



## Zoning & Planning Committee Agenda

### City of Newton In City Council

Monday, July 22, 2024

7:00 pm  
Room 204

The Zoning and Planning Committee will hold this meeting as a hybrid meeting on Monday, July 22, 2024 at 7:00 PM that the public may access in-person or virtually via Zoom. To attend this meeting via Zoom use this link: <https://newtonma-gov.zoom.us/j/83458529152> or call 1-646-558-8656 and use the following Meeting ID: 834 5852 9152.

#### Item Scheduled for Discussion:

- #286-24 Appointment of Timothy LeBlanc to the Newtonville Historic District Commission**  
HER HONOR THE MAYOR appointing Timothy LeBlanc, 33 Woodland Road, Auburndale as a member of the Newtonville Historic District Commission for a term of office set to expire on August 12, 2027. (60 Days: 09/06/2024)
- #287-24 Appointment of Nancy Greenberg to the Chestnut Hill Historic District Commission**  
HER HONOR THE MAYOR appointing Nancy Greenberg, 33 Woodland Road, Auburndale as a member of the Chestnut Hill Historic District Commission for a term of office set to expire on August 12, 2027. (60 Days: 09/06/2024)
- #266-24 Appointment of David Boronkay to the Newton Upper Falls Historic District Commission**  
HER HONOR THE MAYOR appointing David Boronkay, 187 Melrose Street, Auburndale as an Alternate member of the Newton Upper Falls Historic District Commission for a term of office set to expire on July 8, 2027. (60 Days: 08/16/2024)

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The location of this meeting is accessible and reasonable accommodations will be provided to persons with disabilities who require assistance. If you need a reasonable accommodation, please contact the city of Newton's ADA Coordinator, Jini Fairley, at least two business days in advance of the meeting: [jfairley@newtonma.gov](mailto:jfairley@newtonma.gov) or (617) 796-1253. The city's TTY/TDD direct line is: 617-796-1089. For the Telecommunications Relay Service (TRS), please dial 711.

- #285-24 Appointment for Ed Olhava to the Community Preservation Committee**  
HER HONOR THE MAYOR appointing Ed Olhava, 11 Scarsdale Road, Newton as a member of the Community Preservation Committee for a term of office set to expire on August 12, 2027. (60 Days: 09/06/2024)
- #76-24(3) Discussion and possible amendments to change how building height is measured**  
ZONING & PLANNING COMMITTEE requesting discussion and possible amendments to Chapter 30, Zoning to require that building height is measured from original grade instead of finished grade.  
**Zoning & Planning Held 8-0 on 05/13/24**  
**Zoning & Planning Held 4-0-3 (Councilors Oliver, Wright and Baker Abstained) on 06/10/24**
- #85-24 Request for discussion and possible amendments to enhance the preservation of existing homes.**  
COUNCILORS BAKER, OLIVER, MALAKIE, KALIS, GETZ, LUCAS, LOBOVITS, AND WRIGHT requesting a discussion and possible amendments to Chapter 30 Zoning or other City Ordinances to enhance the preservation of existing homes over their replacement by larger and more expensive structures.  
**Zoning & Planning Held 7-0 on 02/15/24**  
**Zoning & Planning Held 6-0 (Councilor Albright Not Voting) on 03/11/24**  
**Zoning & Planning Held 8-0 on 04/08/24**  
**Zoning & Planning Held 8-0 on 05/13/24**
- #41-24 Amend the setbacks in the MR zones to encourage preservation of existing buildings**  
COUNCILORS ALBRIGHT, DANBERG, KRINTZMAN, AND LEARY seeking a discussion with the Planning Department to consider ordinance amendments that would revise the metrics in the multi-residence (MR1, MR2 and MR3) zones, to regulate the size of new buildings better, enable a wider range of housing options close to public transit, and better incentivize preservation and renovation of existing housing stock.  
**Zoning & Planning Held 7-0 on 02/15/24**  
**Zoning & Planning Held 6-0 (Councilor Albright Not Voting) on 03/11/24**  
**Zoning & Planning Held 8-0 on 04/08/24**  
**Zoning & Planning Held 8-0 on 05/13/24**

**Chair's Note:** *William Ferguson, Co-Director of Sustainability, will provide the Committee with an update on the development of BERDO in response to the public comments received in order to prepare the Committee for a vote on the item in the fall. Please be prepared with any questions for him so that we can have any last issues resolved by September when the full Council should be available to act on the Committee recommendation.*

**#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) (Councilor Krintzman Not Voting) on 06/10/24**

**Respectfully Submitted,**

**R. Lisle Baker, Chair**



Ruthanne Fuller  
Mayor

City of Newton, Massachusetts  
Office of the Mayor

**#286-24**

Telephone  
(617) 796-1100  
TDD/TTY  
(617) 796-1089  
Email  
rfuller@newtonma.gov

July 1, 2024

Honorable City Council  
Newton City Hall  
1000 Commonwealth Avenue  
Newton, MA 02459

To the Honorable City Councilors:

I am pleased to appoint Timothy LeBlanc of 33 Woodland Road, Auburndale as an Alternate member of the Newtonville Historic District Commission. Timothy LeBlanc's term of office shall expire on August 12, 2027 and the appointment is subject to your confirmation.

Thank you for your attention to this matter.

Warmly,

Ruthanne Fuller  
Mayor

# Application Form

## Profile

Timothy \_\_\_\_\_ J \_\_\_\_\_ LeBlanc \_\_\_\_\_  
First Name Middle Initial Last Name

\_\_\_\_\_  
Email Address

33 Woodland Rd \_\_\_\_\_  
Home Address Suite or Apt

Auburndale \_\_\_\_\_ MA \_\_\_\_\_ 02466 \_\_\_\_\_  
City State Postal Code

## What Ward do you live in?

Ward 2

\_\_\_\_\_ \_\_\_\_\_  
Primary Phone Alternate Phone

Waters Corporation \_\_\_\_\_ Principal Software Engineer \_\_\_\_\_  
Employer Job Title

## Which Boards would you like to apply for?

Auburndale Historic District Commission: Submitted

## Ethnicity

Caucasian/Non-Hispanic

## Gender

Male

## Interests & Experiences

Please tell us about yourself and why you want to serve.

### Why are you interested in serving on a board or commission?

As an old house enthusiast, I find immense joy in the art of restoration and educating the public on the importance of preservation. Historical houses anchor us to our surroundings. They provide a sense of continuity in a rapidly changing world. Each historical house represents a unique architectural style and craftsmanship. From Victorian mansions to humble cottages, they showcase the artistry of their builders. By appreciating and protecting these structures, we celebrate the diversity of design and construction techniques across different eras. I want to be involved in the work this commission performs and I think I can add value

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Upload a Resume

## Personal Summary

2022 – 2023 Newtonville area Council member.  
Felicitate logistics on Newtonville village day on 2022-2023

## Experience

### Waters Corporation – Principal Software Engineer

March 2018 to Present

- Served as a lead Architect and product manager of a framework to deliver CI/CD
- Designed a web UI and an API interface to access microservices, web services, cloud services, and a client.
- Develop in Python, with knowledge of web frameworks such as Django and Flask
- Interact with AWS and API development
- Designed schemas and database implementation
- Programmed in SQL (Oracle, Postgress, SQLite, and MySQL)
- Use design patterns, data structures and algorithms to develop solutions and consistent standards
- Support various groups (Development, Evaluation, etc.) with build issues, product installation issues and daily usage of Atlassian
- Believe in Test-Driven Development (TDD) and coding in a way that is simple to understand, extend, and manage

### DealerScience - Manager of Software Engineering

January 2017 to March 2018

- Oversaw and coordinated developers, resources, and processes required to deliver new software
- Upgraded existing products
- Architected and developed a testing/QA framework to manage quality within our product.
- Automated test set generation to accelerate the acceptance of data streams

### EMC - Principal Software Quality Engineer

July 2015 to July 2016

- Researched open-source solutions that would provide equivalent testing coverage as our in-house tools for testing storage arrays
- Developed an agnostic approach for selecting the best IO tool for a given set of IO requirements
- Maintained a set of storage devices by updating firmware or software as required by our build process
- Provided all administrative requirements on the set of storage devices assigned to me. Administrative tasks included building virtual hosts, storage arrays, configuring iSCSI interfaces, and switch configurations.

### MillwardBrown, Senior Quality Assurance Engineer

2013 to 2015

- Developed python scripts to build out a set of QA tools. Which included automaton, complex test data generators, and basic QA verification.
- Used Python, Bash, Awk, Hadoop, Hive, MySql, Avro

### IBM – Software Engineer SWG – Cloud Development

- Enhanced a web interface for an application to manage Cloud resources
- Orchestrated Cloud resources using Streams, InfoSphere, and BigData
- Used Java, JavaScript, Json, Dojo, and REST to design feature flow
- Designed and implemented a program to manage the data transferring of segments of work to and from an Orchestration engine within a cloud environment (Java, shell script)
- Designed and implemented a lifecycle process to handle process events
- Managed a custom project onsite to analyze all cell phone records for the central North America.
- Performed ETL operations on that dataset and coauthored an IBM Research document on the findings
- Assisted the Technical Solution Architect to develop an importing tool to import XBRL records of financial information on all publicly traded companies
- Worked with Java, XML, XPATH, and XSLT transformations to create a solution to meet the Architects requirement

## Oracle Corporation – Senior Instructor

2006 to 2008

- Delivered Instructor led training at Oracle University Area for the technical areas of SQL, PLSQ, XML, and Database Administration

## Relational Courseware, Inc./ Gartner, IBM - Manager of Tools and Architecture

1993 to 2000

- Designed the architecture for a commercial multimedia education application that compiled and displayed computer-based training materials
- Became the core competency for RCI,GGL and Netg which had over 240 titles developed within its framework.
- Became the second leading Computer Based Training product in the country.
- Included a large customer base - Oracle, Price Waterhouse's SAP curriculum, First Class Systems, Mindware, and Platinum Education, General Electric.

## Education

### Northeastern University, College of Computer Science, Boston, MA

Bachelor of Science in Computer Science

### Professional Certificates

Oracle PL/SQL Developer Certified Associate

### Other Courses

- IBM Cognos 8 SDK for Developers
- Oracle Database 11g: Administration Workshop II
- Oracle Database 11g: Administration Workshop I
- Oracle 10g: Data Warehousing Fundamentals
- Oracle 10g: XML Fundamentals
- Oracle BI Publisher 10g: Fundamentals
- Oracle Database 10g: Advanced PL/SQL
- Oracle Database 10g: Intro to SQL/PLSQL
- Oracle Database 10g + 11g: Program with PL/SQL
- Java for Distributed Computing
- Java Programming



Ruthanne Fuller  
Mayor

**City of Newton, Massachusetts**  
Office of the Mayor

**#287-24**

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Email  
rfuller@newtonma.gov

July 1, 2024

Honorable City Council  
Newton City Hall  
1000 Commonwealth Avenue  
Newton, MA 02459

To the Honorable City Councilors:

I am pleased to appoint Nancy Greenberg of 33 Woodland Road, Auburndale as an Alternate member of the Chestnut Hill Historic District Commission. Nancy Greenberg's term of office shall expire on August 12, 2027 and the appointment is subject to your confirmation.

Thank you for your attention to this matter.

Warmly,

Ruthanne Fuller  
Mayor

## Application Form

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### Profile

Nancy \_\_\_\_\_ H \_\_\_\_\_ Greenberg \_\_\_\_\_  
First Name Middle Initial Last Name

\_\_\_\_\_  
Email Address

33 Woodland Rd \_\_\_\_\_  
Home Address Suite or Apt

Auburndale \_\_\_\_\_ MA \_\_\_\_\_ 02466 \_\_\_\_\_  
City State Postal Code

### What Ward do you live in?

Ward 2

\_\_\_\_\_  
Primary Phone

\_\_\_\_\_  
Alternate Phone

Oracle Corporation \_\_\_\_\_ Senior Director, Database  
Employer Job Title  
Cloud Development

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### Which Boards would you like to apply for?

Auburndale Historic District Commission: Submitted

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### Ethnicity

Caucasian/Non-Hispanic

### Gender

Female

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### Interests & Experiences

Please tell us about yourself and why you want to serve.

**Why are you interested in serving on a board or commission?**

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I am interested in preserving old home architecture. It was one of the primary reasons that we moved into the Auburndale Historic District because we believe in maintaining, preserving, and building community/awareness for these old homes. I have a passion for old homes. I have a lot of knowledge on old homes and how to maintain/fix them. I have restored 3 homes in Newton. The last one was featured on the Historic Homes Tour (2023) in West Newton/Newtonville. I believe in being active in the community. Prior to moving into Auburndale, I was technically in Newtonville and served as a board member for the Neighborhood area council. When we moved, we had to resign, as only residents of that village are accepted. However, I am still a part of the planning committee for the Newtonville Village day (scheduled for Sep 29th this year). I'm excellent at running meetings, planning agendas, following up, note taking, building consensus, and asking the right questions. I will be a good and productive member of the Auburndale Historic District Commission. Thank you for considering me.

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Upload a Resume

**OBJECTIVE**

To use my vast management, team building, community building, and meeting facilitator skills as a productive and engaging board member for the Auburndale Historic District Commission.

**CONTACT**

- [REDACTED]
- [REDACTED]
- 33 Woodland Road, Auburndale, MA 02466

**EDUCATION**

- University of Massachusetts, Amherst - BS
- Boston University - MS

**SKILLS**

- Training design
- User research
- Usability testing
- Project management
- People management

# Nancy Greenberg

I am passionate about creating content for customers to adopt Oracle technology. I manage a large team and I always strive to engage them to create content that informs and delights our customers. I am a team builder that goes beyond my direct team. I build consensus and improve quality and productivity.

**EXPERIENCE****SENIOR DIRECTOR, USER ASSISTANCE DEVELOPMENT**

ORACLE, INC  
Jan 2023 - current

Manage and mentor a team of 35 developers to design, build, and deliver quality customer facing training and documentation. Work closely with multiple teams, building rapport and teamsmanship. Plan, facilitate and manage meetings with multiple stakeholders. Create vision plans for corporate growth.

**DIRECTOR, USER ASSISTANCE DEVELOPMENT ORACLE, INC**

Aug 2007 – Dec 2022

Manage a team and oversee the development of user assistance assets, including, [documentation sets](#), [LiveLab tutorials](#), Instructor Led training courses, eLearning courses, Oracle by Example Tutorials, moocs, and recorded demonstrations

**SENIOR CURRICULUM MANAGER ORACLE, INC**

Jun 2009 – Mar 2012

Managed and oversaw the day to day operations for the Database Application Development curriculum team. Created curriculum plans and oversaw the development of instructor led training, on-line self-studies, Oracle by Example tutorials, and demonstrations.

**SENIOR CURRICULUM MANAGER** ORACLE, INC

Jun 2009 – Mar 2012

Managed and oversaw the day to day operations for the Database Application Development curriculum team. Created curriculum plans and oversaw the development of instructor led training, on-line self-studies, Oracle by Example tutorials, and demonstrations.

**CURRICULUM MANAGER** ORACLE, INC

Oct 2007 – Jun 2009

Filled in for the Curriculum Manager who was on leave and was quickly placed into the position permanently. Managed and mentored a team of curriculum developers. Managed performance and yearly appraisals. Oversaw day to day operations. Facilitated 1 on 1 meetings with directs every week, as well weekly team meetings.

**CURRICULUM DEVELOPER** ORACLE, INC

Jan 1999 – Oct 2007

Developed curriculum for the various Oracle Database Application technologies. Worked my way up from Curriculum Developer, to Senior Curriculum Developer, to Senior Principal Curriculum Developer, to Consulting Curriculum Developer. Filled in for various curriculum managers while they were on leave. Managed and built the SQL and PL/SQL curriculum. Wrote certification exam questions for the SQL and PL/SQL areas.

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**OTHER RELATED EXPERIENCE**

- Newtonville Area Council Member – Secretary (until July 2023)
- Newtonville Village Day Planning Committee (ongoing)



Ruthanne Fuller  
Mayor

City of Newton, Massachusetts  
Office of the Mayor

**#266-24**

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rfuller@newtonma.gov

June 10, 2023

Honorable City Council  
Newton City Hall  
1000 Commonwealth Avenue  
Newton, MA 02459

To the Honorable City Councilors:

I am pleased to appoint David Boronkay of 187 Melrose Street, Auburndale as an Alternate member of the Newton Upper Falls Historic District Commission. David Boronkay's term of office shall expire on July 8, 2027 and the appointment is subject to your confirmation.

David Boronkay currently serves on the Auburndale Historic District Commission. He will resign from Auburndale Historic District to serve his first term on Newton Upper Falls Historic District.

Thank you for your attention to this matter.

Warmly,

Ruthanne Fuller  
Mayor

**Application Form**

**Profile**

David	P	Boronkay
<small>First Name</small>	<small>Middle Initial</small>	<small>Last Name</small>

[Redacted] \_\_\_\_\_  
Email Address

187 Melrose Street	_____
<small>Home Address</small>	<small>Suite or Apt</small>

Auburndale	MA	02466
<small>City</small>	<small>State</small>	<small>Postal Code</small>

**What Ward do you live in?**

Ward 4

[Redacted]	[Redacted]
<small>Primary Phone</small>	<small>Alternate Phone</small>

Slocum Hall Design Group, Inc	Owner/Principal
<small>Employer</small>	<small>Job Title</small>

**Which Boards would you like to apply for?**

Auburndale Historic District Commission: Appointed

**Ethnicity**

None Selected

**Gender**

None Selected

**Interests & Experiences**

Please tell us about yourself and why you want to serve.

**Why are you interested in serving on a board or commission?**

I have great respect for historic architecture, and those who are passionate about preserving it. I have been designing and renovating homes around Newton for the past 20 years, many of which were historic properties with sympathetically designed additions to blend the old and the new. As someone who cares deeply about our city and the beautiful older buildings found within it, I would like to lend my time and expertise to ensure that Newton continues to be developed in a way that honors its rich architectural history. Since I have been self-employed for the better part of twenty years, I do not have an actual resume to share, so I have clipped my LinkedIn profile to show all the pertinent information.

## Experience



### Principal

Slocum Hall Design Group

Dec 2012 - Present 10 years 7 months

Watertown, MA

David Boronkay is Principal, founder and owner of Slocum Hall Design Group, an architectural firm specializing in making homes beautiful and functional for modern living while also providing an unrivaled level of detail and oversight through the construction process. David's background in high-end residential architecture and design - along with the support of his partners and associates, enables Slocum Hall Design to see a project from the initial concept, overseeing and managing construction, through the interior finish selection process.

Show less ^



### Owner

Kantaros Boronkay and Associates

Feb 2008 - Dec 2012 4 years 11 months



## Owner

DPB Design, LLC

Jan 2000 - Feb 2008 8 years 2 months

Focus on High-End residential design.



## Architectural Designer

Trapani + Associates, Inc.

Sep 1999 - Nov 2002 3 years 3 months



## Designer

MKDA

1998 - 1999 1 year

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## Education



## Syracuse University

Bachelor of Science (B.S.) Architecture and Environmental Design

1994 - 1998

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Ruthanne Fuller  
Mayor

City of Newton, Massachusetts  
Office of the Mayor

**#285-24**

Telephone  
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(617) 796-1089  
Email  
rfuller@newtonma.gov

July 1, 2024

Honorable City Council  
Newton City Hall  
1000 Commonwealth Avenue  
Newton, MA 02459

To the Honorable City Councilors:

I am pleased to appoint Ed Olhava of 11 Scarsdale Road, Newton as a member of the Community Preservation Committee who demonstrates expertise in outdoor recreation. Ed Olhava's term of office shall expire on August 12, 2027 and the appointment is subject to your confirmation.

Thank you for your attention to this matter.

Warmly,

Ruthanne Fuller  
Mayor

# Application Form

## Profile

Ed \_\_\_\_\_ Olhava \_\_\_\_\_  
 First Name Middle Initial Last Name

\_\_\_\_\_ \_\_\_\_\_  
 Email Address

11 Scarsdale Rd \_\_\_\_\_  
 Home Address Suite or Apt

Newton \_\_\_\_\_ MA \_\_\_\_\_ 02460  
 City State Postal Code

## What Ward do you live in?

Ward 2

\_\_\_\_\_ \_\_\_\_\_  
 Primary Phone Alternate Phone

IFM Therapeutics \_\_\_\_\_  
 Employer Job Title

Preclinical DevelopSenior  
 Vice President, Preclinical  
 Development

## Which Boards would you like to apply for?

Community Preservation Committee: Submitted

## Ethnicity

Caucasian/Non-Hispanic

## Gender

Male

## Interests & Experiences

Please tell us about yourself and why you want to serve.

### Why are you interested in serving on a board or commission?

I am interested in serving on the Community Preservation Committee in order to help select and fund projects that will enhance our city. If appointed, as the mayoral appointee for recreation, I will focus on this aspect for any projects I review, but will also consider the impact of a project on open space, community housing and historic resources regardless of any or no overlap with recreation.

[Olhava\\_resume\\_volunteer\\_2024-06.pdf](#)

Upload a Resume

Ed Olhava

**SUMMARY**

I am interested to participate in the Community Preservation Committee in order to aid in prioritizing, selecting and funding projects aimed at enhancing our city. My interest stems from my active involvement in Bike Newton, where I have served as President since 2020. As president, I have coordinated and/or led our group rides as well as keeping our ~2000 members informed of cycling-related improvements being planned. Through Bike Newton, I have engaged with a diverse array of Newton residents, discussing not only biking but also broader issues and concerns, such as outdoor recreation opportunities and how we can recognize and preserve the rich history of Newton. Furthermore, my participation in our rides gives me a chance to see the city on the ground, and get feedback from our fellow riders on local projects as they are implemented.

In my professional life I work as a scientist in the biotech sector. I analyze data assess risk within research programs in order to prioritize the best projects for further research and funding. Typically, I manage budgets of \$20 million a year per project, spanning 3-5 years. In these efforts I have led the development of two cancer drugs and multiple drugs in clinical trials.

**VOLUNTEER EXPERIENCE****BIKE NEWTON****President****2020 – present****2014 – present**

Since becoming President of Bike Newton in 2020, I have organized/led our group rides, including Tour de Newton 2021. The latter included fundraising to pay for the event and coordination with the city to plan the routes and organize the finish at City Hall. Through our email list I also summarize any planned improvements throughout Newton that our members may be interested in, and encourage them to advocate during the decision/approval process. For example, I recently kept our residents informed of the progress on the Washington St Pilot. Finally, I attend city meetings to speak as President of Bike Newton to advocate for any project which will include safer cycling accommodations.

**Volunteer****2014 – 2020**

During this period I was a frequent volunteer on group rides as well a staff member at the Bike Newton Booth for village fairs, school safety demonstrations, and other city activities such as Earth Day.

**PROFESSIONAL EXPERIENCE****IFM THERAPEUTICS, Boston, MA****Senior Vice President, Preclinical Development****2017 – present****2016 – present****Senior Vice President, Drug Discovery****2016 – 2017****THIRD ROCK VENTURES, Boston, MA****Strategic Advisor****2015 – 2016****EPIZYME, INC., Cambridge, MA****Director, Preclinical Development****2013 – 2015****2008 – 2015****Associate Director, Preclinical Development****2011 – 2013****Senior Manager, Molecular Discovery Operations****2010 – 2011****Scientist/Program Manager, Medicinal Chemistry****2008 – 2010****MILLENNIUM PHARMACEUTICALS, Cambridge, MA****Scientist II, Oncology Medicinal Chemistry****2005 – 2008****2003 – 2008****Scientist I, Oncology Medicinal Chemistry****2003 – 2005****EDUCATION****Ph.D., Chemistry, Harvard University, Cambridge, Massachusetts****2003****A.M., Chemistry, Harvard University, Cambridge, Massachusetts****1999****B.S., Chemistry, with Honors, Stanford University, Stanford, California****1996**

**MEMORANDUM**

**Date:** July 19, 2024

**To:** Zoning & Planning Committee

**From:** William Ferguson, Co-Director of Sustainability

**Re:** #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.

Dear Councilors,

Below is a list of items that we are working on to prepare for the September ZAP meeting. Our work on these items are mainly to provide answers and insights to questions that were raised during the June 10th Public Hearing which you conducted. Many of the questions raised in the hearing were also raised by Greg Reibman, President and CEO of the Charles River Chamber, in a letter to you following the hearing on June 11th. I have attached my answers to that letter which I sent directly to you on June 25th. I think Mr. Reibman's questions and our answers are very informative and helpful to the process.

We would like to make a presentation at the September meeting that answers questions raised on June 10th with a focus on case studies, City staffing questions, assistance that will be available to building owners from the City, State and utilities, the basics on how to set up an account in Energy Star Portfolio Manager, and basics how to plan an approach for BERDO compliance by building owners.

Below are the things we are working on now for that purpose.

1. 181 Lexington case study. This is the 30 unit apartment building that we have been developing a case study on in conjunction with the owner since Oct. 2023. The owner, Dante Capasso, and Halina Brown each presented a version of the case study at the June 10th hearing using incomplete information. I am working on getting the rest of the information needed for the most accurate and factual case study possible. The specific data that is needed to complete this case study are:

a. Use my contacts at National Grid to determine the utility incentive amount. I have been able to complete this task since the June 10th hearing.

b. Working with Mr. Capasso to help him prepare and submit a work order application to Eversource to determine the cost of an electric service upgrade. Mr. Capasso has submitted the application, and we are awaiting Eversource's response.

2. Case studies: We expect to present four case studies at the September ZAP meeting including 181 Lexington, a church, and two City of Newton buildings that have been electrified.

I have also asked NGrid, Eversource, Mitsubishi, Daikin, Mass CEC and Boston BERDO for case studies and/or project cost information and may add some information to our presentation if any is provided.

3. I have obtained information from Hannah Payne, the head of Boston BERDO on their staffing and consultant budget. This information is addressed in my attached response to the Chamber letter.

4. I drafted a response to the letter sent to Chair Baker and Vice Chair Oliver by Greg Reibman, President and CEO of the Charles River Regional Chamber. This letter was sent by Mr. Reibman the day following the June 10th hearing and raises a number of questions about the BERDO program. I sent answers to you previously. An italicized copy of my response is attached.

5. I have requested information on the budgets for Statewide utility commercial and multi-family energy efficiency and electrification programs under the next three-year plan from my contacts at NGrid and Eversource. These are substantial resources from the utility and Mass Save programs that will be available to assist building owners to implement BERDO. I have been working closely with the utilities on BERDO coordination with these programs. I will be presenting BERDO to their project expeditors at a September 16th meeting. Project expeditors are vendors who work for utilities delivering various energy efficiency and electrification services to customers.

6. Chair Baker has specifically requested information on how churches can comply with BERDO. Halina Brown has completed a report on the 1st Unitarian Universalist Church, 1326 Washington St.

7. I Met with the MA Dept. of Energy Resources on the Large Building Energy Reporting requirement. This is a legislatively mandated requirement for utilities to report energy use data for all buildings greater or equal to 20,000 square feet. The first report will be publicly available in October 2025. This information will be very helpful to building owners to fulfill their BERDO reporting requirements.

8. I have asked Synapse (our consultant) to review the transcript of June 10th hearing and have asked Synapse to prepare a draft Q&A for my review. This will be available soon and provided to you.

9. We are reviewing case study information on Auburndale library and NECP for presentation at the September ZAP meeting.

10. We are preparing a table on the BERDO compliance status for several buildings for which we have information. This table will illustrate that many buildings are initially in compliance.

11. We are working with NHA, NGrid and ABCD on developing a heat pump project with costs and incentives at a 12- unit affordable apartment building at the Horace Mann complex. This will help determine the scope of incentives available for affordable housing heat pump projects.

I look forward to seeing you on Monday, July 22nd to continue this process.

William H. Ferguson  
Co-Director of Sustainability



June 11, 2024

Dear Chairman Baker and Vice Chair Oliver:

Thanks very much for the opportunity to share our comments Monday, June 10 regarding the proposed BERDO ordinance now before Zoning & Planning.

As I noted in my opening comments, residents and businesses share a collective responsibility to reduce emissions and move away from fossil fuels. We respect and we recognize the urgency. We also have the highest respect for the Citizens Energy Commission that helped shape this proposal and look forward to working with you and the council on developing policies and programs aimed at curbing emissions and fossil fuel consumption.

However, it's important that the council and the city understand that for many property owners and tenants, BERDO will be both hard to execute and expensive. It's going to require substantial resources and support systems from the city too, far more, we believe, than are budgeted or envisioned.

*City's Response: The City's resources will be supplemented by resources available from the utilities and the State. These resources include billions of dollars under the utility and Mass Save programs for technical support, incentives and financing. The City has been working in close coordination with the utilities as it has developed the Newton BERDO.*

*For reporting assistance, the State's Large Building Energy Reporting program requires utilities to report electric use and gas use for all buildings 20,000 square feet or greater. The first energy use reports under this program will be available in October 2025 and we expect that these reports will be helpful to building owners to obtain needed energy use data. However, please note that, a single January electric bill and gas bill for each account will provide the 12 months of use data for the prior year needed to complete reporting in Energy Star Portfolio Manager. The City will provide training and support for the use of ESPM.*

*Note that in Boston there are 9 FTEs handling 5500 buildings. Boston's reporting is more complicated because electricity is included in their emissions standard, (not so in Newton) and they also report water use (not so in Newton). Newton will have one FTE for 413 buildings. Boston has 1 FTE per 611 buildings with a more complicated reporting requirement.*

BERDO will drive up rents. It will likely make some properties obsolete, including possibly some houses of worship, some nonprofits, and some of our older, naturally affordable buildings that are homes to residents today and/or to small businesses.

*City's Response: Buildings that heat using fossil fuels will become undesirable in the market. If building owners do nothing to decarbonize their buildings by 2050 they will be obsolete with or*

*without BERDO. BERDO will provide the framework and the incentive to keep these buildings from becoming obsolete.*

We also are concerned that the ordinance, as written, leaves many unanswered questions. We respectfully request answers to the following:

*The City is providing answers to these questions below. We appreciate that Mr. Reibman has taken the trouble to raise these questions and that Councilors Baker and Oliver have given the City the opportunity to respond.*

- How many FTEs will the city be dedicating to BERDO administration and support in the upcoming 12 months and how many FTEs will be dedicated to this program by 2026 when Tier 2,3 and 4 properties will need reporting assistance? What if it's not sufficient?

*City's Response: The City has budgeted for consultants for FY2025. In FY2026 the City will assign an FTE. The first reports are due for 47 buildings on Sept. 15, 2025. We will use the most efficient combination of consultants and City staff needed to get the job done effectively.*

*It is important to note that under the Commonwealth's Large Building Energy Reporting program (Section 41 of Ch. 179 of the Acts of 2022) utilities will be required to report annually to the State the energy use for all buildings over 20,000 square feet. These reports will be due in March 2025 and available in October 2025. The City is coordinating with the State DOER on this reporting program. This will greatly simplify reporting by building owners. We will also set up and provide training and reporting assistance during this first period which will also be available to the remaining buildings that are due to report on September 15, 2026. Note that BERDO does not impose penalties or fines until the third year of the emissions standard for each Tier. This leaves ample time for building owners to develop the capacity to submit reports before fines become a factor.*

- What will the cost be to Newton taxpayers to administer this program and does the administration anticipate seeking an override to absorb the added costs?

*City's Response: We estimate the total annual cost to be up to \$290,000/yr. The administration does not anticipate seeking an override for this purpose.*

- How much should property owners expect to pay for the required 3<sup>rd</sup> party verifications?

*City's Response: It cost the City \$3,000 to have a consultant enter 30 City owned buildings into the Energy Star Portfolio Manager. The City provided the energy use data and building data for each building. There may be some economies of scale that resulted in an average cost per building of \$100 for the City. In general, we would not expect it to cost building owners more than \$500-\$1,000 per building depending on size of building, number of meters, and availability of building information; this is the median cost range reported by third-party verifiers in a recent RFI (Request For Information) issued by the City of Boston (note that Boston's reporting requirements are more complex than Newton's). Owners with more buildings will probably get some economies of scale such as the City did. Verifiers are only needed the second year and every 5 years after that. Also, beginning in October 2025, the state will be publishing energy use data for all buildings over 20,000 square feet. (This is a requirement of State law, Section 41 of Chapter 179 of the Acts of 2022.) The City is working with Mass DOER on the regulations for this program to try to coordinate it with Newton BERDO and help simplify reporting requirements for Newton building owners.*

- What will the appeal process be if an owner disagrees with any ruling of the sole city employee charged with managing this program? What checks and balances will be in place?

*City's Response: The BERDO ordinance will be implemented using objective calculations and criteria. The ordinance does not provide for an administrative appeal process.*

- The proposal includes a general list of how funds from fines could be spent. Can they instead be dedicated to helping property owners meet BERDO milestones?

*City's Response: Under BERDO Section 1 (f) we specifically mention that funds can be used to provide technical assistance to property owners. This section states that the fund can be used for: "Technical assistance to property owners subject to BERDO related to implementation of the requirements of this ordinance."*

*It is our plan to provide training, videos of our training posted on our website, and one-on-one assistance to property owners. We also plan on holding seminars for building owners with equipment manufacturers and other experts.*

- If an owner fails to pay fines for non-compliance and or failure to report, will those fines be tied to the owner or the asset? For example, if an asset is sold, will those fines transfer to the acquirer?

*City's Response: The owner of a building that is not in compliance with the ordinance will be responsible for all fines that have accrued, including for violations that exist when the owner acquires title to a property subject to BERDO.*

- Will there be a database published to the public so that a potential buyer will be able to include this element to the due diligence process?

*City's Response: Under BERDO paragraph (p) Disclosure, a report will be published annually on the City's BERDO website. This paragraph states: "The BERDO Administrator shall make Energy and Emissions information for Buildings available to the public on the City's website no later than November 30 of every year, except for 2025, in which it shall make such information available to the public no later than December 15, 2025."*

- Section (o) Obligation to Request and Report Information – what leverage does the Owner have if the Tenant(s) disregard/neglect the owner's request for energy usage data?

*City's Response: We have been working with the utilities, as Kara Marshall of Eversource and Lori Timmerman of National Grid testified at the June 10<sup>th</sup> public hearing, to enable building owners to obtain tenant data through a utility portal set up for this purpose. Also, we expect that the State data base that will be published annually starting October 2025 will contain this data. If all else fails, Section 1 (o) 3 of BERDO requires that: "When an Owner of a Building is unable to obtain complete Energy use data due to the failure of any Tenant to report the information required, the Owner shall use values or formulas established by the BERDO Administrator to estimate whole Building Energy use."*

- Will Newton work with the utility companies to enable the ownership/management group to acquire the necessary data required for reporting in the event that a tenant fails to report? What legal remedies exist if the tenant is uncooperative?

*City's Response: The City has been working with both Eversource and National Grid to provide access to use data by the building owners. They have agreed to provide training to building owners and we will make arrangements with them for that training. As*

*mentioned in the previous bullet, the City will provide values or formulas to the owner for tenant data if all else fails.*

*The answer to the previous bullet provides more information about this issue.*

- Will installation of current transducers and gas meter reads be considered acceptable forms of data collection to avert and owner's dependence on its tenant(s)? If so, a standard for metering should be developed.

*City's Response: We do not expect this to be necessary and do not encourage it. If building owners want to install metering, we can address it through regulation if necessary.*

- What are the specific conversion factors used for calculating kgCO<sub>2</sub>e/sf/yr for both electrical and gas?

*City's Response: Under BERDO Section 1 (b), electricity emissions are excluded from calculations of building emissions: "Emissions means the emission of greenhouse gases, measured in units of CO<sub>2</sub>e associated with the Energy used by a Building, excluding electricity."*

*As indicated in the ordinance language, emission factors for natural gas and other combustion fuels will be published through the BERDO regulations. The City anticipates these will be aligned with the ENERGY STAR Portfolio Manager [Greenhouse Gas Emissions Technical Reference document](#), which includes emission factors for natural gas (53.11 kilograms per million British thermal units) and other combustion fuels.*

- Can the emission standard formula be published within the ordinance, to ensure that it will not change? CapEx projects have longterm time horizons. There should be some guarantee that the targets will not suddenly change.

*City's Response: The emissions standards in the ordinance are fixed. We have no plans to change them. They cannot be changed unless an amendment to the BERDO is passed by the City Council.*

- Does the city have legal authority to impose what is essentially a carbon tax on a limited number of property owners defined only by their size?

*City's Response: BERDO is not a tax. BERDO requires emissions disclosure and performance benchmarks for properties of a certain size within the City of Newton.*

- Is the council willing to wait until the administration's case study at 181 Lexington Street is finalized and evaluated before voting on a final ordinance?

*City's Response: We don't think this is necessary but it is likely that, working with Mr. Capasso, we will have the rest of the data by September 2024.*

- We all agree about the dangers of greenhouse gas and the need to reduce fossil fuels but since this is the crisis we all can agree upon, why isn't the city proposing BERDO now on single-family homes?

*City's Response: We are starting with large buildings because it is manageable and impactful with only 293 commercial buildings accounting for 23% of the Newton's total emissions. When we add large residential buildings, it will be 413 buildings accounting for 28% of Newton's total emissions. There are over 34,000 residential units in the city including over 24,000 single family homes. Implementing a BERDO for this many buildings would be costly to manage and administer. At this time the City is encouraging*

*voluntary energy efficiency and electrification through its 4 Our Future Program and Energy Coach Program. We are always working on ways to make these programs more effective.*

BERDO will be a learning process for all of us. We urge the council to consider it carefully and diligently. We look forward to actively partnering with you and your colleagues to ensure that we get this complex ordinance right.

Sincerely,

Greg Reibman  
President & CEO  
Charles River Regional Chamber  
617-799-0550

CC: William Ferguson, Jaclyn Norton, Mayor Fuller, Barney Heath

# BERDO Compliance Case Study

## First Unitarian Universalist Society in Newton

Bob Persons & Halina Brown

Prepared for Zoning and Planning Committee of Newton City Council – July 14, 2024



The proposed Building Emission Reductions and Disclosure Ordinance (BERDO) is expected to present a challenge for building owners and managers, including houses of worship. In order to better understand how these challenges can be met, this case study examines how First Unitarian Universalist Society in Newton succeeded in reducing its greenhouse gas emissions to a level that puts it in compliance with BERDO until 2045.

### **The Building**

FUUSN was designed as a Unitarian church by noted architect Ralph Adams Cram and completed in 1906. It is listed on the National Register of Historic Places and has an historic preservation agreement administered by the Massachusetts Historical Commission. The building is in English Gothic style and is meant to look as if it had grown organically but was designed as a whole.

The original four wings of the building contain the Sanctuary, a Parish Hall, offices, a kitchen, and activity and meeting areas located around what was a central courtyard. In the 1950s, the courtyard was filled in to create classrooms, restrooms, a first-floor kitchen, and basement space which currently serves as classrooms. With the courtyard addition the

building has a total of **30,241 square feet** of conditioned space. The Society numbers approximately **400 congregants**.

The first-floor courtyard classrooms are currently rented to a preschool which also uses the adjacent kitchen, restrooms, and Parish Hall. The historic parlors on the Washington Street side are used for meeting space and the second-floor historic banquet hall is now called the HeadStart Room as a legacy of the first Newton HeadStart program once held in that space. The historic kitchen is also on the second floor, formerly accessed by a dumb waiter from the basement storage room which for some years served as Newton's food pantry. **Each of these spaces has its own specific schedule for occupancy. Some are fixed from week to week while others also host special events.**

The **original heating plant** was two coal-fired steam boilers, fed manually daily, heating the original building as a single zone. Probably around World War II the steam boilers were converted to oil firing and the steam heating system was divided into four zones with thermostat controls. The "courtyard" building was originally heated by two gas-fired, warm air furnaces serving three zones. In the 1970s insulation was added to the Parish Hall ceiling to reduce heat loss. This affected the acoustics in the hall such that the Music Director vetoed doing the same in the Sanctuary. Window air conditioners have never been used at FUUSN, due to the unique and protected nature of the windows.

### **The Process**

In the late 1990s we embarked on a program of upgrading the energy systems in the building. Our goal was to reduce the operating costs of heating and cooling, to provide year-round comfort for the occupants (such as improved heating in some offices and overall air conditioning to enable greater summer use and rentability), and to reduce environmental impacts.

The general strategy has been to:

- Introduce changes in stages. Take advantage of necessary building improvements, such as new floors or replacement of malfunctioning equipment in order to introduce energy-saving features.
- Create function-based zones with remotely accessible controls for comfortable heating and cooling during occupied periods and deep setbacks during unoccupied periods, typically 55°F for heating and 80°F for cooling. **We believe this is the improvement that most clearly accounts for our current low level of greenhouse gas emissions.**
- Deploy the most efficient technologies available. For example, replace failing air-conditioning condensers with heat pumps.

- Consistently track energy use in each zone and the building as a whole. FUUSN has been using EPA's Portfolio Manager for several years now, with use and cost data from 2013 on.
- Rely on the expertise of members of the congregation. Since the late 1990s, Bob Persons, an expert in energy technologies (and associate member of Newton Citizens Commission on Energy, and Newton Volunteer Energy Coach), has led a group of church volunteers who designed and helped with implementing the upgrades.

One of the first actions in the late 1990s was to convert the steam boilers from oil to gas firing so the two oil tanks could be removed from the former coal bin to make room for new, smaller, modular, gas-fired hot water boilers that could be staged as needed per weather conditions.

In 2001, the most problematic branch of the steam system was replaced with two gas-fired hot water boilers for the office wing radiators and radiant heat under a much-needed new floor in the Parish Hall. These boilers are 83% efficient and able to use the original flue embedded in the building's tower; condensing boilers could not be used because the required venting would conflict with the building's landmark status. Mini-split air conditioning was also added to four offices and two activity spaces, and ducted split system air conditioning added to the Parish Hall. This allowed separate control of heating and cooling in eight zones. The first attempt at automating heating and cooling scheduling consisted of an early-model PC with temperature sensing and relay boards and a Visual Basic program written by a volunteer.

The remaining steam system branches were replaced in 2006-2007 when the Sanctuary space was renovated. Four more 83% efficient gas-fired hot water boilers were added, and the steam boilers demolished to open up space for a new classroom. Eleven "hydro-air" units were added to heat and cool the three courtyard zones and the remaining portions of the original building. Each of these is connected to the new boilers for heating and to an outdoor condenser for cooling. At this point the home-made control system was replaced with 19 commercial internet-enabled thermostats. These Lightstat eStat thermostats were originally designed for retail store chains and so have a user interface that is a bit inconvenient for scheduling special events. But they are easy for any HVAC contractor to install and much less expensive than packaged building management systems from Honeywell, Johnson Controls, etc.

As a result of all these changes, FUUSN has a 19-zone system. Eleven zones are served by hydro-air units. One of these, the Parish Hall, also has cast iron radiators along the exterior wall to supplement the radiant floor and heat pump coils installed to replace AC coils that

failed. Six zones have mini-split heat pumps mainly for cooling with cast iron radiators for heating backup. A corridor zone has only radiator and one remote zone has only a heat pump. Altogether FUUSN uses 6 boilers, 11 hydro-air units with 10 AC condensers, 6 air-source heat pumps, and numerous radiators.

Currently, we are studying conversion to ground source heat pumps and phasing out the use of gas altogether.

### **The Outcomes**

The graphs below show that the Energy Use Intensity (EUI) based on electricity and gas use is 2.9 kgCO<sub>2</sub>e/ft<sup>2</sup>. 65% of that is from on-site fossil fuel use (2.0) and 35% is from electricity (0.9). If electricity is excluded, as per Newton's proposed BERDO, at 2.0 kgCO<sub>2</sub>e/ft<sup>2</sup> the building will be in full compliance until 2045 while doing nothing.

The graphs also imply that most of the declines in energy use took place before 2013. We attribute the reduction primarily to **three factors**: staged transition from steam to hot water heat, partitioning of the HVAC system into 19 zones, and deep temperature setbacks during unoccupied periods.

### **The Financials**

Detailed information about the costs of FUUSN's efficiency improvements is not available because they were subcomponents of major renovation projects that were made long ago. In any case it would be irrelevant now due to inflation and the changing market. However, three general points are relevant:

- FUUSN did not receive any state or federal incentives for this work.
- The costs were covered by the annual budgets of the church and by periodic capital campaigns, which have been part of the fiscal management of the church building since its beginnings.
- Free expertise and commitment from members of the congregation were essential for the success of the retrofit projects.

### **Lessons for houses of worship under BERDO**

The lessons from this case study for other houses of worship are:

- In buildings with a variety of space types and intermittent uses, create multiple heating/cooling zones with remotely controllable operating schedules and deep setbacks. BERDO compliance does not have to begin with costly replacement of all gas-fired heating units with air-source heat pumps.

- Put in place a point of responsibility (and appropriate training) for monitoring the functioning of the system and for tracking energy use.
- Reducing carbon emissions from an old house of worship does not have to be an unbearable financial burden if done deliberately, with a good plan, and in stages.

Newton BERDO has two central objectives: to comply with the Massachusetts legal climate obligations by reducing greenhouse gas emissions from all large buildings in Newton; to make long term multiyear energy plans by building owners a standard way of doing business. Compliance with BERDO *cannot be* achieved without such planning. The FUUSN case study is a perfect illustration. It entailed a long-term vision, three decades of gradual well-planned actions, discipline, focus, a strong support from the building occupants, and collective learning.

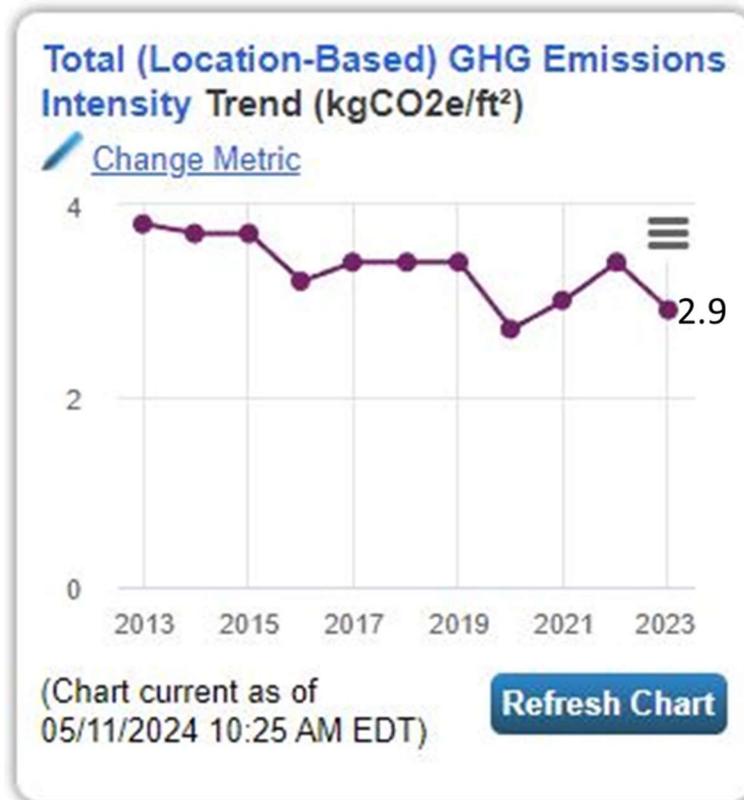


Figure 2 – Emission intensity **2.9** based on both gas and electricity uses

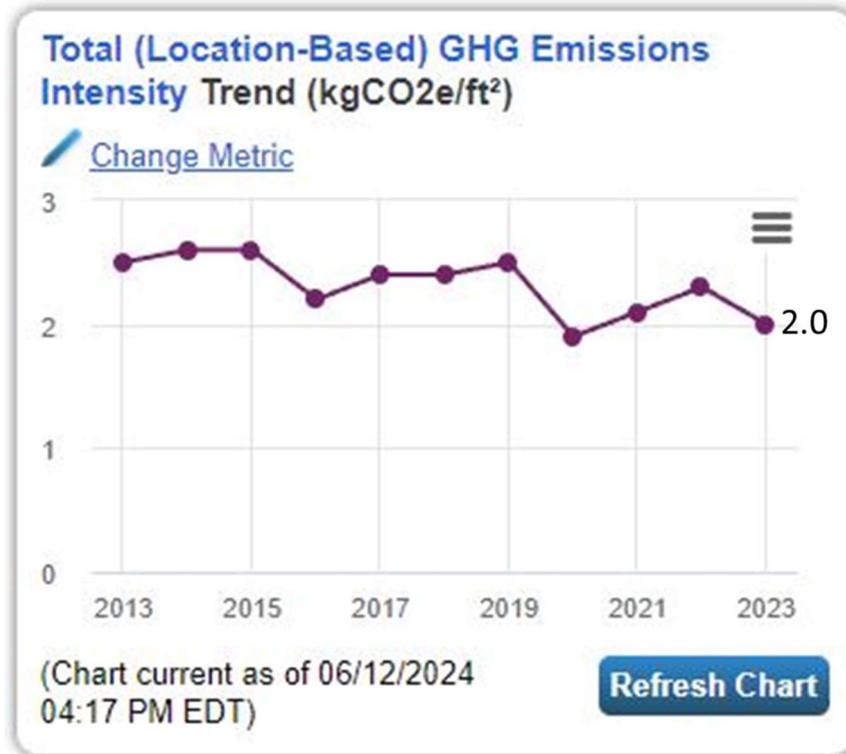


Figure 3. Emission intensity **2.0** based on gas use only

### Newton Proposed Rate of Emissions Reduction

Table 1: CO<sub>2</sub>e Emissions Standards by Building Use

Building Use	Emission standards (kgCO <sub>2</sub> e/sq. ft.)				
	Period 1 2027- 2033	Period 2 2034- 2039	Period 3 2040- 2044	Period 4 2045- 2049	Period 5 2050-
Assembly	6.1	3.7	2.3	1.1	0
Other building categories omitted for clarity.					

Table 1. Performance targets for houses of worship required by BERDO

From [City of Newton Proposed Berdo, Version: WF and PEG 5-16-24](#)

View-only link to June 25, 2024 presentation on “Greening Houses of Worship” sponsored by Green Newton and Massachusetts Interfaith Power & Light:

[https://docs.google.com/presentation/d/15\\_ddNWE5AHWtX8A85zuvwiZfJPfSDNbS/edit?usp=sharing&oid=103502109132783351555&rtpof=true&sd=true](https://docs.google.com/presentation/d/15_ddNWE5AHWtX8A85zuvwiZfJPfSDNbS/edit?usp=sharing&oid=103502109132783351555&rtpof=true&sd=true)

## APPENDIX

### Follow-Up Questions and Responses

What firing rate or tons heating are those boilers and what's the operating temperature you're running at, and that your radiators are working at?

The two boilers that enabled our first move away from steam heating are each rated 166,000 Btu/hr. The four boilers installed to complete the transition from steam to hot water heating are each rated 233,000 Btu/hr. So, the total gas input is 1,264,000 Btu/hr. The two sets of boilers operate as two separate systems, but both use an outdoor temperature reset strategy, supplying 180°F water when it's 0°F outside and 140°F at about 60°F, above which they are in warm weather shutdown mode. The point of the question is that when we convert the system to ground-source heat pumps the highest available supply water temperature at 0°F outdoors might be less than 180°F, and we may need larger hot water radiators. However, a better alternative might be to convert the radiator-heated zones to warm air heating, which can function at much lower supply temperatures.

Is building heat provided entirely or mostly from the six boilers?

While we have started installing air source heat pumps, most of the building's heat still comes from the gas-fired boilers. Part of the reason for this is that the heat pumps installed so far are not easily integrated with the existing remotely-accessible zone controls.

What is your natural gas energy use index?

For 2023, the site EUI for gas plus electricity was 50.7 kBtu/ft<sup>2</sup> per Portfolio Manager. Counting only the gas use, it was 37.6 kBtu/ft<sup>2</sup>.

Can you make any guess as to what your occupancy rate is?

See the table below for calculation of the occupancy rate. While the rate seems extremely low, there are several obvious reasons including recovery from Covid-19 membership losses and that many houses of worship have large spaces that are used for only a few hours per week.

FUUSN OCCUPANCY RATE ESTIMATE											
Winter 2023-24											
Zone	Approximate Area, SF [3]	Occupied Hours including pre-conditioning & post-purge [1]							Total	SF-Hours	
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday			
Administrator	155	11	9	11	9	11	0	7	58	8,990	
Alliance Room	770	0	0	8	5	0	7	8	28	21,560	
Classroom B-7 [2]	620	0	0	0	0	0	0	6	6	3,720	
Ctyd 1 North	2,125	18	18	18	18	18	18	14	122	259,250	
Ctyd 1 South	2,125	18	18	18	18	18	18	14	122	259,250	
Ctyd Bsmt	2,821	0	0	0	0	0	0	6	6	16,926	
Headstart Room	1,192	0	0	5	8	0	0	7.5	20.5	24,436	
Minister	268	11	0	11	11	0	0	6.5	39.5	10,586	
Narthex	784	0	0	0	0	0	0	10	10	7,840	
Membership	121	10	9	9	0	0	0	6	34	4,114	
Religious Ed	121	11	0	11	11	11	0	6.5	50.5	6,111	
Office Corridor	335	15	15	15	15	15	15	7	97	32,495	
Parish Hall	2,090	0	0	6	0	0	0	10	16	33,440	
Parlor Area	1,074	15	16	15.5	15	16	16	15	108.5	116,529	
Sanctuary	5,453	0	0	0	0	0	0	10	10	54,530	
Stage	531	0	0	0	0	0	0	9	9	4,779	
Tower Room	289	0	0	5	8	0	0	7.5	20.5	5,925	
Upper Kitchen	498	0	0	5	8	0	0	7.5	20.5	10,209	
Youth Room	531	0	0	0	0	0	0	10	10	5,310	
<b>TOTALS</b>	<b>21,903</b>										<b>885,999</b>
									SF-hours / Area / 8,760 =	<b>0.46%</b>	
Notes											
[1] This estimate counts only regular weekly schedules and excludes special events.											
[2] Includes boiler room.											
[3] Excludes former (unheated) food pantry, 2nd floor vestibule & rest rooms, Sanctuary balcony.											