of the project would be a negative $773,917 and the IRR would be 5.5 percent. The financial return under Method Two is lower than the existing IZ ordinance because an additional three units of affordable housing is required plus the fee-in-lieu payment. Even though all the affordable units would be built at an AMI threshold which is higher than the existing IZ ordinance, the value gap of each affordable unit continues to erode the financial return to the developer, and thus makes it uneconomic.

Based on the calibrations of the model and development scenario, both Method One and Two result in a financial return which is less than the 20 percent minimum return. This indicates that the proposed IZ ordinance is more onerous than the existing IZ ordinance. The increased number of affordable units under the proposed IZ ordinance makes the project uneconomic.

Table 13. 35-Unit Ownership Development					
	Existing IZ Ordinance	Method One: Proposed IZ Ordinance (Round and Build Unit)	Method Two: Proposed IZ Ordinance (Build Unit and Fee-in-lieu)	Existing IZ vs Method One	Existing IZ vs Method Two
Location	TOD	TOD	TOD		
Unit Type	Owner	Owner	Owner		
Number of Units	35	35	35		
Parking	Underground	Underground	Underground		
Special Permit	Yes	Yes	Yes		
Inclusionary %	15%	25%	25%		
Inclusionary Treatment	Build Affordable Unit	Round and Build Units	Build Units and Pay Fractional		
Inclusionary Units	5	9	8	4	3
Payment in Lieu	$0	$0	$291,750	$0	$291,750
AMI Split	80% AMI	80/110 AMI	80/110 AMI		
All Costs	$20,088,853	$19,810,415	$19,875,486		
Land Cost	$7,986,484	$7,986,484	$7,986,484		
Land Cost Per Unit	$228,185	$228,185	$228,185		
Average Cost Per Unit (Inclusive of Land)	$573,967	$566,012	$567,871		
IRR	**20.0%**	**5.4%**	**5.5%**	**-14.6%**	**-14.5%**
NPV	**$690**	**($739,011)**	**($773,917)**	**($739,701)**	**($774,608)**

65 Unit Rental Development

The 65-unit rental development under the existing IZ ordinance results in 10 affordable units built at an average of 65% AMI and 55 market rate units. Using the residual land value calculation, the land value per unit which would result in a 12% return would be $110,699.

Under Method One, the developer would build 48 market rate units and 17 affordable units (five at 50% AMI, seven at 80% AMI, and five at 110% AMI). The NPV of the project would be a negative $856,242 and the IRR would be 11.1 percent. The financial return under Method One is lower than the existing IZ ordinance because an additional seven units of affordable housing is required. Even though the affordable units are allocated amongst multiple AMI thresholds, the value gap of each affordable unit continues to erode the financial return to the developer. Even with the inclusion of units at 110% AMI, that still is not enough to overcome the value loss because the cost of developing an affordable unit is essentially equal to that of a market rate unit.

Under Method Two, 51 market rate units, 14 affordable units (four at 50% AMI, six at 80% AMI, and four at 110% AMI), and a fee-in-lieu of $875,250 would be paid to the City for the fractional units. The NPV of the project would be a negative $1,216,502 and the IRR would be 10.8 percent. Again, the financial return under Method Two is lower than the existing IZ ordinance because of the four extra affordable units coupled with the fee-in-lieu payment.

Based on the calibrations of the model and development scenario, both Method One and Two result in a financial return which is less than the 12 percent minimum return. This indicates that the proposed IZ ordinance is more onerous than the existing IZ ordinance. The increased number of affordable units under the proposed IZ ordinance makes the project uneconomic in this scenario.

Table 14. 65-Unit Rental Development					
	Existing IZ Ordinance	Method One: Proposed IZ Ordinance (Round and Build Unit)	Method Two: Proposed IZ Ordinance (Build Unit and Fee-in-lieu)	Existing IZ vs Method One	Existing IZ vs Method Two
Location	TOD	TOD	TOD		
Unit Type	Rental	Rental	Rental		
Number of Units	65	65	65		
Parking	Underground	Underground	Underground		
Special Permit	Yes	Yes	Yes		
Inclusionary %	15%	25%	25%		
Inclusionary Treatment	Build Affordable Unit	Round and Build Units	Build Units and Pay Fractional		
Inclusionary Units	10	17	14	7	4
Payment in Lieu	$0	$0	$875,250	$0	$875,250
AMI Split	65% AMI	50/80/110% AMI	50/80/110% AMI		
All Costs	$27,843,738	$27,448,530	$27,616,564		
Land Cost	$7,195,416	$7,195,416	$7,195,416		
Land Cost Per Unit	$110,699	$110,699	$110,699		
Average Cost Per Unit (Inclusive of Land)	$428,365	$422,285	$424,870		
IRR	**12.0%**	**11.1%**	**10.8%**	**-0.9%**	**-1.2%**
NPV	**$525**	**($856,242)**	**($1,216,502)**	**($856,766)**	**($1,217,027)**

180-Unit Rental Development

The 180-unit rental development under the existing IZ ordinance results in 27 affordable units built at an average of 65% AMI and 153 market rate units. Using the residual land value calculation, the land value per unit which would result in a 12% return would be $111,664.

Under Method One, the developer would build in 135 market rate units and 45 affordable units (18 at 50% AMI, 18 at 80% AMI, and nine at 110% AMI). The NPV of the project would be a negative $2,801,086 and the IRR would be 10.9 percent. The financial return under Method One is lower than the existing IZ ordinance because an additional 18 units of affordable housing that is required. Even though the affordable units are allocated amongst multiple AMI thresholds, the value gap for each affordable unit continues to erode the financial return to the developer. Even with the inclusion of units at 110% AMI, that still is not enough to overcome the value loss because the cost of developing an affordable unit is essentially equal to that of a market rate unit.

The analysis conducted under Method Two does not yield a different result than Method One because based on a 180-unit development, the math works out such that exactly 45 affordable units are required and no fractional remainders exist.

Based on the calibrations of the model and development scenario, both Method One and Two result in a financial return which is less than the 12 percent minimum return. This indicates that the proposed IZ ordinance is more onerous than the existing IZ ordinance. The increased number of affordable units under the proposed IZ ordinance makes the project uneconomic in this scenario.

Table 15. 180-Unit Rental Development					
	Existing IZ Ordinance	Method One: Proposed IZ Ordinance (Round and Build Unit)	Method Two: Proposed IZ Ordinance (Build Unit and Fee-in-lieu)	Existing IZ vs Method One	Existing IZ vs Method Two
Location	TOD	TOD	TOD		
Unit Type	Rental	Rental	Rental		
Number of Units	180	180	180		
Parking	Underground	Underground	Underground		
Special Permit	Yes	Yes	Yes		
Inclusionary %	15%	25%	25%		
Inclusionary Treatment	Build Affordable Unit	Round and Build Units	Build Units and Pay Fractional		
Inclusionary Units	27	45	45	18	18
Payment in Lieu	$0	$0	$0	$0	$0
AMI Split	65% AMI	50/80/110% AMI	50/80/110% AMI		
All Costs	$77,066,664	$76,082,952	$76,082,952		
Land Cost	$20,099,549	$20,099,549	$20,099,549		
Land Cost Per Unit	$111,664	$111,664	$111,664		
Average Cost Per Unit (Inclusive of Land)	$428,148	$422,683	$422,683		
IRR	**12.0%**	**10.9%**	**10.9%**	**-1.1%**	**-1.1%**
NPV	**$54,626**	**($2,801,086)**	**($2,801,086)**	**($2,855,712)**	**($2,855,712)**

BONUS DENSITY ANALYSIS

A bonus density offers an incentive to a developer to build additional affordable units in exchange for market rate units. Under the existing IZ ordinance the density bonus provides a one-to-one ratio of more market rate units to affordable units. The existing density bonus has historically been underutilized because the financial incentive is not great enough. Under the proposed IZ ordinance, the density bonus is increased to a two-to-one ratio, providing for two market rate units for every affordable unit. Additionally, all the affordable units under the density bonus are targeted toward the 50% AMI level. RKG tested the bonus impact of the proposed bonus density on the 65-unit project, as well as a hypothetical bonus density of three-to-one.

65-Unit Rental Development with Bonus Density

In the 65-unit rental development scenario under the proposed IZ ordinance, the bonus density allows for a maximum increase of bonus units of 20% of the total number of units in the development. Table 16 on the accompanying page presents the findings of the analysis. In the case of a 65-unit development the total number of bonus units allowed are 13 (65 x 20%), meaning that 78 units are allowed on the site of a 65-unit development. In the case where a two-to-one bonus density is applied seven additional affordable units are provided in exchange for 14 market rate units (14 market rate units resulted from rounding, since 13 is a prime number with no multiples). The added increase in market rate units slightly improves the financial viability of the development. In the baseline scenario where no bonus density is used, the IRR of the project is 10.8% which indicates the development does not reach market return expectations. Under the two-for-one bonus density scenario the IRR of the project improves to 11.1% but still does not reach the 12% desired return, indicating the incentive is not enough to the developer.

Applying a three-to-one bonus density results in the addition of four more affordable units in exchange for 12 market rate units (12 units results due to rounding because 13 has no multiples). The IRR of the project increases to 11.5%; however, the project still does not reach the minimum return expectation. The main reason why the bonus density is not working is because the affordable units that are provided through the bonus density are targeted towards the 50% AMI level. Due to the deep affordability level, the value loss that results is still too great for the developer to overcome.

Table 16. 65-Unit Rental Development With Bonus Density					
	Method Two: Proposed IZ Ordinance (Build Unit and Fee in Lieu, No Bonus)	Method Two: Proposed IZ Ordinance (Build Unit and Fee in Lieu, 2:1 Bonus)	Method Two: Proposed IZ Ordinance (Build Unit and Fee in Lieu, 3:1 Bonus)	Method Two vs. 2:1 Bonus	Method Two vs. 3:1 Bonus
Location	TOD	TOD	TOD		
Unit Type	Rental	Rental	Rental		
Number of Units	65	79	77	14	12
Parking	Underground	Underground	Underground		
Special Permit	Yes	Yes	Yes		
Inclusionary %	25%	25%	25%		
Inclusionary Treatment	Build Units and Pay Fractional	Build Units and Pay Fractional	Build Units and Pay Fractional		
Inclusionary Units	14	21	18	7	4
Payment in Lieu	$875,250	$875,250	$875,250	$0	$0
AMI Split	50/80/110% AMI	50/80/110% AMI	50/80/110% AMI		
All Costs	$27,616,564	$31,745,358	$31,294,727		
Land Cost	$7,195,416	$7,195,416	$7,195,416		
Land Cost Per Unit	$110,699	$91,081	$93,447		
Average Cost Per Unit (Inclusive of Land)	$424,870	$401,840	$406,425		
IRR	**10.8%**	**11.1%**	**11.5%**	**0.4%**	**0.7%**
NPV	**($1,216,502)**	**($990,672)**	**($590,854)**	**$225,830**	**$625,648**

180-Unit Rental Development with Bonus Density

Table 17 on the accompanying page presents the findings of the analysis. In the 180-unit rental development scenario under the proposed IZ ordinance, the bonus density allows for a maximum increase of bonus units of 20% of the total number of units which translates into 36 (180 x 20%) bonus units, meaning that 216 units are allowed on the site of a 180-unit development. In the case where a two-to-one bonus density is applied, 18 additional affordable units are provided in exchange for 36 market rate units. The added increase in market rate units slightly improves the financial viability of the development. In the baseline scenario where no bonus density is used, the IRR of the project is 10.9 percent which indicates the development is not financially feasible. Under the two-for-one bonus density scenario the IRR of the project improves to 11.2% but still does not reach the 12% desired return, indicating the incentive is not enough to the developer.

Applying a three-to-one bonus density results in the addition of 12 more affordable units in exchange for 36 market rate units. The IRR of the project increases to 11.7%; however, the project still does not become financially viable. The main reason why the bonus density is not working is because the affordable units that are provided through the bonus density are targeted towards the 50% AMI level. Due to the deep affordability level, the value loss that results is still too great for the developer to overcome.

Table 17. 180-Unit Rental Development With Bonus Density					
	Method Two: Proposed IZ Ordinance (Build Unit and Fee in Lieu, No Bonus)	Method Two: Proposed IZ Ordinance (Build Unit and Fee in Lieu, 2:1 Bonus)	Method Two: Proposed IZ Ordinance (Build Unit and Fee in Lieu, 3:1 Bonus)	Method Two vs. 2:1 Bonus	Method Two vs. 3:1 Bonus
Location	TOD	TOD	TOD		
Unit Type	Rental	Rental	Rental		
Number of Units	180	216	216	36	36
Parking	Underground	Underground	Underground		
Special Permit	Yes	Yes	Yes		
Inclusionary %	25%	25%	25%		
Inclusionary Treatment	Build Units and Pay Fractional	Build Units and Pay Fractional	Build Units and Pay Fractional		
Inclusionary Units	45	63	57	18	12
Payment in Lieu	$0	$0	$0	$0	$0
AMI Split	50/80/110% AMI	50/80/110% AMI	50/80/110% AMI		
All Costs	$76,082,952	$86,813,603	$87,120,486		
Land Cost	$20,099,549	$20,099,549	$20,099,549		
Land Cost Per Unit	$111,664	$93,053	$93,053		
Average Cost Per Unit (Inclusive of Land)	$422,683	$401,915	$403,336		
IRR	**10.9%**	**11.2%**	**11.7%**	**0.3%**	**0.8%**
NPV	**($2,801,086)**	**($2,367,936)**	**($964,979)**	**$433,150**	**$1,836,107**

SUMMARY FINDINGS

Based on the analysis conducted by RKG, it appears that project size (number of units) matters in relation to the IZ ordinance. The proposed IZ ordinance for small developments which can be defined as under six units seems to have a detrimental impact on the project financial feasibility. At the small scale, the addition of an additional unit of affordable housing has an outsized impact on the overall financial return of the project. Small scale developers have greater sensitivity to changes in their development program than larger developers because there are less units to spread the risk. For example, if a developer were to build a four-unit development under the proposed IZ, they would be required to pay a fee-in-lieu for the fractional unit (0.60) which would amount to $233,400. Under the rental scenario in the model a four-unit development costs about $1.8 million to build; the fee-in-lieu would be nearly 13% of the total cost. For a small project of that size, an increase in expenditures of that magnitude would have a detrimental impact.

At the medium size project level of between six and 20 units, the proposed changes to the inclusionary zoning ordinance appear calibrated correctly as they result in more affordable units for the City, and a better financial outcome to the developer. The percent allocation of affordable units between AMI thresholds is critical. Under the proposed language for ownership units between seven and nine units, the unit allocation is 15% of the units at 110% AMI; while for rental developments between 10 and 20 units the AMI allocation is 10% at 80% AMI, and 10% at 110% AMI. From the standpoint of building affordable units, these percent allocations help to incentivize the construction of units. Higher AMI thresholds minimize the value loss a developer experiences as compared to if they are required to provide units at a lower AMI threshold. The downside to this percent allocation is that housing for the lowest income levels does not get built; but if the incentive structure did not exist, then no housing would be built because the project would be financially infeasible.

At the large size rental projects defined as 35 units and above, the proposed IZ ordinance as designed has a negative impact on the overall financial return of a prototypical development. The key issue within the proposed IZ ordinance is how percentages within the affordability tiers are allocated. Table 18 below presents the affordability percentages for rental projects greater than 20 units. It can be observed that for developments falling between 51 and 100 units, there is a balance between units at 50% AMI and those at 110% AMI. However, even with the proposed affordability tiers, the balance is not sufficient to overcome the overall value loss from the creation of many affordable units.

Table 18. Affordability Tiers			
	21-50 Units	51-100 Units	101+ Units
Tiers	Rental	Rental	Rental
Tier 1, up to 50% AMI	5.0%	7.5%	10.0%
Tier 2, 51% - 80% AMI	10.0%	10.0%	10.0%
Tier 3, 81% - 110% AMI	10.0%	7.5%	5.0%
Total	25.0%	25.0%	25.0%
Source: City of Newton, 2018			

At the largest scale of development, those over 101 units, the affordability is further skewed downward toward the 50% AMI level. By requiring a developer to set aside 10% of their units at 50% AMI, with as an offset of only 5% of the units at 110% AMI, the financial feasibility of the project will be challenged. If the City is mandating deeper levels of affordability then there needs to be an offset or incentive that is attractive to developers. Even when factoring in the proposed bonus density of two units for every one affordable, the offset is not enough to compensate for the greater level of affordability. Within the bonus density proposal, for every market rate unit converted to an affordable 50% AMI unit, two market rate units are given. Again, the compensation for the deep level of affordability is not a sufficient incentive for the developer. A shift in the percentages within the affordability tiers may offer a solution to making developments financially feasible.

The proposed bonus density of two-for-one, while having an impact on the overall project feasibility, is not great enough to offset the number of affordable units that are required at the 50% AMI level. Even applying a hypothetical three-to-one ratio still does not yield a positive result. The key finding for the bonus density is that as currently structured, it is not sufficient for making the projects financially viable. One possible solution towards improving the bonus density is rather than require all affordable units resulting from utilizing the bonus density to fall within the 50% AMI threshold, the units could be allocated across all the AMI thresholds. This spreading of affordable units ultimately helps the development financially because it offsets the deeper affordable units.

APPENDIX 1

Baseline Model Assumptions	
Revenues	**Assumptions**
Market Rents*	
Studio	$2,233
1BR	$3,166
2BR	$4,005
3BR	$4,832
Market Sales Values for Condos**	
1BR	$419,000
2BR	$637,000
3BR	$862,000
Parking Income (Rental) (per spot)	$150
Vacancy Rate (Rental)	5%
Development Costs	
Construction Costs (PSF)	
Town House	$192
Stick	$176
Stick Over Podium	$205
Special Permit Costs (addition to soft cost)	10%
Soft Costs	20%
Land Costs Per Unit	
4 Owner	$189,936
4 Rental	$210,260
8 Owner	$294,688
20 Rental	$192,567
35 Owner	$228,185
65 Rental	$110,699
180 Rental	$111,664
Parking Costs (per stall)	
Surface	$8,000
Aboveground	$25,000
Underground	$40,000
Parking Ratios	
TOD	1.25
NON-TOD	2.00

Financing Costs	
First Year of Operations	2018
Construction Period	1 year
Inflation Rate	3%
Mortgage Term	
Rental (Years)	20
For Sale (Years)	2
Interest Rate	
Rental	6.00%
For Sale	5.50%
Equity	
Rental	30.00%
For Sale	30.00%
Capitalization Rate (Rental)	5.50%
Cost of Sale	2.00%
Reversion (Years)	
Rental (Years)	10
For Sale (Years)	1
Stabilization Period (Years)	1
Origination Fee %	1.50%
Developer Operating Expense Ratio (OE/PGI)	25.00%
Discount Rate (NPV) Rental	12.00%
Discount Rate (NPV) For Sale	20.00%
*** Based on market research**	
****Used assessment database and market research**	

GLOSSARY OF TERMS

Capitalization Rate – Ratio between the net operating income of a property and its sales value

Discount Rate – The interest rate used in discounted cash flow analysis to determine the present value of future cash flows

Density Bonus - A ordinance mechanism allowing a developer to build a greater number of units than the existing underlying zoning dictates in exchange for the creation of additional affordable units

Equity – Initial out-of-pocket investment on the part of developer that is required to obtain financing

Effective Gross Income – Gross income minus the vacancy collection loss

Fee in-Lieu – Payment made to City to account for fractional affordable unit not built.

Internal Rate of Return - Annualized rate of return sought by a developer based on the project discounted cashflow

Net Operating Income – Net income after deducting operating expenses from potential gross income

Net Present Value – Net value of the initial investment and cashflows generated from a project, discounted back to the current year

Operating Expenses – Expenses related to operating the building such as maintenance, salaries, and repairs

Other Income – Income generated from the property aside from rent, this income is parking revenues for leased spaces

Potential Gross Income – Potential income generated from rental income or sale of a property. Calculated by multiplying the number of units and rent for each unit

Residual Land Value - The price a developer pays for a piece of land. Generally, involves calculating the income expectations for the developed land, subtract all expenses associated with this development, and the remainder is the land residual

Vacancy and Collection Loss – Percent of rent that is uncollectable

Value Gap – Difference in value between a market rate unit and affordable unit