



# Zoning & Planning Committee Report

## City of Newton In City Council

**Monday, September 23, 2024**

Present: Councilors Baker (Chair), Oliver, Albright, Wright, Krintzman, Getz, Danberg, and Kalis

Also Present: Councilors Lucas, Leary, Malakie, Farrell, and Downs

City Staff: Jennifer Wilson, Assistant City Solicitor; Jennifer Caira, Deputy Director of Planning; Zachary LeMel, Chief of Long Range Planning; Nora Masler, Planning Associate; Mollie Hutchings, CPA Program Manager; and Jaclyn Norton, Committee Clerk

All agendas and reports, both past and present can be found at the following link: [Zoning & Planning Committee | City of Newton, MA \(newtonma.gov\)](https://www.newtonma.gov/zoning-planning)

For more information regarding this meeting, a video recording can be found at the following link: [Zoning & Planning Committee - September 23rd, 2024 \(youtube.com\)](https://www.youtube.com/watch?v=...)

**#42-24      Request for Discussion and Ordinance to require energy use reporting**  
COUNCILORS ALBRIGHT, DANBERG, and LEARY on behalf of the Newton Citizens Commission on Energy (NCCE), requesting discussion and an ordinance that would require large property owners (campuses and large commercial buildings) to report energy use and associated greenhouse gas emissions annually to the city of Newton, to be used to encourage reductions in said energy use and greenhouse gas emissions in accordance and support of the goals set forth in the Newton Climate Action Plan.

**Zoning & Planning Held 8-0 on 05/28/24**

**Zoning & Planning Held 5-0-1 (Councilor Danberg Abstaining) on 06/10/24**

**Zoning & Planning Held 7-0 on 07/22/24**

**Action:**      **Zoning & Planning Held 8-0**

**Note:**      Bill Ferguson, Co-Director of Sustainability; and Philip Eash-Gates, Principal Associate at Synapse Energy, presented the attached presentation which responded to questions raised at the June 10th public comment session.

## **Context**

Building performance standards are a leading policy tool for local governments looking at building decarbonization. At the time of the meeting 17 communities across the country have adopted these regulations and over 35 have committed to adoption by 2026. In Massachusetts, there are multiple decarbonization initiatives along with state action for net zero emissions by 2050. Mr. Eash-Gates stated that there are multiple benefits to adopting BERDO (Building Emissions Reduction and Disclosure Ordinance) in Newton. These include hedging against uncertainty in state planning to meet state decarbonization goals, avoiding early replacement of equipment to lower costs for property owners, and reducing exposure to rising gas rates.

A Councilor asked how many of the communities that have adopted performance standards included multi-family residential. Mr. Eash-Gates noted that the only community out of the 17 that didn't include multi-family residential was Cambridge, MA. All communities that have adopted performance standards have this only apply to large buildings with various thresholds.

## **Feasibility and Cost of Complying**

Mr. Eash-Gates presented the attached slide that compares the decarbonization timeline of Newton, Boston, and Cambridge. Newton aligned the decarbonization timeline with capital planning cycles to have this be a more gradual transition. Synapse Energy analyzed when buildings would need to begin making changes to comply with BERDO. Assuming that Newton buildings have similar performance as Boston buildings of the same type, 67% of buildings will comply until 2040 including all public and non-profit affordable housing buildings. The Department of Environmental Protection (DEP) and the Department of Public Utilities (DPU) have forecasted that heat pumps will be less expensive to operate than gas heating by 2030. Gas heating costs are projected to rise 300%-700% of current cost by 2050. The attached presentation describes how this compares to other fuel sources.

Regarding capital costs, Synapse and the BERDO Team evaluated completed projects, published literature, contractor quotes, and interviews with industry professionals. Through this research, the typical one-time cost is \$5 – \$35 per sf before incentives and is amortized at \$0.40 - \$3 per sf at 6% over 20-year equipment life. Without incentives, this would contribute to a 4% increase in operating costs. The attached presentation outlines the variety of financial incentives available.

Questions were asked on what would occur in 2040 that would make more buildings need to make changes to stay in compliance with the ordinance. Mr. Eash-Gates stated that due to the ordinance becoming stricter over time in 2040 affordable housing buildings will need to start making changes to comply. He added that he would need to get back to them on the details of financial assistance available for affordable housing buildings. Regarding the cap on incentives,

they can vary from the entire cost of the retrofit to either a custom or prescriptive amount depending on the size of the project in the case of heat pumps. When asked if these numbers included potential lost rent, Mr. Eash Gates responded that these are purely capital costs. During the discussion, it was also described that the state initiatives to decarbonize the electric grid respond to the criticism that electrifying buildings contributes to emissions.

### **Case Studies**

Synapse Energy and the BERDO Team looked at 5 buildings in Newton for case studies. Across these projects, the cost before incentives ranged from \$14 to \$35 per sf and after incentives from \$10 to \$32 per sf. For energy costs the change in costs after the retrofits ranges from a 41% cost decrease to an 18% cost increase. This does not consider the rising cost of gas prices described in the previous section. The attached presentation goes in-depth on each of the case studies.

A Councilor asked why the IRA electrical rebate was not a range in the chart for 181 Lexington Street. This amount was estimated along with the electric service upgrade and the boiler cost according to Mr. Eash-Gates. Multiple questions were asked regarding the lifespan and cost of heat pumps. The average lifespan of a heat pump is 15 years and the cost of them is set to decrease as adoption increases. Councilors asked if Mr. Ferguson and Mr. Eash-Gates could look into how these compare to gas-fired boilers.

### **Technical Assistance and Support**

Compared to the City of Boston, Newton has greater staffing per building at 293 (412) buildings (with residential) per full-time employee (FTE) compared to 635 buildings per FTE. Boston BERDO includes residential. The emissions reported in Newton BERDO are also simpler than Boston BERDO by not including water, district steam, grid emissions, and tracking renewables. The City will also offer public training and one-on-one assistance to help building owners comply with the ordinance. The attached presentation outlines various state and utility assistance programs.

A Councilor asked if there would be benefits if the energy use data were provided by the utilities rather than the building owner. Mr. Ferguson stated that this is the reporting mechanism for the Large Building Energy Reporting Program (LBER) from DOER. The City is waiting to adopt this reporting mechanism until it is up and running and can be evaluated. The current draft of BERDO allows for the City to adopt this reporting mechanism through regulations.

### **Reporting Energy Data**

Mr. Eash-Gates described how to set up Portfolio Manager for a building and the ease of reporting to comply with BERDO in Newton.

## Impacts of BERDO on Newton

To administer BERDO the City will be hiring one full-time person to administer the program along with the annual consulting budget of \$165,000. No cost will be incurred for upgrading city buildings to comply with BERDO until 2040. Regarding economic competitiveness, multiple peer-reviewed studies have shown that high-performing buildings garner market premiums. Councilors reiterated that the only cost would be the addition of this full-time position.

The Chair noted that before the meeting Newton Wellesley Hospital submitted amendments to the draft ordinance. Mr. Ferguson will be meeting with them at the beginning of October and will update the Committee on the results of that meeting.

Committee members voted 8-0 on a motion to hold from Councilor Krintzman.

**#45-24 Discussion and Possible Amendment to Inclusionary Zoning Ordinance to include Training**  
COUNCILORS DANBERG, BIXBY, MALAKIE, DOWNS, AND WRIGHT requesting discussion and possible amendment to require that developers and property managers provide training for their employees regarding bias toward residents of the IZ units and how to mitigate this bias.

**Zoning & Planning Held 8-0 on 03-25-24**

**Action: Zoning & Planning Held 8-0**

**Note:** Barney Heath, Director of Planning, stated that RKG Associates performed the previous review of the inclusionary zoning ordinance in 2019 and that this will be an introductory conversation. The Committee was joined by Kyle Talente, President; and Jason Masurovsky, Market Analyst/Planner from RKG Associates. RKG Associates has completed multiple inclusionary zoning studies throughout the state including the 2023 update to Boston's IDP. The attached presentation provides an overview of the project and the timeline. Mr. Talente described the approach methodology that will be used to create a financial feasibility model unique to Newton. This model is a proforma-based Excel model that will test the financial impact of policy changes against the financial risk/reward of residential development. Once this model is created it will be given to Planning Staff and trainings will be held so Councilors can utilize the model.

A Councilor on the Affordable Housing Trust described that the Trust is currently researching to get data on the number of affordable units in the City and data on each unit. They asked if increasing the number of required affordable units could raise the price of market-rate units. Mr. Talente stated that this would not raise the price of market-rate units as they are constrained by what the market is willing to pay. Multiple requests were made to have RKG Associate look into seeing what can be done for developments that are 4-6 units. When asked about having an analysis by village. Mr. Talente stated that while subgroups are part of the

model it might not be by village and will determine the exact subgroups during the production of the model. It was also asked by a Councilor if an affordable housing overlay district was part of the agreement and Director Heath stated that it is not. A request was also made to look into the frequency of the review of the ordinance and if it is appropriate.

Committee members voted 8-0 on a motion to hold items #45-24 and #44-24 from Councilor Krintzman.

**#44-24      Requesting re-evaluation and possible amendments to Inclusionary Zoning Ordinance**

COUNCILORS DANBERG, ALBRIGHT, KALIS, WRIGHT, OLIVER, MALAKIE, LIPOF, AND LUCAS requesting a discussion with the Planning and Development Department and the Newton Housing Partnership about the City's Inclusionary Zoning Ordinance and possible amendments to the ordinance to include 4-6 units, including raising the requirements for the number of affordable units in large developments.

**Zoning & Planning Held 8-0 on 03-25-24**

**Action:**      **Zoning & Planning Held 8-0**

**Note:**          This item was discussed jointly with item #45-24. A written report can be found with item #45-24.

**#317-24      Requesting discussion and possible amendments to Section 5.4.2**

HER HONOR THE MAYOR requesting a discussion and possible amendments to retaining wall regulations for Multi-Family/Commercial/Industrial/Civic Buildings in Section 5.4.2 of Chapter 30 Zoning.

**Action:**      **Zoning & Planning Held 8-0**

**Note:**          The Chair noted that due to time constraints that this item would be discussed at an upcoming meeting. Committee members voted 8-0 on a motion to hold from Councilor Krintzman.

**#209-24      Requesting discussion and possible amendment to Section 3.4.4 of Chapter 30 Zoning**

TERRENCE P. MORRIS, ESQ. on behalf of Brian Traugott requesting discussion and possible zoning ordinance amendment to Section 3.4.4 Garage Design Standards, subsection B. Definitions, Subparagraph 1, "Garage" by inserting the words "above grade" after the clause, "or portion of the structure" as it appears in the 1st sentence of the "Garage" definition.

**Action:**      **Zoning & Planning Voted No Action Necessary 6-0-2 (Councilors Albright and Danberg Abstained)**

**Note:** Attorney Morris described the development that led to him docketing this proposed amendment due to receiving an unfavorable determination from the Commissioner of Inspectional Services. The attached documents outline his proposed amendment and the background that led to the filing. Attorney Lee from the Law Department stated that this determination was made as the vehicle travel area of 1936-1938 could have cars parked in it while the travel area for 1930-1932 is a throughway to get to the previous property.

During the discussion, Attorney Morris also asked if the Committee could explore creating a mechanism to allow the Committee to guide the Commissioner of ISD on the interpretation of the ordinance. Attorney Lee and the Chair responded that there is currently a mechanism to appeal a determination by the ISD Commissioner to the Zoning Board of Appeals.

Multiple Councilors voiced support for reviewing the garage ordinance which could include different allowances for below-grade garages. However, the Councilors expressed hesitancy in moving forward with this amendment without having more research done. A couple of councilors also stated they would support allowing more space for below-grade garages by special permit.

Committee members voted 6-0-2 (Councilors Albright and Danberg Abstained) on a motion of No Action Necessary from Councilor Baker.

The meeting adjourned at 10:29pm.

**Respectfully Submitted,**

**R. Lisle Baker, Chair**



# Newton Building Energy Disclosure and Reporting Ordinance (BERDO)

## Zoning and Planning Committee Hearing

September 23, 2024

Philip Eash-Gates, PE CEM

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## Agenda: Questions from Prior Hearings

### Context

#### Feasibility and Cost of Complying

- Will Newton require quick decarbonization like Boston and Cambridge?
- When will owners need to reduce emissions?
- How will BERDO affect energy costs? Is decarbonization affordable?

#### Case Studies

- What financial resources are available?
- Do case studies show that decarbonization is achievable?

#### Technical Assistance and Support

- Does the City have adequate staffing?
- What resources are available to help building owners comply?

#### Reporting Energy Data

- How challenging is it to use Energy Star Portfolio Manager?
- Can building owners obtain tenant energy data?
- Has reporting been challenging in Boston? How will Newton be different?

#### Impacts of BERDO on Newton

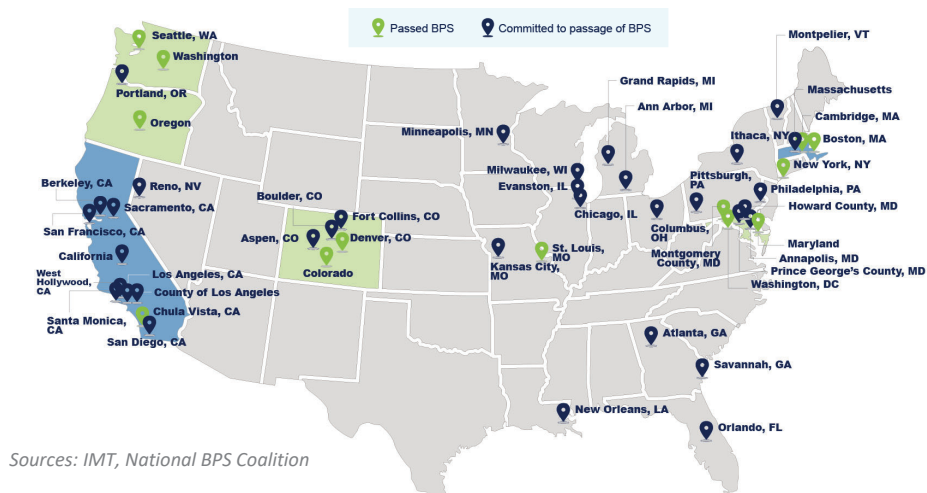
- What will BERDO cost taxpayers?
- How will BERDO affect property values and Newton’s tax base?

# Context

## Building Performance Standards

- Leading policy tool available to local government for building decarbonization
  - Large impact, few regulated buildings, resilient to legal challenge
- 17 jurisdictions have adopted performance standards
- 35+ more have committed to adoption by 2026

STATUS OF BUILDING PERFORMANCE STANDARDS IN THE UNITED STATES

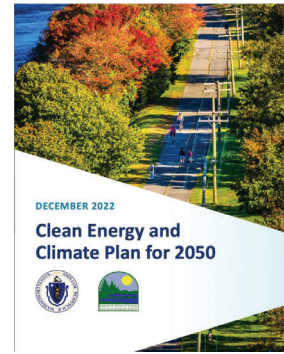


Sources: IMT, National BPS Coalition



## Massachusetts Context

- Supportive environment for local decarbonization policies
- Tapestry of supply- and demand-side initiatives
  - Renewable Portfolio Standard and Clean Energy Standard
  - Proposed Clean Heat Standard
  - Mass Save program for energy efficiency and electrification
  - Federally funded programs through *Inflation Reduction Act*
- Net zero emissions in 2050 required under *Global Warming Solutions Act (GWSA)* and *Clean Energy and Climate Plan (CECP)*
- Newton BERDO efforts toward decarbonizing offers benefits:
  - Hedges against uncertainty in state planning to meet GWSA requirements
  - Phased decarbonization avoids early replacement, lowering costs
  - Reduces exposure to rising gas rates under state policy



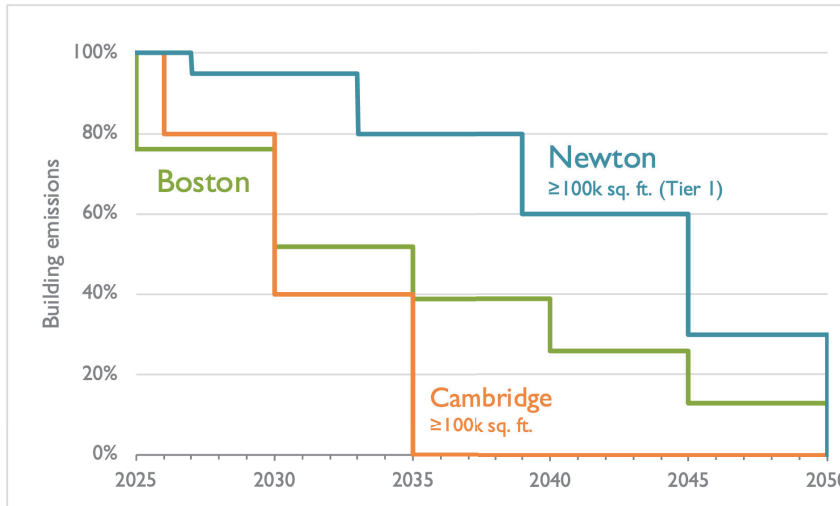
# Feasibility and Cost of Complying

# Pace of Decarbonization

## Will Newton require quick decarbonization like Boston and Cambridge?

- Newton standards are aligned to capital planning cycles
- Reductions are comparatively later, less frequent, and more gradual

**BUILDING PERFORMANCE STANDARD EMISSION LIMITS IN MASSACHUSETTS**



Notes:

Boston and Cambridge include electricity emissions

Cambridge allows carbon offsets for buildings ≥100,000 sq. ft.

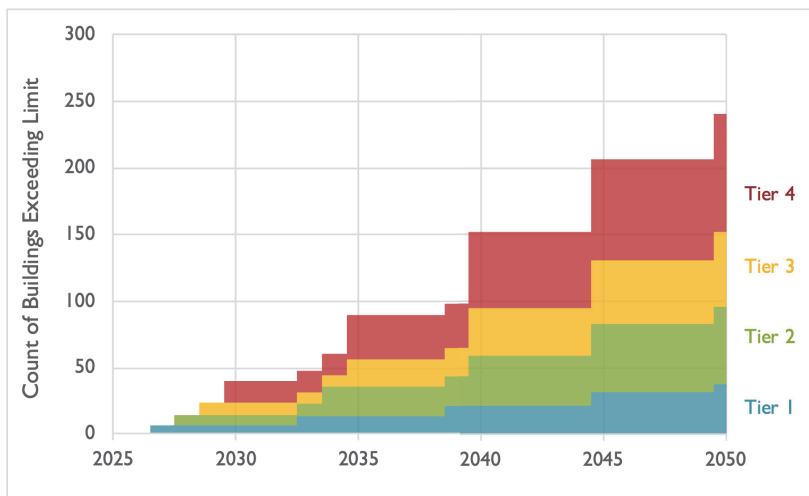
Newton and Cambridge have slower pace for buildings <100,000 sq. ft.

# Pace of Decarbonization

## When will owners need to reduce emissions?

- About 10 buildings impacted each year; 40 buildings by 2030
- Most buildings (67%) will comply until 2040
- All public and non-profit affordable housing buildings (nine total) comply until 2040

**COUNT OF BUILDINGS OVER BERDO LIMITS (IN ABSENCE OF UPGRADES)**



Notes:

Assumes Newton buildings have similar performance as Boston buildings of same type

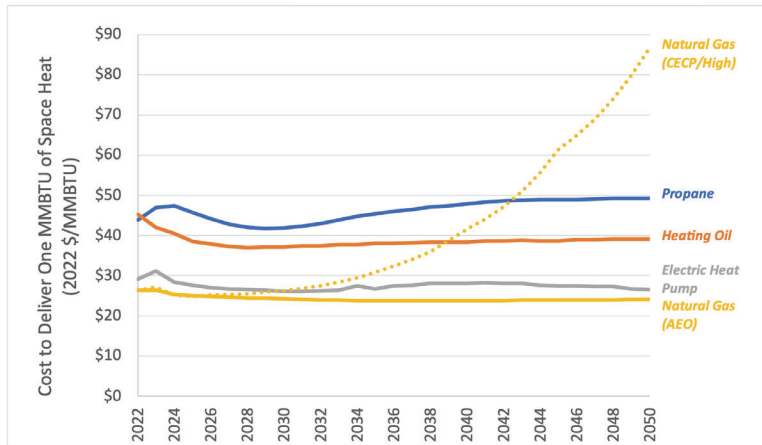
Does not total to 293 buildings because all-electric buildings will not need to make changes.

# Cost of Complying: Energy

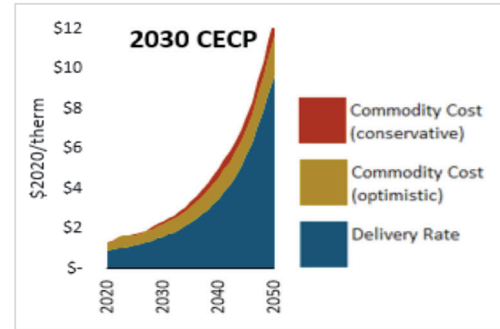
## How will BERDO affect energy costs?

- Studies for MA DEP and MA DPU forecast heat pumps to be less expensive to operate than gas heating by 2030 under CECP
- Gas heating costs are expected to rise to 300%–700% of current costs by 2050
- BERDO reduces exposure to rising gas rates

MASSACHUSETTS SPACE HEATING COST FORECAST



MASSACHUSETTS NATURAL GAS COST FORECAST



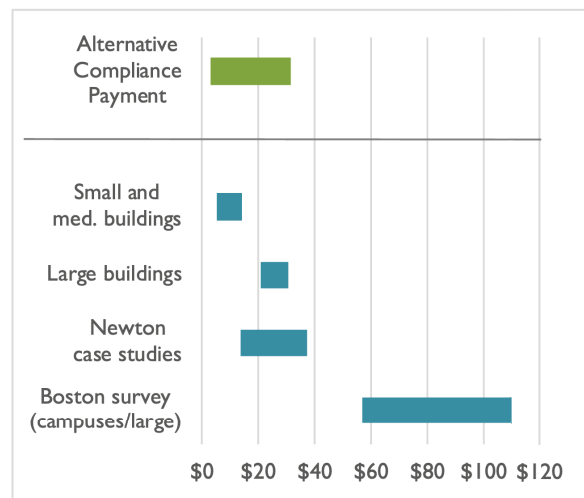
Sources: Sustainable Energy Advantage and Synapse Energy Economics for MA DEP, 2023 ([Link](#))  
Energy+Environmental Economics and Scott Madden Management Consultants for MA DPU, 2022. ([Link](#))

# Cost of Complying: Capital Costs

## Is decarbonization affordable?

- Synapse and BERDO Team evaluated completed projects, published literature, contractor quotes, and interviews with industry professionals
- Costs vary by building type and size
- Typical costs
  - One-time: \$5–35 per sq. ft. before incentives
  - Amortized: \$0.40–\$3.00 per sq. ft. annual (at 6% over 20-year equipment life)



BUILDING UPGRADE COSTS (BEFORE INCENTIVES)



Sources: Jones, B. 2021, Synapse 2024, City of Newton 2024, City of Boston 2024, Synapse 2024, various contractors

## Cost of Complying: Capital Costs

### *Is decarbonization affordable?*

- Amortized: \$0.40–\$3.00 per sq. ft. annual
- Compared to annual operating costs:
  -  **Commercial rent** for offices in Newton: \$42 per sq. ft. (+4% costs)
  -  **Multifamily rent** in Newton: \$2,810 per unit (+4% costs)
- Incentives will reduce net costs

Sources: National Association of Realtors 2024

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## Cost of Complying: Financial Support

### *What financial resources are available?*

- **Mass Save commercial incentives**: \$9.00–\$15.00 per sq. ft.
  - Heat pumps: \$2,500–\$4,500 per ton
  - Heat pump water heaters: \$1,000–\$2,200 per unit
  - Deep energy retrofits: \$1 per sq. ft.
- **179D Federal tax deduction** for commercial retrofits: \$0.50–\$6.00 per sq. ft.
  - Sliding scale for achieving 25–50% energy savings: \$0.50–\$1.00 per sq. ft.
  - **Plus** \$2.50–\$5.00 per sq. ft. for meeting prevailing wage and apprenticeship requirement
  - Capped at price of retrofit

Combined incentives up to \$20+ per sq. ft.

Low- and no-interest loans



## Cost of Complying: Financial Support

### *What financial resources are available?*

- **Low- and no-interest financing** for energy upgrades
- Property Assessed Clean Energy (PACE):
  - Low-interest loans to commercial and multifamily owners
  - Repaid through property taxes with terms up to 20 years
  - Available through MassDevelopment and DOER
  - Can reduce tax liability
- Massachusetts Community Climate Bank:
  - Loans for affordable housing
  - \$70 million to date in seed funding
  - Available through MassHousing
- Eversource and National Grid:
  - 0%–2% interest loans up to \$500,000
  - Terms up to 7 years
  - Incentives used to buy down interest rate

Combined incentives up to \$20+ per sq. ft.

Low- and no-interest loans



**nationalgrid**

**EVERSOURCE**

# Case Studies

## Local Case Studies



### Buildings in Newton

- |   |                                 |
|---|---------------------------------|
| 1. 181 Lexington Apartments                       | <i>Planning phase</i>           |
| 2. Newton Early Childhood Program                 | <i>Complete</i>                 |
| 3. Auburndale Library                             | <i>Complete</i>                 |
| 4. First Unitarian Universalist Society in Newton | <i>Multiple phases complete</i> |
| 5. Chapman Construction and Design office         | <i>Phase 1 complete</i>         |



### Project costs

- Before incentives: \$14 to \$37 per sq. ft.
- After incentives: \$10 to \$32 per sq. ft.
- Incremental cost vs. fossil fuel equipment: -\$4 to +\$5 per sq. ft.



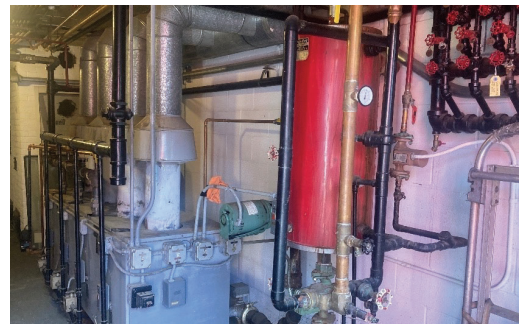
### Energy savings

- Energy use: 53% to 76% MMBtu savings
- Cost: 41% cost decrease to 18% cost increase (gas prices will increase)

## 181 Lexington Street

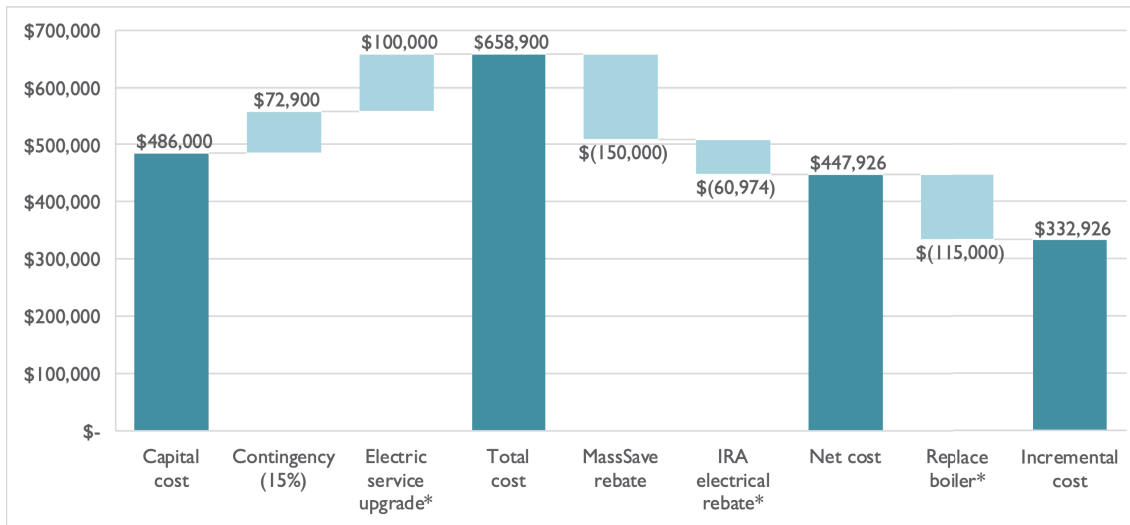
- **Location:** Newton, MA
- **Sector:** Multifamily
- **Project size:** 24,570 sq. ft. (30 units)
- Complies with BERDO until 2035
- **Project scope for full decarbonization:**
  - Replace gas boilers with central heat pump for space heat and domestic hot water
  - Electrical service upgrade
- **Project cost:**
  - Total: \$660,000
  - Incremental: \$330,000 (\$11,000 per unit)
  - Monthly per-unit cost: \$80, +3% rent (financed at 6% interest, 20 year)

181 LEXINGTON STREET WITH BOILER ROOM



# 181 Lexington Street

PROJECT COST DETAIL



- Incentives expected to reduce project costs by 32%
- Firm contractor quotation and evaluation from Mass Save
- Estimated costs: electric service upgrade, IRA rebate, boiler cost

# Newton Early Childhood Program

- **Location:** Newton, MA
- **Sector:** Education
- **Project size:** 42,000 sq. ft.
- **Project cost:** \$1.5 million
- **Project completed FY2022**
  - Fully decarbonized
  - Replace central boilers with all-electric VRF heat pump (lowest lifecycle cost option)
  - New roof with continuous insulation
- **Project cost**
  - Total: \$1,570,000 (\$37 per sq. ft.)
  - Incremental: -\$655,000 Compared to \$2.2 million boiler and heating distribution replacement

NECP WITH RETROFIT SCENARIO COSTS

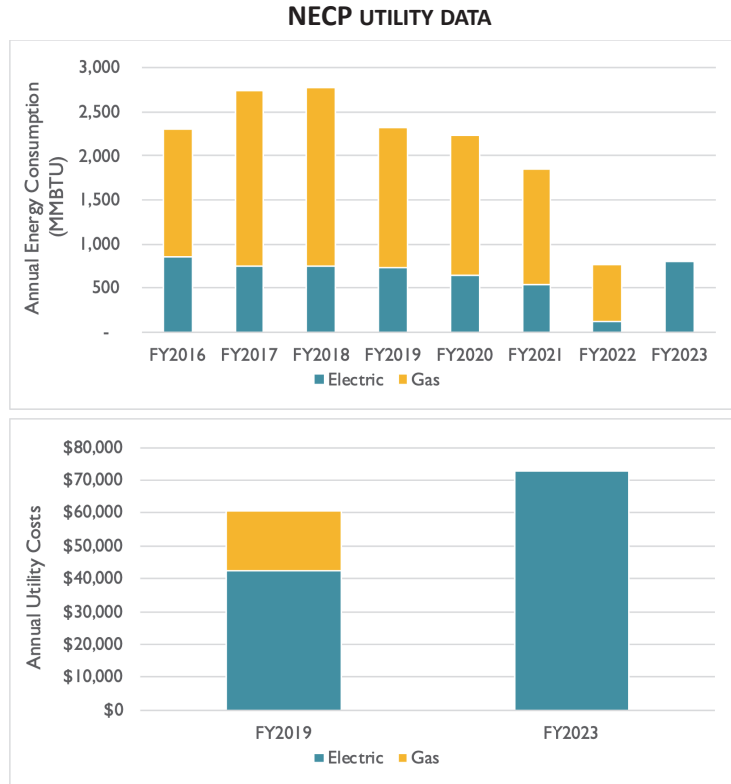


HVAC System Type	Capital Cost	Annual Electric Costs	Annual Gas Costs	Annual Maint. Costs	Total Annual Costs
Standard efficiency gas boilers	\$2,005,000 (estimate)	\$46,379	\$26,731	\$15,875	\$88,985
High efficiency gas boiler	\$2,225,000 (estimate)	\$36,293	\$18,867	\$20,250	\$75,410
All-electric VRF heat pumps	\$1,570,000 (actual)	\$42,924	\$0	\$23,300	\$66,225



# Newton Early Childhood Program

- Energy use reduced 65% (actual)
- Energy costs rose 18%
- Energy costs increased due to 55% electricity price increase
  - 2019: \$0.20/kWh
  - 2023: \$0.31/kWh
  - Energy costs would have been higher in 2023 with boiler



# Auburndale Library

- **Location:** Newton, MA
- **Project size:** 5,484 sq. ft.
- **Project cost:** \$75,000
- Example of historic building achieving full decarbonization
- **Project completed FY2020**
  - Fully decarbonized
  - Air-source heat pumps
  - Attic insulation and air sealing
- **Project cost**
  - Total: \$76,000 (\$14 per sq. ft.)
  - Would have been eligible for \$22,000 in rebates under the current program

**AUBURDALE LIBRARY WITH RETROFIT COSTS**



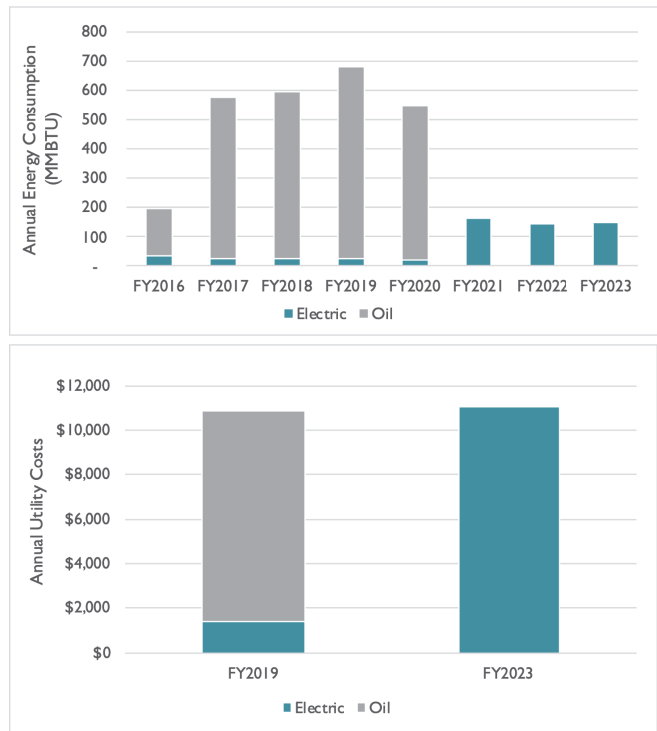
Upgrade	Upgrade Cost	Cost per sq. ft.
Insulation and air sealing	\$11,610	\$2
Air-source heat pumps	\$64,800	\$13
<b>Total cost</b>	<b>\$76,410</b>	<b>\$14</b>



# Auburndale Library

- Energy use reduced 76% (actual)
- Energy costs unchanged despite 25% electricity price increase
  - 2019: \$0.20/kWh
  - 2023: \$0.25/kWh
- Energy costs would have been higher in 2023 with boiler

AUBURNDALE LIBRARY UTILITY DATA



# First Unitarian Universalist Society in Newton

- **Location:** Newton, MA
- **Project size:** 30,240 sq. ft.
- **Emission intensity:** 2.0 kgCO2e/sq. ft.
- Complies with BERDO until 2045
- **Phased decarbonization since late 1990s**
  - Tracking energy in Portfolio Manager
  - Staged heating replacement
    - Steam with hot water
    - Failing AC condensers with heat pumps
  - Partitioned HVAC into 19 zones
  - Temperature setback in vacant rooms
  - Remote monitoring: equipment and energy
- Example of non-profit house of worship voluntarily decarbonizing over time

UNITARIAN UNIVERSALIST BUILDING



### Keys to success

- Expertise and commitment from members
- Long-term planning
- Adaptation over time
- Efficiency plus electrification

## Chapman Construction and Design HQ

- **Location:** Newton, MA
- **Building type:** Office and retail
- **Project size:** 19,000 sq. ft.
- **Phase 1 completed 2010 (LEED Platinum)**
  - Solar PV, 47 kW
  - Solar thermal domestic hot water
  - Envelope: air sealing, roof insulation, wall insulation, window film
  - LED lighting with daylighting
- **Project cost:**
  - \$230,000 (\$12 per sq. ft.)
  - \$130,000 grant from Massachusetts Technology Council
- **Energy savings:** \$20,000 per year, 5-year simple payback

CHAPMAN CONSTRUCTION AND DESIGN BUILDING



### Phase 2 plan, 2027

- Full decarbonization
- Further improvements to building envelope
- VRF Heat pump
- Energy recovery ventilation
- Expansion of solar PV array

# Technical Assistance and Support

## Comparison to Boston Resources

### *Does the City have adequate staffing to help building owners comply?*

- Relative to the number of buildings, Newton has greater staffing than Boston
- Newton reporting is simpler: no water, no district steam, no grid emissions, no tracking renewables
- Newton emission requirements phase-in over 4 years

	Boston BERDO	Newton BERDO (with residential)
<b>Buildings</b>	5,717*	293 (412)
<b>Owners</b>	3,136	179 (261)
<b>Staff</b>	9 FTE 635 buildings per FTE 348 owners per FTE	1 FTE 293 (412) buildings per FTE 179 (261) owners per FTE
<b>Annual Consulting Budget</b>	\$500,000 \$87 per building	\$165,000 \$563 (\$400) per building

*\*Note: Boston regulates at the parcel-level, so the number of buildings is greater than shown*

## City Assistance for Building Owners

### *What resources are available to help building owners comply?*

- City will offer public trainings and one-on-one assistance
  - Use of ENERGY STAR Portfolio Manager
  - Explanation of how to obtain energy use data
  - Developing a BERDO compliance plan
  - Flexibility measure options: Building Portfolios, Individual Compliance Schedules, Hardship Plans
- City will host public seminars
  - Manufacturers and vendors: on technology solutions
  - Utilities: on available assistance and how to access it (technical assistance, rebates and incentives, financing options, aggregated energy use data)
- Newton BERDO website: resource clearinghouse with detailed FAQ



## State Assistance for Building Owners

### *What resources are available to help building owners comply?*

- MassCEC Building Performance Exchange for large building decarbonization
  - \$4 million in state funding; pursuing \$2 million in federal funds
  - Information and technical assistance to help comply with BERDO-like policies throughout Massachusetts
    - Centralized information on state policies, initiatives, and programs
    - Clearinghouse for financing, incentives, and qualified building professional registry
    - New offerings: tools, guidebooks, case studies, trainings, events, and seminars
  - Early rollout for communities with BERDO policies expected 2025/2026
- MassCEC Building Electrification and Transformation Accelerator (BETA)
  - Portfolio of resources to help commercial and multifamily owners electrify
  - No cost, in-depth audits to develop decarbonization plan (pilot stage)



## State Assistance for Building Owners

### *What resources are available to help building owners comply?*

#### **Large Building Energy Reporting (LBER) program**

- Requires utilities to report energy use for large buildings
- DOER consultant assembling energy use and building information
- First LBER reports issued October 2025, but utilities can request extensions
- Key differences compared to BERDO
  - Does not require emissions reductions
  - Includes electricity emissions
  - Requires utilities to report natural gas and electricity, not building owners
- BERDO Team is monitoring LBER closely to determine if it is useful for BERDO
- BERDO ordinance language allows City to incorporate use of LBER via regulations
 

*“Owner...shall accurately report to the BERDO Administrator, **via the Portfolio Manager or as required by the Regulations**”*
- City submitting comments to DOER on draft regulations to align with BERDO



## Utility Assistance for Building Owners

### *What resources are available to help building owners comply?*

- Mass Save 3-year plan (2025-2027)
  - Funded at \$5 billion, including \$3.5 billion for incentives
  - **\$437 million for multifamily and commercial customers of Eversource and National Grid**
  - Install over **115,000 heat pumps**
  - Reduce GHG emissions by **1.0 million metric tons CO<sub>2</sub>e**
  - Incentives for **natural gas equipment phased out** by law (more available for electrification)
  - Statewide customer call center
  - Equity: Main Streets program for downtowns, schools, **\$1 billion income-based incentives**
- Rebates and Incentives: for insulation, air sealing, HVAC controls, heat pump DHW heaters, heat pump heating.
- **Low- or no-cost financing programs**
- **Free scoping and technical assistance studies** to help owners decarbonize buildings
  - Comprehensive building assessment, portfolio prioritization, decarbonization roadmap, existing building commissioning, and more



# Reporting Energy Data

# Setting up Portfolio Manager

## How challenging is it to use Energy Star Portfolio Manager?

1. Create account: <https://portfoliomanager.energystar.gov/pm/signup>
2. Obtain energy bills
  - **Gas and electric:** Bills for prior year (January bill includes 12 months prior)
  - **Oil and propane:** Delivery receipts for prior year
  - **Tenant data:** Available through utility portal and LBER reports; City will help
3. Identify building size (sq. ft.) and ID from the list on the City of Newton website: <https://newtonma.gov/newtonBERDO>
4. Enter building information and energy data into Portfolio Manager

# Setting up Portfolio Manager

## How challenging is it to use Energy Star Portfolio Manager?

- Junior staffer learned Portfolio Manager and reported 30 City buildings in 15 hours
- Demo video: 2 minutes to enter Newton City Hall using collected data

The image displays two side-by-side screenshots. On the left is an Excel spreadsheet titled 'Newton City Hall - Demo'. It contains a table for 'Property Information' and 'Meters'. The 'Property Information' table includes fields for Property type (Office), Street Address (1000 COMMONWEALTH AVE, Newton, MA 02457), Year built (1932), GFA (sqft) (73,414), Occupancy (100%), and Newton BERDO ID (18347.18347). The 'Meters' table lists Gas (Units: kWh, Date Active: 1/1/2013) and Electric (Units: kWh, Date Active: 1/1/2013). A video player overlay shows '00:00:00'. On the right is the Energy Star Portfolio Manager web interface. It shows a dashboard for 'MyPortfolio' with 32 properties. A table lists properties with columns for Name, Energy Current Date, Direct GHG Emissions Intensity (kgCO2e/ft²), Total Location-Based GHG Emissions Intensity (kgCO2e/ft²), and Site EUI (kBtu/ft²). The table includes entries for 113 Crafts St., 80 Crafts St., Fowler Elementary School, Aquatic School, Bowline MS, Boston ES, C.G. Bush ES, Canal ES, Charles E. Brown MS, and Courthouse ES.

## Setting up Portfolio Manager

*Has reporting been challenging in Boston? How will Newton be different?*

- Boston works with owners to resolve issues and has had nearly complete reporting (only 3.8% of 2022 reports are pending revisions)
- Newton reporting is simpler
  - Fewer utilities: no water or district steam reporting
  - Electricity emissions excluded: no grid emissions, no solar metering, no tracking renewables, no changing emission factors
  - Single platform: streamlined reporting (Boston and Cambridge uses two)



Environment Department

### BERDO REPORTING FORM

Welcome to BERDO Reporting!

This platform is used to submit additional information for BERDO not collected through Energy Star Portfolio Manager.

# Impacts of BERDO on Newton

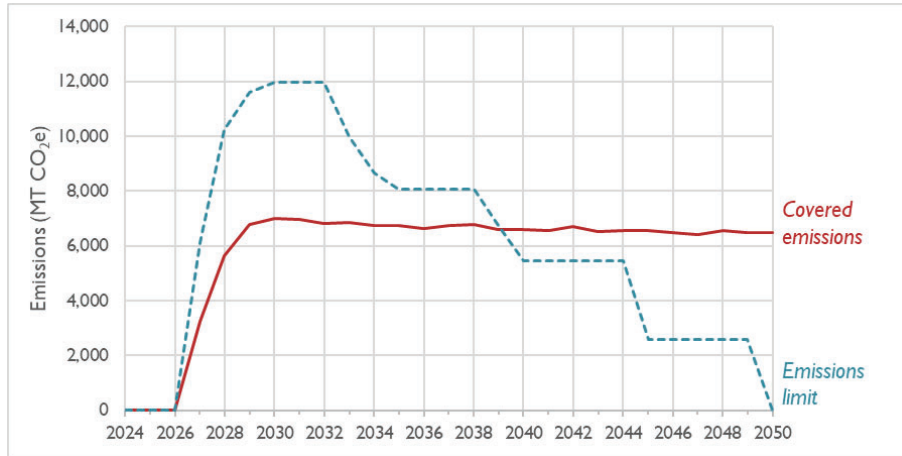


# BERDO Administration Cost

## What will BERDO cost taxpayers?

- City of Newton will hire 1 full-time personnel to administer BERDO
- City of Newton has an annual consultant budget of \$165,000
- Municipal facilities will comply with BERDO until 2040 → no cost

MUNICIPAL FACILITY EMISSIONS COMPARED TO BERDO LIMIT

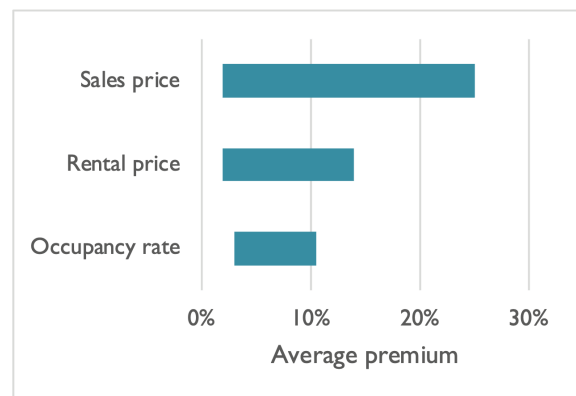


# Economic Competitiveness

## How will BERDO affect property values and Newton’s tax base?

- Stakeholders question if BERDO will hurt Newton’s economic competitiveness
- Seven peer-reviewed studies show high-performing buildings garner market premiums
  - Average sale price increase: 2–25%
  - Average rental price increase: 2–14%
  - Average occupancy rate increase: 3–11%

ADDED VALUE OF ENERGY STAR-LABELED COMMERCIAL BUILDINGS IN THE UNITED STATES



Sources (research assembled by IMT): Devine and Kok 2015, Wiley et al. 2010, Fuerst and McAllister 2009/2011, Jackson 2009, Pivo and Fisher 2010, Kok et al. 2010



# Thank you!

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# CITY OF NEWTON

## INCLUSIONARY ZONING ANALYSIS KICKOFF MEETING SEPTEMBER 2024

PREPARED BY RKG ASSOCIATES



## MEETING AGENDA

**Introductions** – Allow the committee and RKG to introduce themselves

**RKG Experience** – Other locations RKG has worked with communities on IZ feasibility

**Project Overview** – Explanation of the purpose of the analysis

**Project Timeline** – Process of the project

**Methodology** – Presentation of what and how RKG will be doing the analysis

**Outcomes** – High-level demonstration of similar products

**Discussion** – Questions for and from Committee

## INTRODUCTIONS

**RKG Associates is a planning, economic development, and real estate advisory firm**

- Founded in 1981
- Headquartered in Alexandria, VA with offices in Boston, Atlanta, and Dallas
- 12 full-time professionals including 4 principal

**RKG completed Newton's IZ update in 2018 and review in 2019**

- Have completed several IZ studies throughout Massachusetts including Boston's IDP update in 2023

## RKG EXPERIENCE

**In addition to working with Newton on its IZ program, RKG has recently completed several other IZ feasibility studies throughout New England and the United States**

- Boston, MA
- Somerville, MA
- Brookline, MA
- Amesbury, MA
- Lowell, MA
- Lynn, MA
- Several MBTA Zoning Studies
- Nashua, NH
- Portsmouth, NH
- Providence, RI
- Alexandria, VA
- Charlottesville, VA
- Richmond, VA
- Chamblee, GA

## PROJECT OVERVIEW

### Assessment of IZ Housing Development Policy Effectiveness

- Quantitative assessment of current housing policy over past 5 years
- Engagement with developers to understand challenges and opportunities

### Assessment of Resident Support Effectiveness

- Geographic assessment of services and IZ unit location
- Interviews with service providers to understand gaps and opportunities

### Process Review

- Comprehensive review of approval process for IZ projects to identify efficiency opportunities

### Goals and Vision

- Refine goals and vision statement for IZ policy through engagement...including this group

### Model Update

- Update the financial feasibility to understand current market conditions
- Test current financial conditions to understand potential impacts of changes to current IZ policy

### Recommendations

- Strategies that balance goals and vision with market realities for the City to consider

## PROJECT TIMELINE

### Milestone #1 – Project Kickoff

- Engagement with staff
- Review of data

### Milestone #2 – Interviews

- Staff, developers, and service providers

### Milestone #3 – Project findings review

- Summary of engagement
- Market assessment and model findings

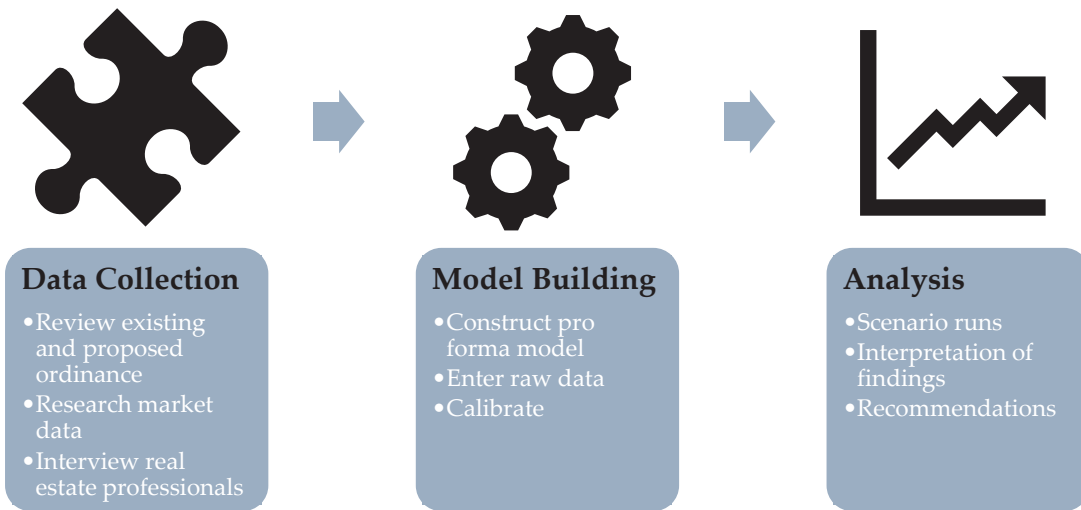
### Milestone #4 – Model findings and initial strategies

- Presentation of IZ policy alternatives
- Discussion of initial options

### Milestone #5 – Revised strategies

- Final engagement to garner consensus
- Presentation of results

## APPROACH METHODOLOGY



## ANALYSIS METHODOLOGY

The financial feasibility model is a proforma-based Excel model that is designed to test the financial impact of potential policy changes against the financial risk/reward of a residential development. All financial feasibility modeling is based upon three principal components: construction costs, operational costs, and operational revenues.



## ANALYSIS METHODOLOGY

### Construction Costs

- Soft costs – design and preparation
- Hard costs – materials and construction
- Land costs – physical location

### Operational Expenses

- Financing costs – debt and equity to pay for the project
- Traditional 'OpEx' categories (e.g., marketing, management, repairs)
- Real property taxes

### Operational Revenues

- Rental rates and sale prices (ownership)
- Parking revenue
- Other revenues (e.g., vending/laundry)

RKG Associates will be collecting Newton-specific data for each of these categories through interviews, research, and data collection.

## MODEL OUTPUTS

### Development profile

- Unit Count
- Affordable Units
- Cash Contribution

### Development value

### Development cost

- Land Cost
- Construction Cost

### Rate of return

### Affordability gap



**Is the development  
proposal financially  
viable?**

# MAKING A FINANCIAL DECISION

## Rates of return

- Return on Cost – Performance of the full asset
- Cash on Cash – Performance of equity invested
- Internal Rate of Return – Impact of the time-value of money

## How does it work?

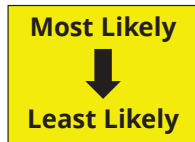
- Measure against other investment types and locations
- Reflects opportunity cost for risk-reward analysis

## What can I “live with?”

- Opportunity costs for investing those dollars
- Will vary by project type

## What happens when I cannot reach my goal?

- Offer less for land
- Go somewhere else
- Sit on my money
- Bite the bullet



# FEASIBILITY MODEL

- Model runs on market data collected through research and interviews
- Variables allow user to select common development types, location, and affordability requirements
- Model design allows user to customize for a unique project
- Financials deal with both financing and incentives
- RKG will run this model to determine of various potential IZ policy changes

# MODEL OUTPUTS

## MARKET RATE DEVELOPMENT

ROC	10-Unit	25-Unit	100-Unit
Area E/F	6.46%	6.40%	5.07%
Area G/H	7.15%	7.08%	5.62%
Area I	5.86%	5.82%	4.63%

IRR	10-Unit	25-Unit	100-Unit
Area E/F	15.78%	15.21%	2.30%
Area G/H	21.39%	20.88%	8.18%
Area I	10.42%	10.06%	-3.39%

## IZ ANALYSIS

ROC	10-Unit	25-Unit	100-Unit
Area E/F	6.38%	6.13%	4.80%
Area G/H	7.02%	6.74%	5.28%
Area I	5.83%	5.61%	4.42%

IRR	10-Unit	25-Unit	100-Unit
Area E/F	15.05%	12.12%	-0.98%
Area G/H	20.40%	16.98%	4.68%
Area I	10.13%	7.56%	-6.59%

## BONUS DENSITY ANALYSIS

ROC	10-Unit	25-Unit	100-Unit
Area E/F	6.38%	6.16%	4.83%
Area G/H	7.04%	6.79%	5.32%
Area I	5.85%	5.66%	4.44%

IRR	10-Unit	25-Unit	100-Unit
Area E/F	14.35%	13.06%	-0.66%
Area G/H	19.55%	18.30%	5.00%
Area I	9.82%	8.44%	-6.26%

- Market feasible
- May have challenges to find funding
- Would require revenue/cost changes from current market thresholds
- Not market viable

Requires Podium or Steel-Frame Construction

# MODEL OUTPUTS

### For-Profit Developer

Set Aside	Target AMI	9% LIHTC	Vouchers	Subsidy	Subsidy/Unit
13%	30%	Y	Y	\$4,400,000	\$98,000
87%	60%	Y	N		

### Non-Profit Developer

Set Aside	Target AMI	9% LIHTC	Vouchers	Subsidy	Subsidy/Unit
13%	30%	Y	Y	\$3,450,000	\$77,000
87%	60%	Y	N		



## Q&A/DISCUSSION

What are greatest challenges to finding suitable housing for low/moderate income households in Newton?

How has (or hasn't) the current IZ policy address these issues?

How would you define success for an effective policy?  
Contributing factors?

Are there specific changes to the current policy that you would like to see?

What concerns (if any) do you have about changing the current policy?

Do you have any questions about RKG's process or approach?



**BACKGROUND**

Two (2) adjoining lots on Commonwealth Avenue which are being developed simultaneously, each supporting a 2-family dwelling . The street addresses for the 2 properties are 1930-1932 (hereinafter "Lot A") and 1936-1938 hereinafter "Lot B").

Each of the two-family dwellings are to house the four required accessory parking spaces located in separate below-grade garages.

The 2 properties are to be serviced by a single curb cut on Lot A as depicted on the attached Easement Plan.

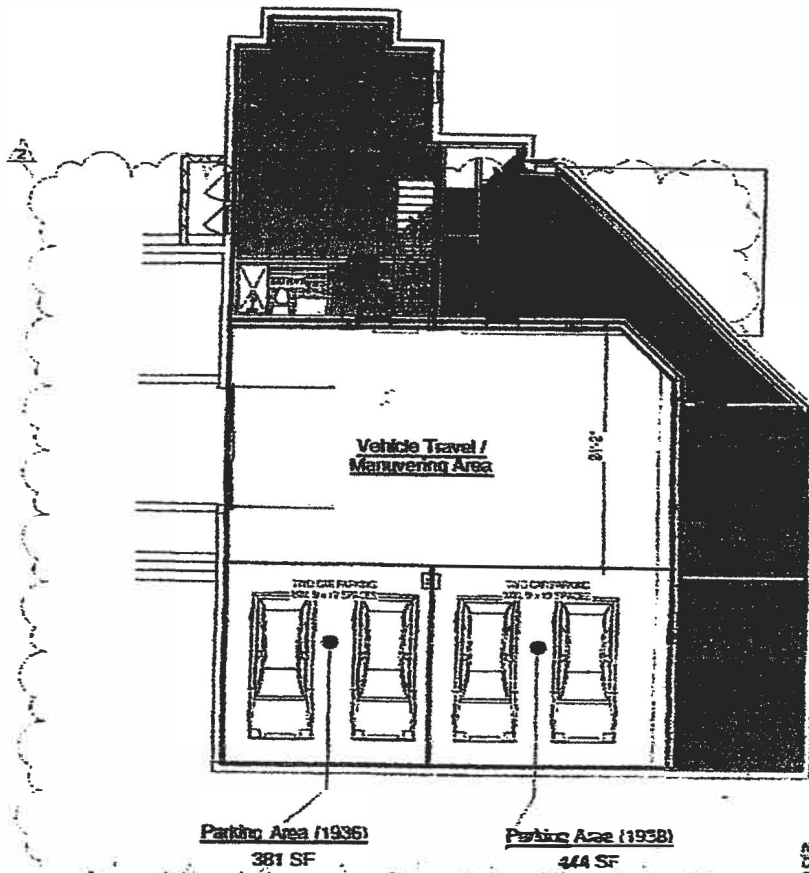
The plan calls for an easement across Lot A through the Lot A garage to access to access the Lot B garage.

Comparison of the 2 basement/garage plans illustrates how each is being treated differently by ISD.

- On Lot A ISD calculates the garage area as that area comprising the 4 parking spaces (751 SF) while treating the balance of the area as vehicle travel/maneuvering area.
- On Lot B ISD calculates the garage area as that comprising not only the 4 parking spaces (825 SF) but also the vehicle traveling and maneuvering area, which puts the size over 1000 SF.
- In interpreting the definition of a garage contained in section 3.4.4 Garage Design Standards, ISD applied the provisions of 3.4.4.F which limits the garage area to 500 SF feet per unit or a total of 1000 SF or a 2 car garage.



1936-1938



00 - Basement - Areas

NOTE - PARKING IS COMPLIANT WITH NEWTON ZONING 3.4.4 (F) WHICH ALLOWS FOR 500 SF PER UNIT FOR GARAGE PARKING AND A MAX OF TWO CARS PER UNIT

00 - Basement - Areas

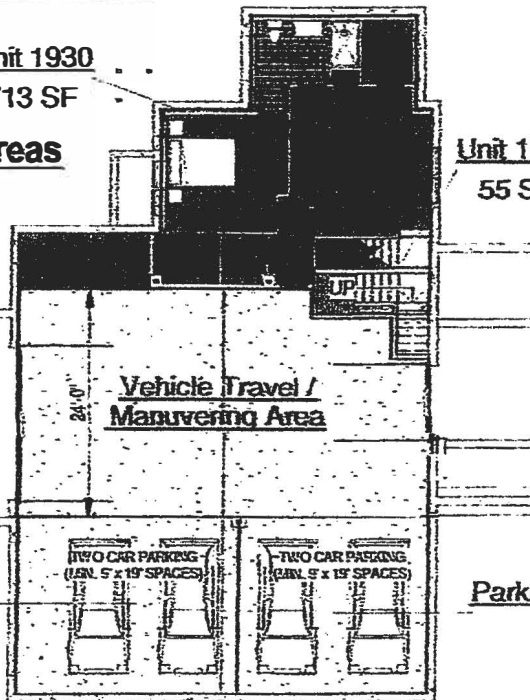
1/16" = 1'-0"

Unit 1930  
713 SF

Unit 1932  
55 SF

1930-1932

NOTE - PARKING IS COMPLIANT WITH NEWTON ZONING 3.4.4 (F) WHICH ALLOWS FOR 500 SF PER UNIT FOR GARAGE PARKING AND A MAX OF TWO CARS PER UNIT.



Parking Area (1930)  
404 SF

Parking Area (1932)  
347 SF

### 3.4.4. Garage Design Standards

#### A. Applicability

Garage Design Standards apply in all Residence Districts

#### B. Definitions

4' ABOVE GRADE

1. **Garage.** An attached or detached building, or portion of a building, that is able to be accessed by an automobile or is used or intended to be used primarily for the storage or parking of 1 or more automobiles. A detached Garage is an Accessory Building (See-Sec. 3.4.3.)
2. **Front Facing Garage.** A Garage with a Garage Door or Doors facing the Primary Front Lot Line at an angle between 0 and 59 degrees perpendicular to the Primary Front Lot Line. The

Front Lot Line at the midpoint of the Primary Front Lot Line. If there is a curve at the midpoint, the angle shall be measured between the Garage Door or Doors and a line tangent to the curve at the midpoint of the Primary Front Lot Line.

SI  
E

3. **Side Facing Garage.** A Garage with a Garage Door or Doors facing the Primary Front Lot Line at an angle between 60 and 90 degrees. The angle shall be measured between the Garage Door or Doors and a line parallel to the Primary Front Lot Line at the midpoint of the Primary Front Lot Line. If there is a curve at the midpoint, the angle shall be measured between the Garage Door or Doors and a line tangent to the curve at the midpoint of the Primary Front Lot Line.

## ARGUMENT

- The garage ordinance was initially passed and finally adopted to deal with the visual impact of above grade garages.
- Concern with how front facing garages present to the street (Snout-Houses”)
- Garages should not overwhelm the Home’s front façade. Hence a relative size limitation was adopted.
- Specifics about garage design dealt with height and setback.
- Garage size considered in context of the above grade massing of the building.
- Above grade parking curb cuts (2): dangerous & aesthetically degrading