



CITY OF MELROSE
APPROPRIATIONS & OVERSIGHT COMMITTEE
AGENDA • MAY 5, 2022

Council Chamber, First Floor, Melrose City Hall Committee Meeting
562 Main Street, Melrose, MA 02176

7:55 PM

I. CALL TO ORDER

Jen Grigoraitis	Chair
Leila Migliorelli	Vice Chair
Shawn M. MacMaster	
Jack Eccles	
Mark Garipay	
Maya Jamaledine	
Robb Stewart	
Manjula Karamcheti	
John Obremski	
Ryan Williams	
Christopher Cinella	President, ex officio

II. PUBLIC COMMENT

III. ORDERS

1. **ORDER-2022-106** : Authorizing a Bond under the Water Enterprise System through MWRA Local Water System Assistance Program bonds for FY2022 in the amount of Six Hundred Eighty Five Thousand Dollars (\$685,000)

Offered by: Mayor Paul Brodeur

From: City Council

ASSIGNED TO COMMITTEE

2. **ORDER-2022-108** : An Appropriation From Free Cash, Account Number 01-324001, in the Amount of Six Hundred Thousand Dollars (\$600,000) to Parks - Turf Replacement, Account Number 014753-551177

Offered by: Mayor Paul Brodeur

From: City Council

ASSIGNED TO COMMITTEE

3. **ORDER-2022-109** : Acceptance of a grant from the Massachusetts Cultural Council in the amount of \$1,500

Offered by: Mayor Paul Brodeur

From: City Council

ASSIGNED TO COMMITTEE

4. **ORDER-2022-110** : Acceptance of a MassSave Community First Partnership Award in the Amount of Twenty-Five Thousand Dollars to Support Energy Efficiency Measures for Melrose Homes and Businesses

Offered by: Mayor Paul Brodeur

From: City Council

ASSIGNED TO COMMITTEE

5. **ORDER-2022-114** : Drainage Easement Appropriation

Offered by: Mayor Paul Brodeur

From: City Council

ASSIGNED TO COMMITTEE

6. **ORDER-2022-115** : Easement Acquisition 9 Wildwood Rd.

Offered by: Mayor Paul Brodeur

Sponsored by: Mayor Paul Brodeur

From: City Council

ASSIGNED TO COMMITTEE

IV. ADJOURNMENT



CITY OF MELROSE

DEPARTMENT OF PUBLIC WORKS
Administration & Engineering-Water-Sewer-Facilities
Park & Forestry-Highway-Sanitation-Cemetery-Fleet

3.1.a

Elena Proakis Ellis, P.E., BCEE
Director of Public Works

City Hall, 562 Main Street
Melrose, Massachusetts 02176
Telephone - (781) 979-4172
E-mail: eproakis@cityofmelrose.org

MEMORANDUM

To: Mayor Paul Brodeur
Melrose City Council

From: Elena Proakis Ellis, P.E., Director of Public Works

cc: Patrick Dello Russo, CFO/Auditor
Kathryn Armata, Treasurer Collector
Shannon Phillips, City Solicitor
James Troup, Assistant DPW Director – Administration & Finance

Date: April 13, 2022

Re: Authorization to Borrow MWRA LWSAP Funds for Water System Improvements

The Department of Public Works requests the Authorization to borrow funds to continue Water System Improvements. Construction of said improvements would begin in the Spring of 2022 and continue throughout the 2022 construction season. Projects proposed include the replacement and upgrade of over one mile of water infrastructure at the following locations:

1. Appleton Street
2. Irving Street
3. Elliott Street
4. Frost Avenue

REQUEST FOR AUTHORIZATION OF BOND (WATER)

The Department of Public Works respectfully requests that the City Council authorize the City Treasurer, with approval from the Mayor, to issue bonds or notes of the City to the aggregate principal amount of **Six Hundred Eighty Five Thousand Dollars (\$685,000)** under the Water Enterprise System through MWRA LWSAP bonds for FY2022. In general, the borrowing will fund design, engineering and construction of programs that will continue to address water system improvement projects aimed at addressing leak history, fire flow capacity and water quality in the above mentioned corridors and other areas throughout the system as required. This is a zero percent (0%) interest loan with a ten (10) year pay-back period commencing in FY 2023 (FY23).

The City Council of the City of Melrose, appropriates the sum of Six Hundred Eighty Five Thousand Dollars and No Cents (\$685,000.00) to

-pay costs of designing and constructing water system improvement projects aimed at addressing leak history, fire flow capacity and water quality in the Appleton Street, Irving Street, Elliott Street, and Frost Avenue corridors and throughout the City's water system, which projects shall be undertaken in conjunction with loan funding to be received by the City through the MWRA's Local Water System

Attachment: Council Memo MWRA Loan Acceptance (ORDER-2022-106 : MWRA LWSAP Bond Authorization - FY 2022)

Assistance Program,

and that to meet the aforesaid appropriation, the Treasurer with the approval of the Mayor is hereby authorized to borrow said amount, under and pursuant to Chapter 44, Section 8 of the General Laws, or pursuant to any other enabling authority, and to issue bonds or notes of the City therefor.

Any premium received upon the sale of any bonds or notes approved by this vote, less any such premium applied to the payment of the costs of issuance of such bonds or notes, may be applied to the payment of costs approved by this vote in accordance with Chapter 44, Section 20 of the General Laws, thereby reducing the amount authorized to be borrowed to pay such costs by a like amount.

The funds borrowed pursuant to this Order will be deposited into Fund 6149.

The MWRA's Local Water System Assistance Program provides interest-free loans to member water communities for local water system improvement projects. Loan funds have been approved for distribution from fiscal year 2011 through fiscal year 2022. MWRA's goal in providing financial assistance to member communities is to improve local water systems to help maintain high quality water as it passes from MWRA's facilities through local pipelines to customers' taps. As of May 2022, Melrose has \$685,000 in eligible funding available to borrow within the parameters of this program. It is requesting the authorization to borrow said amount.



CITY OF MELROSE

DPW-PARKS DEPARTMENT

TO: Mayor Paul Brodeur, Patrick Dello Russo, CFO/Auditor

FROM: Joan Bell, Superintendent of Mt. Hood & Public Open Space
Elena Proakis Ellis, Director of Public Works

SUBJECT: Fred Green Field - Fabric Replacement

DATE: April 15, 2022

DPW/ Parks is respectfully requesting \$600,000.00 dollars to replace the athletic fabric on Fred Green Football Field and the replacement of the surrounding fence.

The field was installed in 2011 with a 10-year life expectancy. There are some tell-tale signs of its age: it is frequently losing inlays that pose tripping hazards, splitting, and shedding turf fibers and worn inlays and lines are significantly more worn than the turf in the body of the field. Over time infill migrates, displaces, compacts, and breaks down. Because of these issues the City is paying more for repairs each year as the fabric ages. This is our primary field for high school sports and our only field for high school football. Our youth and recreation programs benefit from it as well. It is also used for many community events throughout the year.

The fence that encloses the field is in need of replacement. There are many top and bottom rail pipes missing, and in some areas the fence is bowed from impact and stretched beyond repair. We are looking to add additional gates for entrance onto the field where we can spread the wear patterns to other areas than just one.

We recently had the field tested, and the drainage and crumb rubber were determined to still be in great condition, with an anticipated 30-year total lifespan on those elements of the field. Thus the proposed replacement will include replenishing of a minimum amount of rubber, followed by replacement of the “carpet” that comprises the playing surface. This means that the City will not have to remove and dispose of any of the existing rubber pellets, which is environmentally preferable.

We have received a vendor quote for approximately \$525,000 to perform the replacement. We are required by state procurement laws to publicly bid the labor component of this estimate, at a minimum, which will entail the assistance of a design engineer/landscape architect to develop plans and specifications suitable for a public bid. With the combined costs of the design, implementation, construction oversight, and desired fencing improvements, we have estimated the total cost of the project to be \$600,000. We anticipate a project schedule of design in spring/summer 2022, bidding in fall 2022, and construction in summer 2023. This will allow us to plan and coordinate with the various users of the field and ensure its availability during the desired construction period. It is also anticipated to be the most realistic schedule given current employee and materials shortages.

We respectfully request your consideration of an appropriation from retained earnings in the amount of \$600,000 to implement this project.

Attachment: Fred Green Free Cash Request Memo to Council (ORDER-2022-108 : An Appropriation from Free Cash for Fred Green Field Fabric



CITY OF MELROSE

OFFICE OF THE MAYOR

PAUL BRODEUR

Mayor

City Hall, 562 Main Street
Melrose, Massachusetts 02176
Telephone - (781) 979-4440

To: Melrose City Council

From: Lauren Grymek, Director of Economic Development, on behalf of Mayor Paul Brodeur

Re: Acceptance of Massachusetts Cultural Council Grant for Healthy Melrose

Date: April 12, 2022

On behalf of Mayor Brodeur, I am pleased to present the Honorable City Council with a request to accept funding from the Massachusetts Cultural Council (MCC) in the amount of \$1,500.

The grant is being awarded for the City of Melrose's annual Healthy Melrose Family Wellness and Fitness Fair scheduled for May 7, 2022. The grant comes from the MCC's FY22 Festivals Program. 100% of the funds will be disbursed to the City upon receipt of the signed MCC Standard Contract Form. There is no match required, and funds are required to be spent by June 30, 2022.

This funding will allow for additional marketing and promotion of Healthy Melrose to encourage attendance, production or technical costs related to photography and videography of the event and added programming for attendees to participate in.

About Healthy Melrose:

Since 2009, the Healthy Melrose Wellness and Fitness Fair has been led by a local team of educators, City leaders, and health and fitness professionals. The mission of Healthy Melrose is to create enthusiasm around adopting and nurturing a healthy and physically active lifestyle in the Melrose community. The event aims to improve the quality of life of attendees by helping them find new ways to make health and fitness a priority in accessible and meaningful ways with a focus on the science of exercise, nutrition and mental health.

With over 40 vendors exhibiting, this year's Healthy Melrose fair will showcase local fitness, wellness and mental health options through demos, fitness activities, displays, information and samples from local service providers and health/wellness experts across all ages.

The in-person event returns to Fred Green Field at the Melrose Athletic Complex after being cancelled in 2021 and held virtually in 2020 due to the COVID-19 pandemic.

I respectfully request acceptance of these funds so that this recovery work may move forward. Thank you for your consideration.



DENISE M. GAFFEY
Director & City Planner

CITY OF MELROSE

OFFICE OF PLANNING AND COMMUNITY DEVELOPMENT

City Hall, 562 Main Street
Melrose, Massachusetts 02176
Telephone - (781) 979-4190
Fax - (781) 979-4290

MEMORANDUM

TO: Melrose City Council

FROM: Martha Grover, Sustainability Manager

RE: MassSave Community First Partnership Award

DATE: April 14, 2022

I'm pleased to inform you that the City of Melrose is one of 30 Massachusetts communities selected to participate in the MassSave Community First Partnership (CFP) Program. The City will receive a grant of \$25,000 to support efforts to maximize uptake of energy efficiency measures in homes and businesses consistent with the strategies articulated in Melrose's recently completed Net Zero Action Plan. Attached is the CFP Memorandum of Understanding for your review, as well as the Net Zero Action Plan for reference. No additional matching or other funding is required other than in-kind staff time.

The CFP program is an updated version of the 2016 MassSave Community Initiative that supported the Melrose Energy Challenge. Under the current program, MassSave, through National Grid, will provide funding up to \$25,000 annually over three years to the City to conduct outreach and energy coaching to Melrose residents and small businesses on efficiency measures, weatherization, and heating system upgrades.

The updated program focus is on low to moderate income households, renters and landlords, and small businesses who have historically not taken part in similar programs. The city has lined up a number of internal and community partners to help in this outreach effort including Melrose Energy Commission volunteers, fuel assistance program managers, the Council on Aging, Veterans Services, and the Health and Human Services Department, among many others.

The CFP Program aligns perfectly with our Net Zero Action Plan goal to reduce greenhouse gas emissions in our community and beyond and is supported by recently approved statewide MassSave incentives which also focus on electrification and emissions reductions.

I look forward to sharing more about our program goals and objectives for the next three years of the CFP Program. Please don't hesitate to contact me if you have any questions. Thank you for your consideration.



February 16, 2022

Mass Save Community First Partnership Agreement

By and Between

National Grid USA Service Company, Inc. d/b/a National Grid ("National Grid" or "Program Administrator" or "PA") and The City of Melrose

OVERVIEW

This agreement memorializes the understanding of the National Grid USA Service Company, Inc. d/b/a National Grid ("National Grid" or "Program Administrator" or "PA") and The City of Melrose. The City of Melrose As part of the Energy Efficiency Program Administrators' (PAs) 2022-2024 [Three Year Energy Efficiency Plan](#), the PAs are committed to working with environmental justice (EJ) communities as designated by the Commonwealth of Massachusetts to reach residents and businesses with energy efficiency services. The PAs have made equity one of the key strategic priorities of the 2022-2024 Plan. Equity, defined as the process of establishing more equal access to and participation in energy efficiency, particularly among those priority groups who have historically participated at lower rates, including renters/landlords, moderate-income customers, English-isolated families,¹ and microbusinesses.

The PAs strive to leverage such relationships with Communities to contribute to achievement of these critical priorities. As part of PAs Plan, the PAs are committed to working with a wide range of community-based organizations, municipalities, and business organizations with demonstrated experience in reaching and serving customers who have not participated in energy efficiency programs and who are in need of targeted approaches to increase access and participation in energy efficiency programs through our Mass Save Community First Partnership (CFP).

The objective of the Community First Partnership is to leverage the local knowledge and trusted relationships of trusted members within identified communities to prioritize these partnerships to, increase engagement with EJ communities, and reach low to moderate-income customers, renters, landlords, English-isolated customers, and microbusinesses to provide access to and ensure participation in PA Energy Efficiency Programs. The PAs focus includes a flexible design to encourage innovative proposals, and align goals, data, and outcomes shared between the PAs and community partners.

¹ In Massachusetts, the EEAC and the PAs refer to customers where 25 percent or more of their household has *no one* over the age of 14 who speaks "English only" or "very well" as "English-isolated families." Being classified as an English-isolated family is one of the Commonwealth's three criteria for a geographic area/community to be designated as an Environmental Justice community. The Environmental Protection Agency (EPA) defines the same population of customers as "linguistically-isolated customers." For the 2022-2024 Plan document, the Massachusetts PAs will use the term "English-isolated families" to remain consistent with the Commonwealth's and EEAC's policies.

As a Community First Partner, the The City of Melrose must plan and execute 36 months of activity including public education and outreach, such as marketing and/or participation in local events to drive measurable uptake in residential weatherization, residential heating system upgrades, and Small Business Turnkey program participation through the following PA initiatives:

Residential Coordinated Delivery (RCD) Initiative

The Mass Save RCD Initiative is designed to promote and facilitate the implementation of energy efficiency upgrades in existing homes to help customers reduce their overall, whole-home energy usage. Through the RCD Initiative customers access home insulation and air sealing services (referred to collectively as “weatherization”). The Initiative provides customers with information and technical assistance, primarily through home energy and facility level assessments, to help them understand their specific energy efficiency opportunities, and which financial incentives can help defray the costs of their investments. Customers are served in a fuel-blind manner, with PAs coordinating a streamlined experience for customers, even if they are served by two different PAs. The Initiative strives to provide flexibility in delivery of services to best match each customer’s unique needs and preferences and align with the technical opportunities for the home and the customer’s authority to implement recommended improvements.

The RCD Initiative includes incentives for some measures installed directly by program contractors, such as water savings devices, and for air sealing and insulation. Additionally, the RCD Initiative promotes a wide array of energy-efficient technologies which are incentivized through the PAs other initiatives such as Retail (energy-efficient products, HVAC and DHW systems) and the HEAT Loan (zero percent financing). The PAs work with Lead Vendors selected through competitive solicitations, to administer the Initiative. The Lead Vendors work with trade ally partners, including Independent Installation Contractors (IICs) and Home Performance Contractors (HPCs), along with other contractors such as electricians and HVAC companies to deliver the RCD Initiative. Within RCD, customers are eligible for a variety of assessment types to determine opportunity for efficiency upgrades, which include the Online Home Energy Assessment (OHEA), the virtual Home Energy Assessment and the in-Home Energy Assessment.

Online Home Energy Assessment: An online tool to help customers see how they’re currently using energy, review efficiency recommendations and rebates, and receive an estimate of potential cost savings. Customers also learn if their home is a good candidate for an in-home or virtual energy assessment. The online assessment asks a series of questions to determine opportunities and make recommendations.

<https://www.masssave.com/en/saving/energy-assessments/online-home-energy-assessment>.

Home Energy Assessment (delivered either in-home or virtually): Mass Save Energy Specialists will visit the customer’s home to identify opportunities for energy savings including reviewing the base load (evaluating opportunities for more efficient products), thermal boundary (identifying opportunities for additional insulation and air sealing) and mechanical equipment (assessing the HVAC equipment for efficiency). Efficient products such as advanced power strips and water-saving measures are provided at the visit to help customers start saving immediately. Additionally, customers receive a personalized report with recommendations on other savings opportunities and are provided information on available rebates and incentives.

<https://www.masssave.com/en/saving/energy-assessments/homeowners>

<https://www.masssave.com/saving/energy-assessments/renters>

<https://www.masssave.com/saving/income-based-offers>

Residential Retail

The Residential Retail Initiative provides a broader integrated marketplace where energy-efficient products and equipment are positioned as attractive, primary choices for customers making purchasing decisions, whether online, in-store, or through independent contractors and distributors. The Residential Retail Initiative offers education to help customers make informed decisions, incentives to make efficient choices more financially attractive, and training and support for the market actors, to help shift contractors toward more efficient, correctly installed equipment. The Residential Retail Initiative ensures that all residential customers can access high-efficiency heating, ventilation, and air conditioning (HVAC) and domestic hot water (DHW) equipment, smart thermostats, appliances, and other energy-efficient products. The Initiative works to place the most energy-efficient options in front of customers and assists customers in transitioning from traditional electric resistance or fossil fuel systems for home heating and domestic hot water to energy efficient heat pump systems. Customers have the flexibility of selecting their own HVAC technician or plumber to access this initiative.

<https://www.masssave.com/en/saving/residential-rebates>

Small Business Turnkey

The Small Business Turnkey initiative offers a no-cost on-site energy assessment. Small business customers receive a site-specific proposal with recommended energy efficiency measures that may include lighting upgrades and controls, gas measures (for natural gas customers), walk-in cooler efficiency measures, and site-specific custom projects. PAs also provide removal of fluorescent lights and ballasts if necessary. Massachusetts PA will cover up to 70% of the installation and equipment costs. Note that houses of worship and small 501c3 non-profits are eligible for the Small Business Turnkey initiative.

<https://www.masssave.com/en/saving/business-rebates/energy-saving-solutions-for-small-businesses>

GOALS AND FINANCIAL AWARD

The City of Melrose's PARTICIPATION GOALS

Customer participation is defined as scheduled to complete work or work completed within a calendar year.

Year	Residential Weatherization (including income eligible, moderate income, and market rate) Goal	Residential heating and hot water heating (including income eligible, moderate income, and market rate) Goal	Small Business Turnkey Goal	Total
2022	125	100	25	250
2023	125	100	25	250
2024	125	100	25	250

The City of Melrose'S FINANCIAL AWARD

Based on the application submitted by The City of Melrose and included as Appendix A, The City of Melrose will be eligible for an annual award from National Grid which will total up to \$25,000 pending goal achievement for each of the three years of the program.

The City of Melrose is independently responsible for reaching the above goals. Each year, The City of Melrose will be eligible to receive 50% of the financial award at the start of the year, 25% at the end of Q2 (June to early July), and the remaining 25% at the end of Q3 (September to early October). A bonus award may be provided in January of the following year for surpassing all goals. There will be an annual re-assessment of awards based on goals reached. National Grid reserves the right to adjust the award for the following year upward or downward based on previous year's goal achievement.

Q1: \$12,500

Q2: \$6,250

Q3: \$6,250

As the lead applicant for their team, The City of Melrose will be solely responsible for all further disbursement of funding to them provided through the Community First Partnership to the other members of their team.

SUPPORT RESOURCES FROM NATIONAL GRID

In addition to the financial support listed above, The City of Melrose will receive support from National Grid including, but not limited to:

- Designated point of contact with a utility company account manager from both gas and electric PAs for the communities the applicant team will focus on.
- Additional point of contact who specializes in energy saving opportunities within municipal buildings.
- An orientation session including an introductory training on energy efficiency programs.
- Periodic training sessions by content experts to orient CFPs on energy efficiency offerings, best practices, and coordination with the local network providers to better serve eligible residents.
- Training sessions to orient CFP on energy efficiency offerings, best practices and coordination with the local Community Action Program (CAP) or Low-Income Energy Affordability Network (LEAN) including incentives available to income eligible customers and how to best ensure that income-eligible customers connect to energy efficiency programs.

- Daily support from Lead Vendor to include technical support with reaching CFP goals.
- Mass Save and PA specific marketing collateral created and printed. Materials may be co-branded with Mass Save, sponsoring Program Administrators, municipal seal, or organizational logo. These materials will be translated in up to three languages in addition to English.
- Regularly scheduled meetings with Lead Vendor to provide guidance and deliberate on CFP performance and opportunities for growth.
- Monthly progress report on progress to goals, including monthly conference calls to discuss outreach, successes, challenges and best practices to address barriers to greater program participation.
- Assistance planning local events.

National Grid will work with The City of Melrose on the requested marketing materials to help support the City's outreach efforts. All marketing should be approved by National Grid prior to use.

THE CITY OF MELROSE'S RESPONSIBILITIES/PARTICIPATION REQUIREMENTS

Participation Requirements:

- Must be a municipality, registered nonprofit or have a fiscal agent. Applicants representing multiple municipalities and/or nonprofits must designate a lead municipality/nonprofit that will receive disbursements of funds.
- Must have a track record of work in, and proposal to focus partnership activities in, designated Environmental Justice communities in Massachusetts.
- Must commit to a three-year partnership.
- Must submit outreach, marketing and communication plan for first year and then annually each following year.
- Must submit budgets for all three CFP years. Greater detail for year one budget will be expected; broader budget breakdown for years two and three is acceptable. Cost to compensate an Energy Advocate for 5-10 hours a week for at least \$17/hour must be included as a component of the budget.
- Must be open to building partnerships with additional community organizations.
- Must be open to completing local community organizing.
- Must be open to creating innovative strategies and initiatives to engage residents.

Participation Responsibilities:

- Must attend mandatory three-hour orientation on targeted Massachusetts PA offerings and best practices in marketing and community outreach.
- Must participate in monthly calls and submit monthly outreach reports.
- Must complete at least one marketing activity per month. The marketing activity could include any of the following categories: social media posts, ads, direct mail, articles, video, informational flyers dispersed in schools, workshops/webinars, etc.
- Must track and report progress – see additional detail in the "Tracking & Reporting" section.
- Must have a primary contact who will dedicate at least one hour per week to this initiative, as well as a designated "Energy Advocate" who will dedicate at least 5-10 hours per week to this initiative. It is acceptable for the primary contact and the Energy Advocate to be the same person. Energy advocate roles and responsibilities:
 - o Participate in all trainings held by National Grid or its designee for Energy Advocates to familiarize them with energy efficiency offerings, community based social marketing, and community based participatory research.

- Serve as an advocate for customers who need support and guidance to enroll in the Mass Save programs.
 - Work with PAs to track and record participation barriers.
 - Work to increase customers' program participation rates by supporting coordination between program vendors and customers.
 - Actively communicate with customers to guide them through the application process and broker communication with stakeholders to reduce program participation barriers.
 - Manage administration of a community-based social marketing campaign to promote communitywide behavioral change by collaborating across a diverse group of partners.
 - Submit reports to Lead Vendor to support tracking and exploring solutions to program participation barriers.
- Must submit all marketing materials for review and approval to National Grid or their designee before they are finalized and used in the community.
- Must coordinate with the local Community Action Program/Low Income Energy Affordability Network (LEAN Network) agency to ensure clear process and support for income-eligible residents to access energy efficiency programs, including establishing an effective process for identifying income-eligible customers, explaining to them the increased benefits of participating in the low-income programs and referring all low-income customers to the local low-income program agency.
- Must submit a final report (one to three pages) on progress at the end of the year and hold a year-end review meeting with Program Administrators at the end of each year. National Grid reserve the right to work with The City of Melrose to adjust their goals and budget, if necessary, through a partnership reengagement plan.
- Must complete a survey annually on how the CFP has/will spend its award funding and how they would like to stay engaged with their PA(s) after their participation period.
- Must select at least one or more subset of customers to engage: small businesses, renters, bi-lingual customers or moderate-income customers. Must participate in creating and implementing a community-based social marketing campaign.
- Must actively participate in CFP research and evaluation.
- Must inform National Grid or their designee of planned door to door outreach on behalf of the CFP and ensure that all paid and unpaid staff participating in door-to-door outreach have complied with National Grid's criminal background check process.
- The City of Melrose will be responsible for providing National Grid the necessary documentation for payment, including invoices with the required information.
- Submission of monthly updates to National Grid on progress of marketing activities including specific outreach to identified hard to reach segments.
- As indicated in the Mass Save Three-Year Energy Efficiency Plan- the PAs will draft and implement a Rental Unit Strategic Plan in 2022. All CFP partners will engage in information sharing and ongoing research to support outreach and engagement to renters and landlords that may include the CFP partner's tactics, as well as additional activities. This engagement could include, but is not limited to, outreach to community stakeholders, local organizations, city departments, private businesses, renters, and landlords, to promote events, surveys, and research organized by PAs in support of enhancing efforts to increase program participation among renters and landlords. This additional partnership engagement serves to increase understanding of each partner's community and reduce program participation barriers for residents in their community.

PAs will provide additional support and logistical coordination for all program partners to minimize the impact on current CFP goals.

PARTNERSHIP DETAILS

• Partnership path options

- Hub Team: Consisting of municipal staff, and community-based organization members representative of the municipality(ies) on the Community Partner team, a representative of the PAs lead vendor for this initiative, and PA representatives. The hub will be led by the Community Partner's "Energy Advocate" who coordinates quarterly meetings with municipal departments. PAs provide marketing templates for the Community Partner.
- Flex Format: Highly targeted approach; applicant proposes innovative outreach strategies; Energy Advocate is on the team; team creates their own marketing materials (materials must be approved by PAs prior to use) and team partners with contractors, landlords and employers.
- For either path, Community Partners will convene monthly meetings with their team and include the PAs lead vendor and representative(s) from PA(s). Energy Advocates track primary metrics listed below and PAs track additional metrics listed in "support resources from PA" section of this MOU.

• Community-based participatory research

- PAs will create tracking tools to support Energy Advocates with tracking and recording participation barriers. PAs will utilize this data to build on the strengths and resources of the community by promoting co-learning among PAs and the The City of Melrose to inform program development and goals.

• Community-based social marketing

- As part of the participation in the Community First Partnership, the PAs require that, in certain instances, marketing materials developed by any collaborating community-based organizations direct customers to the vendors directly contracted with them for those customers to participate in a Mass Save program offering. These instances include, but are not limited to, the following:
 - All small business customers.
 - Any residential customer that is on the discount rate code and is to be served by the local CAP agency.
 - Any residential customer who has had an energy assessment in the last two years.
 - All customers who reside in a multi-unit building that a Home Performance Contractor is not able to serve (criteria of this building classification is dependent on when/if the PAs move away from the 5+ unit requirement).
- This campaign will require accepted applicants to build a coalition of diverse stakeholders who actively work with the hard-to-reach population. The City of Melrose will allocate three to six months toward a planning process to reach the following benchmarks:
 - Select behaviors to promote.
 - Host focus groups to identify program barriers and benefits.
 - Develop strategy.
 - Identify target audience.
 - Develop compelling messages.
 - Obtain clear commitments from local stakeholders/groups.
 - Create an inclusive call to action.

- Strategies on how to build community norms through this campaign.
 - Craft simple, clear messages for marketing and advertising. Materials must be approved by the PAs prior to use.
 - Draft a list of PA approved prizes, awards and or raffles to engage the larger community.
 - Implement and evaluate strategy.
 - Any external funding or resources procured to do outreach, advertise and/or market to program participants must be marketed solely as Mass Save Community First Partnership. Program Administrators do not authorize the duplication of conflicting marketing campaigns to Mass Save customers.
- **Implementation support - Lead Vendor**
- PAs will hire a vendor to support coordinated implementation, such as supporting data tracking for Community Partners, and training and supporting the Energy Advocates.
 - All CFP participants are required to work with the selected Lead Vendor to reach goals.

TRACKING & REPORTING

National Grid will provide a baseline of 2019-2021 achievement in residential weatherization, residential HVAC, and Small Business Turnkey for each municipality listed on The City of Melrose's application, as well as monthly municipal-level progress on the same metrics and track use of campaign codes where possible. PAs will also use the Statewide Marketing annual awareness survey to track awareness of Mass Save programs in Community Partner municipalities. The City of Melrose will receive support from an implementation vendor who will be helping to coordinate a tracking system to simplify and streamline the system for all. The Vendor will also help The City of Melrose be able to track more accurately how many people/businesses participate in energy efficiency (EE) programs from their efforts.

The City of Melrose will be responsible for reporting the following data monthly to the PAs or designee:

- Outreach progress summary including data collection on number of residents in each target group being reached.
- Identification of barriers to participation in each municipality and progress made toward breaking those barriers over multiple years.
- Number of customer leads – The City of Melrose will be expected to track names and contact information for customers they are working with.
- Number of events organized and number of event attendees.
- Number of social media, mail and other outreach and number of customers reached, number of languages used and number of pieces of collateral created in multiple languages.
- Number of community members trained with an overview of energy efficiency programs.
- Number of other organizations the CFP is engaging and how often.
- Number of property owners of rental buildings generated as leads.
- Optional: Community Partners who want to track race/ethnicity and other demographic data of customer leads they generate will be expected to propose their own tracking system in their application and share that data with PAs.
- If applicants do not meet the goals established by year one, PAs will review their performance and identify if there is a need for an enhanced activity plan (EAP). This will focus on increasing program enrollment and requires review of the budget to assess best use of funds for the remainder of the initiative.

5. INVOICING

The City of Melrose should coordinate with National Grid point of contact to provide the necessary information to proceed with payment. Required documents/information could include a W-9 (demonstrating that the municipality or organization is tax-exempt), mailing address, made payable to, etc. PAs will use this information to set up an Authorization for Payment (AFP) with The City of Melrose to issue payment.

Invoices should be submitted on the Municipal or Organizational Letterhead and include the following:

- Invoice Number
- Prepared By
- Date
- Project: Mass Save Community First Partnership
- Description of Award
- Total Amount
- Information on Payment Remittance

SUPPORT TEAM:

National Grid support team:

Amanda Formica
Senior Analyst, Customer Energy Management
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617-640-0628

February-August 2022:

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781-605-4365

The City of Melrose support team:

Martha Grover
Sustainability Manager
mgrover@cityofmelrose.org
781-979-4195

DISCLAIMER

PAs may terminate The City of Melrose participation in the Community First Partnership if the PA determines The City of Melrose is not demonstrating a good faith effort to reach the participation requirements as outlined throughout the document.

The PAs may, in their sole discretion, at any time and without notice, terminate the The City of Melrose participation in the Community First Partnership or modify the Community First Partnership and the terms outlined herein. Community First Partnership expenditures, requirements and eligibility may be terminated, canceled, or modified by Massachusetts PAs at any time without notice.

Addendum: PAs hold the right to make changes to the MOU as long as it does not add any barriers to communities doing the work agreed upon and is thought to add efficiency to the program outcomes overall.

SIGNATURE PAGE

Community First Partnership Representative

Paul Brodeur
Mayor
The City of Melrose

Program Administrator Representative

Chris Porter
Director
National Grid



*Our plan to reduce greenhouse gas pollution to
net zero by 2050*
April 2022

City of Melrose

NET ZERO ACTION PLAN



Table of Contents

TABLE OF CONTENTS	1
ACKNOWLEDGEMENTS	2
LETTER FROM THE FUTURE	4
GETTING TO NET ZERO	5
NET ZERO ACTION ROADMAP	17
OUR HOMES AND BUSINESSES.....	19
GETTING AROUND MELROSE	27
WHERE OUR ENERGY COMES FROM.....	35
IMPLEMENTATION: WHAT'S NEXT?.....	41
NET ZERO ACTION ROADMAP SUMMARY	43
APPENDIX A: NET ZERO ROADMAP MILESTONE SUPPORTING DOCUMENTATION.....	52
END NOTES.....	55

Acknowledgements

Office of Planning and Community Development, City of Melrose

Denise Gaffey, Director

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Volunteers representing the Melrose Energy Commission, Melrose Climate Action, Melrose Pedestrian & Bicyclist Committee and others

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Thank you to the many members of the community who participated in the public input opportunities throughout the plan's development.

MAPC Staff

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Brooks Winner, Senior Clean Energy Specialist

Nicole Sanches, Former Clean Energy and Equity Specialist I

Cover photo credit: Jim Harrington

Letter from THE FUTURE

Dear Melrose Residents of 2022,

We know that the last few years have been tough in so many ways but please be reassured that you will soon emerge to a brighter future. You may ask yourself, how do we know this? Because we are here, decades in the future, already.

Chastened by the unmitigated disaster of Covid-19, and the imminent existential threat of climate change, America signaled a new era of possibilities had arrived. Eventually, legislation at the local, state and national levels was enacted to revitalize and drive economic and social equality, together with programs for substantially greater environmental quality.

With new momentum spreading across the globe by the 2030's, the dawning of the Sustainable Age arrived as an era of regenerative economic growth driven by the benefits of emerging new technologies and fostering prosperity even as fossil fuel use dramatically declined.

The technological innovations of developing both industrial scale and decentralized sustainable energy sources using wind, waves, tides, solar, biological, terrestrial and hydraulic forces led to vast changes in standards of living across the globe. Self-sustaining redevelopment alleviated many local and global climate threats.

On the local level, communities across the metropolitan Boston area implemented climate action plans in the 2020s to meet the 2050 net zero emissions goal adopted by Boston, Melrose and 12 other surrounding community leaders back in 2016. By 2022, all of the original 14 had begun implementation of the plans and their early success at laying the groundwork began to pay off in the mid '20's as the Sustainable Age gained widespread momentum across New England and other areas of the country.

Energy-efficient heat pump technology to condition our homes and buildings and demand for electric vehicles (EVs) became widespread. Even automobile manufacturers pivoted rapidly away from fossil fuels with most switching to all EVs by 2035. Electric utilities accelerated procurement of renewable energy to meet consumer demand. These and other societal changes led to dramatic improvements in air and water quality.

We extend our heartfelt thanks to the many Melrose citizens whose shoulders we stand on. For it was all of you, who turned your concern for the environment to action, nourished by the small successes, in order to make meaningful change to our community and the larger world. We wish for you all the good fortitude, strength, and continuing love for our Earth needed to make the promise real.

Sincerely,
The 2050 Melrose Energy Commission

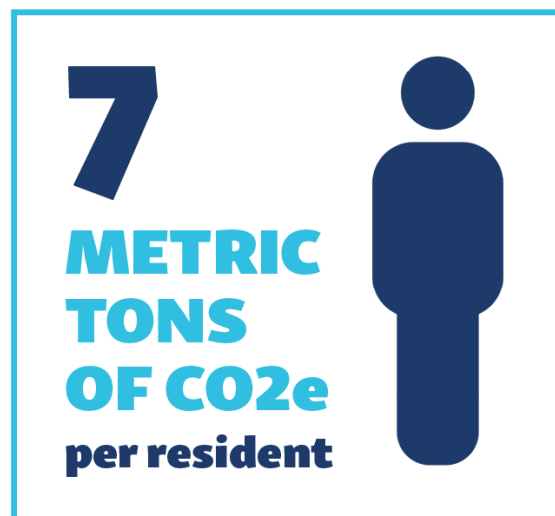
Getting to Net Zero

Melrose has committed to reaching net zero greenhouse gas (GHG) pollution by 2050. What exactly does this mean for our community? Why does our local goal matter? How will we get there and what do we need to do to reach that goal? This Net Zero Action Plan aims to answer these questions and to create a roadmap for our city to reach net zero by 2050.

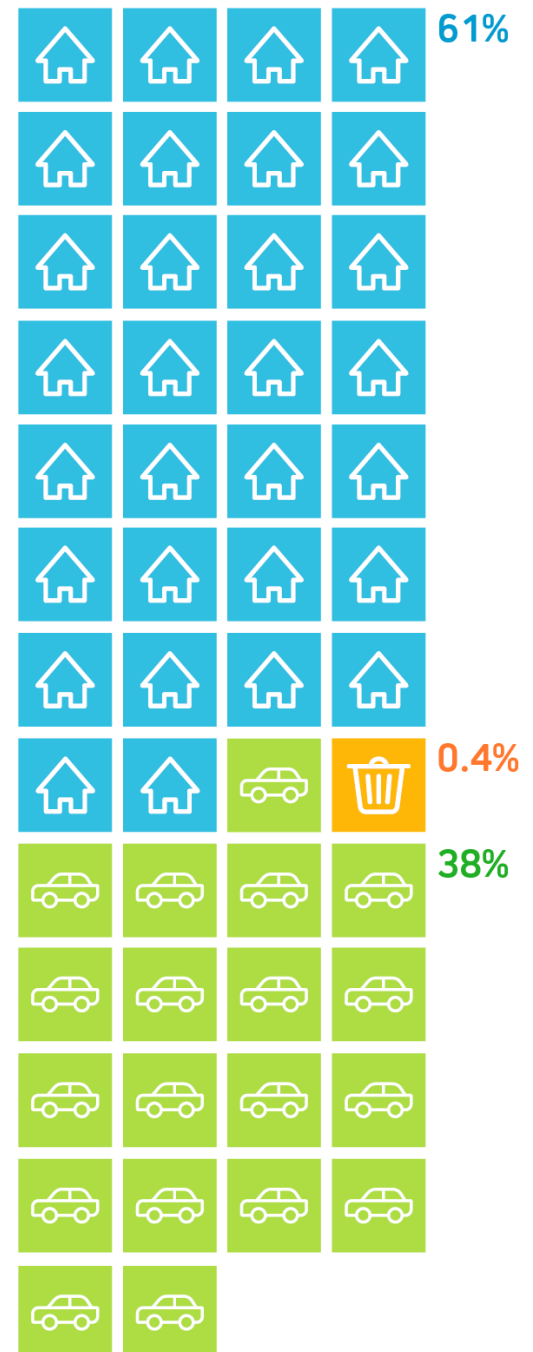
**IN 2017, OUR CITY
WAS RESPONSIBLE
FOR EMITTING**

187,642
METRIC TONS OF CO₂e

**in MELROSE
THAT WORKS OUT TO**



OUR EMISSIONS BREAKDOWN



WHERE ARE WE STARTING?

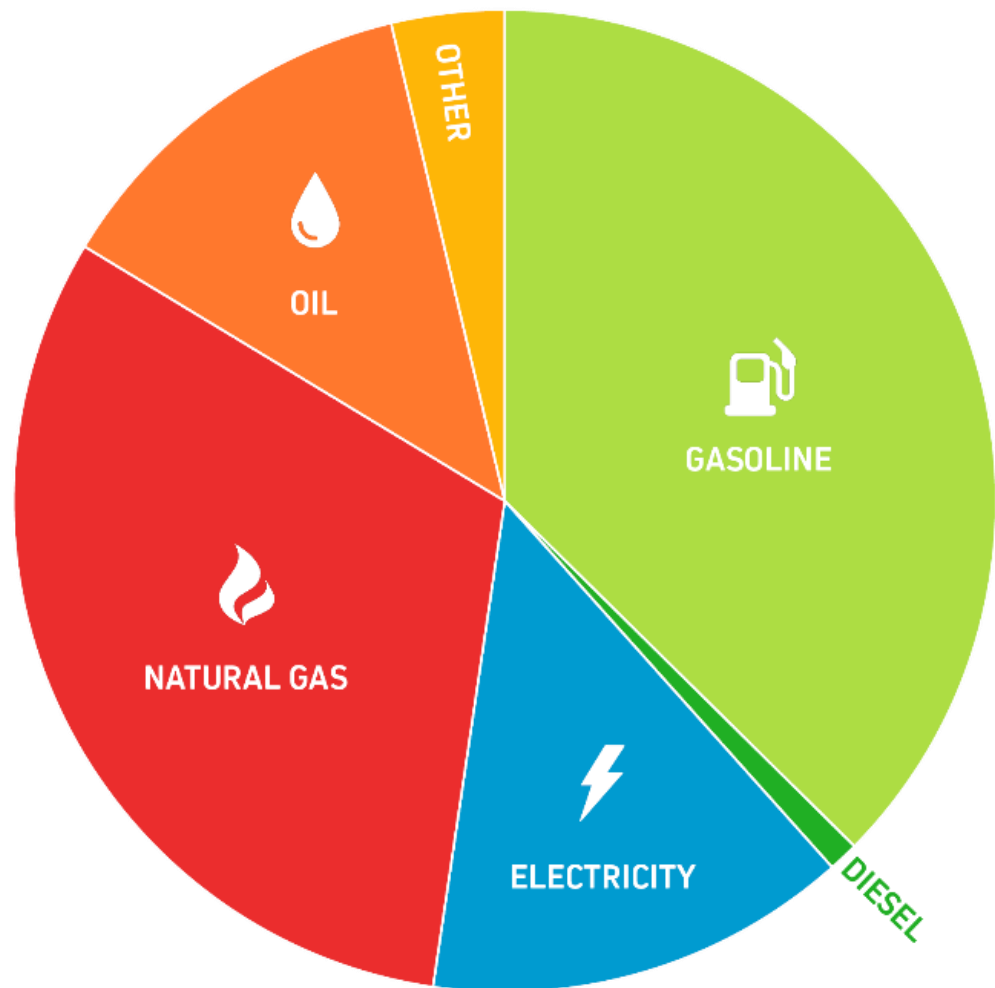
Every day, Melrose residents and businesses rely on fossil fuels to heat and cool our homes, keep the lights on, power our electronics and drive our cars. In doing so, we release **greenhouse gas emissions**.

In 2020, City staff and volunteers worked with MAPC to identify the primary sources of emissions across our community for 2017, the most recent year for which complete data were available, to calculate a baseline for future emission reductions (see Appendix A for the methodology).

In Melrose, buildings are the largest source of emissions (61%). On-road transportation is another major source of emissions, more than 38%.

Which fuels generated the most emissions in Melrose?

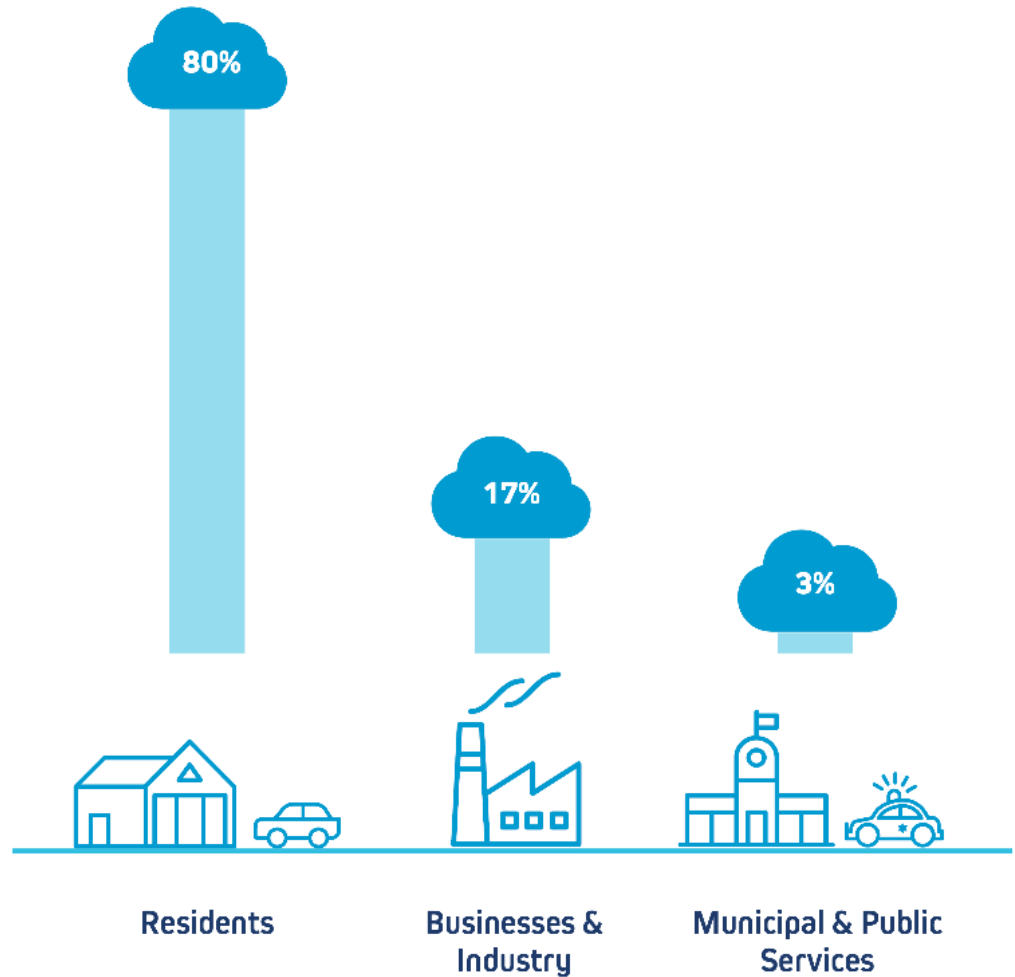
The types of fuel sources our homes, businesses, and vehicles rely on every day generate different amounts of emissions in our community. Our 2017 inventory of greenhouse gas emissions shows that the combustion of fossil fuels, such as oil, natural gas, diesel, and gasoline, was responsible for over 82 percent of our community-wide emissions.



SOURCE: MELROSE'S 2017 GREENHOUSE GAS INVENTORY

Who is responsible for emissions in Melrose?

As a community, the actions and choices we make each day contribute to the amount of emissions we are responsible for. In Melrose, over 80 percent of emissions come from residents' homes and vehicles and another 17 percent comes from businesses and industry in Melrose.



SOURCE: MELROSE'S 2017 GREENHOUSE GAS INVENTORY

WHY NET ZERO?

Climate scientists have made it clear that we need to reduce global GHG emissions to net zero by 2050, or sooner, to avoid catastrophic climate change.

We know that the planet has already warmed by about 1° Celsius since we started burning fossil fuels like coal, oil, and gas in the mid-1800s.ⁱ We also know that if we can keep warming below 1.5° Celsius we can avoid the worst impacts of climate change like extreme floods, wildfires, and droughts.ⁱⁱ The Intergovernmental Panel on Climate Change's 2019 special report, [Global Warming of 1.5°C](#), says that in order to give ourselves a chance to limit global warming to 1.5° Celsius we will need to reduce GHG pollution 45% by 2030 and to net zero by 2050. This means that we have a limited "carbon budget," or amount of GHG pollution that we can afford to put into the air without exceeding 1.5° Celsius of warming.

The longer we wait to start reducing our GHG pollution, the faster we use up our carbon budget and the less time we give ourselves to meet our goal. That is why getting to net zero matters and why we have chosen 2050 as our target date.

We recognize climate change is a global problem and that many of the solutions are beyond our control. To reach our net zero goal, we will need help from global, federal, state, and regional policies that support our transition to clean energy, but we can lead at the local level. During the spring of 2021, the Commonwealth enacted Senate Bill 9, An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy, which set the interim GHG reduction targets of no less than 50% by 2030 and 75% by 2040.ⁱⁱⁱ Our net zero roadmap highlights the strategies that we can deploy locally to accelerate this transition over the next several years.



Source: Architecture2030.org

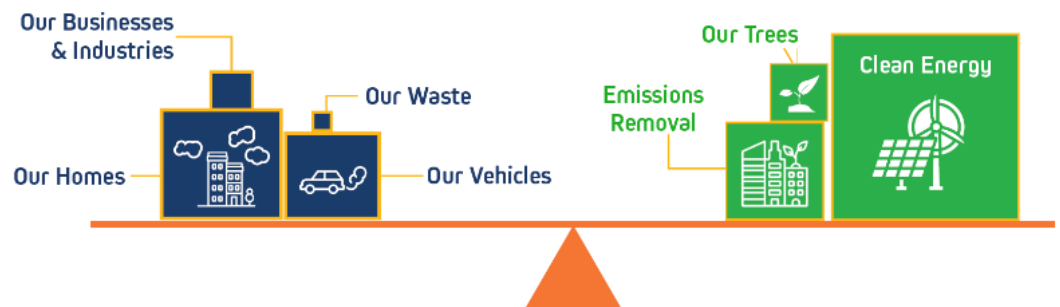
WHAT DOES “NET ZERO” MEAN?

Reaching “net zero” means that our community will reduce its GHG emissions as much as possible and remove or offset any remaining emissions by 2050 and ideally sooner. This will require a major shift in the way we heat and cool our homes, how we get around, and where our energy comes from. It also presents a huge opportunity to change our community for the better. By achieving net zero GHG emissions, we can also have cleaner air, healthier people, and a more equitable and prosperous community for everyone. **Sounds pretty good, doesn't it?**

From this...



...to this!



GETTING THERE EQUITABLY

Climate change is an existential challenge, but it is also an opportunity to re-imagine Melrose's future, and to make that future safe, affordable, and equitable for all who live and work in our community. Massachusetts municipalities are increasingly undertaking climate mitigation and adaptation strategies and are starting to seek out ways to advance equity within those measures. By centering equity in this plan, we can build a future that not only is safer and affordable for all, but also allows each individual in Melrose to thrive. An equitable net zero carbon future must be our goal.

In equitable planning, we must be conscientious of the history of our region, the differences in how populations are able to respond to a changing climate, and the needs of residents. We recognize that the effects of climate change systemically impact Environmental Justice communities and other vulnerable populations inequitably. The comparatively negative health outcomes that people of color experience are one example. The inequities we see today will persist in the future if we do not act.

In addition, as more households switch from natural gas to electricity for heating, it is expected that gas rates will rise for those still dependent on gas heating systems. Careful planning at the state level is needed in order to avoid the cost burden falling disproportionately on low-income households.

The state of Massachusetts considers income, race, and English language proficiency within its definition of an Environmental Justice neighborhood.^{iv} The Environmental Justice neighborhoods in Melrose meet either the state's income or minority population Environmental Justice criteria, or both.

Accordingly, it is essential to assess the potential social equity impacts of climate mitigation strategies. For our plan to be actionable and for our vision of the future to be equitable, we must prioritize equity throughout the planning and implementation of our net zero strategies. An equitable Net Zero Plan investigates the anticipated outcomes of its proposed actions on environmental justice communities and other vulnerable populations.

HOW DO WE GET THERE?

A lot can change in 30 years and this plan is a starting point on our path to net zero that we will revisit and adjust as we continue to move forward in the coming years. We know that we need to make our buildings and vehicles, the two major sources of emissions in our community, much cleaner and more efficient. To reach our net zero goal, our community will need to work towards five core transitions.



Make our homes and businesses super-efficient.

Making existing buildings super-efficient and constructing new buildings to high efficiency standards will reduce emissions and make energy bills more affordable for everyone because the cheapest energy is the energy you don't use.



Electrify heating and cooking equipment.

Switching to electric heating and cooking appliances like air-source heat pumps and induction cooktops immediately reduces carbon emissions and improves indoor air quality, and these benefits only get better as our electric grid gets cleaner.



Electrify cars, trucks, buses, trains, and other ways we get around.

Electric vehicles are cleaner, cheaper to run over time, and require less maintenance. Providing access to charging stations and creating electric transportation options for those who do not own vehicles are essential to this transition.



Make walking, biking, and public transit the best way to get around.

By designing greener and people-centered streets and sidewalks, we can reduce emissions and air pollution while also making residents healthier and more connected to their community.



Green the grid and produce more renewable energy locally.

Renewable energy comes from endlessly sustainable sources such as wind, the sun's heat or light, or the earth beneath our feet. Our electricity is getting greener all the time thanks to state and local policies, but natural gas still provides most of our electricity in Massachusetts and it has to be imported from out of state. Locally produced renewable energy makes the air we breathe cleaner and benefits the local economy in multiple ways.

WHAT HAVE WE ALREADY DONE?

As a member of the Metropolitan Mayors Coalition, the City of Melrose signed a commitment in 2016 to achieve net zero emissions as a region by 2050. The Melrose Sustainability Manager and the Melrose Energy Commission have worked together on behalf of the City over the last decade to reduce greenhouse gas emissions.

LEADING BY EXAMPLE



Green Community since 2010. Designated a Green Community in 2010, Melrose has since received more than \$2 million in grants and utility incentives for dozens of energy efficiency projects in city and school buildings and LED streetlight upgrades. Melrose currently hosts 11 public EV charging stations and includes three battery EVs in its municipal fleet as well as a water meter van with a hybrid retrofit system. The roofs of the high school, middle school, and DPW Operations Facility are covered with solar arrays.

BUILDINGS



Melrose Energy Challenge. Two community outreach efforts in 2011 and 2016 incentivized homeowners to take advantage of MassSave home energy assessments and weatherization projects. Continued outreach results in about 600 energy assessments and more than 200 insulation projects annually which save homeowners energy and reduces community emissions.



Melrose Heat Smart Campaign. In 2020 Melrose launched a clean heating and cooling outreach program called HeatSmart Melrose with the support of the Massachusetts Clean Energy Center. Heat pumps and solar hot water systems were promoted with much success and over 138 new installations completed. The program laid the groundwork for continued education and awareness efforts to encourage property owners to consider non-fossil fuel options for heating and cooling.

MOBILITY PROGRESS



The Melrose Pedestrian and Bicyclist Committee has worked with the City over the years to increase access and safety for pedestrians and bicycles via Complete Streets projects and infrastructure improvements. Improving public transit and fighting to maintain service levels continue to be top priorities for elected officials and commuters who depend on it daily.

Smart Growth in Melrose. Long before the terms “transit-oriented development” and “smart growth” became commonplace, the City of Melrose created opportunities for dense development near transit through progressive zoning and cooperative relationships with developers. The City has had progressive, growth-oriented zoning in place since the early 1980s and, in recent years, has seized opportunities to promote high-density housing in our transit-rich locations. Two overlay districts established in 2008 and 2014 incentivize dense, mixed-use



PHOTO CREDIT: CITY OF
MELROSE

development near public transit on Washington Street and Rail Corridor. In 2021, the Planning Board also approved an incentive program for the zoning districts around the Commuter Rail Stations that is meant to incentivize higher densities in exchange for providing community benefits like green building practices.

EV Charging Infrastructure

In an effort to make electric vehicle charging accessible and easy, Melrose has taken advantage of state grants and utility incentives to install 11 public electric vehicle charging stations (19 total ports) over the last seven years. The most recent chargers are utility pole-mounted chargers – the first of this type of equipment to be installed on the east coast – as a demonstration project with National Grid. Public EV charging is convenient to shopping areas, parks and recreation, as well as to renters and condo owners who may not have the ability to install chargers at home.

CLEAN ENERGY PROGRESS

Solarize Mass Melrose. This 2012 outreach project resulted in 79 homeowners signing up to participate, 425 kW of solar installed, and \$48,000 annual energy savings. The number of rooftop solar installations has grown from nine in 2011 to 526 by the close of 2021 with more permits in process.



PHOTO CREDIT: RESONANT ENERGY



Melrose Community Power Program. The primary goals of the program are to provide competitive choice, longer-term price stability and more renewable energy options to participating consumers. About 90% of Melrose households participate in Melrose Community Power (MCP). Under the new contract that began in November 2021 the program allows residents to choose to support local renewable energy by purchasing 10% more renewable energy than is required by the state. The Massachusetts Renewable Portfolio Standard (RPS) mandates levels increase annually so that in 2022 when the state requirement is at 20% the additional 10% in the MCP program will result in 30% of the supply coming from local Class 1 sources such as wind, solar, and low-impact hydro energy. There is also an option called Melrose 100% Local Green that more than 200 residents have chosen to purchase.

WHAT HAVE WE HEARD FROM THE COMMUNITY?

Melrose's Net Zero Action Plan was developed by the City of Melrose, in a collaborative effort between municipal staff, committee members, residents, and businesses, with support from the Metropolitan Area Planning Council (MAPC).

The Melrose Energy Commission, with key input from the Melrose Pedestrian and Bicyclist Committee, served as the primary advising body in developing the Plan. The committee received training from MAPC on developing a greenhouse gas inventory to inform the plan development and leading focus groups to expand current and future engagement of key stakeholders.

The strategies and actions identified in the Plan were primarily informed by research MAPC completed on other communities' climate action plans and align with MAPC's Municipal Net Zero Playbook, a regional guide for municipalities seeking to reduce emissions. The final priority actions included reflect Melrose's net zero journey, community feedback, and the major sources of GHG emissions in Melrose.

VICTORIAN FAIR KICK-OFF

In 2019, the volunteers engaged residents at the City's annual Victorian Fair and shared information about the net zero planning process commencing in Melrose.



PHOTO ABOVE: SUSTAINABLE MELROSE BOOTHS AT MELROSE'S SEPTEMBER 2019 VICTORIAN FAIR
Melrose's Net Zero Action Plan

COMMUNITY SURVEY AND ONLINE OPEN HOUSE

In September 2020, Melrose residents were invited to participate in an online survey and provide input on the planning process. Participants were asked to share what their concerns were related to climate change and what strategies they believed the City should prioritize in the Plan. More than 500 people completed the survey. It was followed by an Online Open House in December 2020 that solicited still more feedback on the draft.

HOW CAN YOU BE A NET ZERO HERO?

Getting to net zero is a journey that will require Melrose to assemble its own A-Team. There is a place and a way for everyone in our community to contribute to, and benefit from, achieving our net zero goal. While this Net Zero Action Plan highlights the strategies and actions our municipal government will take to support our community-wide goal, we also want all members of our community to envision themselves as Net Zero Heroes on Melrose's A-Team.

Community members of all types – from residents to large employers and everyone in between – are invited to be Net Zero Heroes. Below are some ways you are encouraged to participate in Melrose's net zero journey:

Melrose Resident: Share your voice, get involved, and take action on choices in your control (e.g., complete an energy audit, insulate and air seal your home, go solar, switch to clean heating, make your next car electric) and participate in the local and state programs available to support you.

Melrose Small Business: Share your commitments with customers and staff. For those in a climate-adjacent field – such as electricians, HVAC specialists, plumbers – participate in the green economy and support “green growth” locally.

Larger Employer or Local Institution: Provide programs that assist employees in decarbonizing their homes and commute, and work with other large businesses to share experiences and support community-wide GHG emissions reductions.

Elected and Appointed Officials: Consider how the decisions your Board, Committee, or legislative body will impact Melrose's net zero goal. Advocate and vote to support policy or regulations that advance actions identified in the Net Zero Plan.

Municipal and School Staff: Lead by example with new public facility construction and renovation projects and when possible, purchase zero emission fleet vehicles. Continue to make municipal buildings and school as energy efficient as possible and add solar to new roofs as they are replaced.

Net Zero Action Roadmap

The City of Melrose developed this Net Zero Action Roadmap to inform our next five years of action to reduce greenhouse gas emissions across all sectors of the City's economy.

Informed by engagement with Melrose's Climate Action Committee members, municipal staff, and the public, the following actions have been prioritized to identify immediate next steps for the City to implement based on potential for impact.

For the five core transitions we know we need to make to achieve net zero, the City has identified **milestones** to work toward by 2030 and 2050. The **strategies** and **actions** identified in the City's Net Zero Action Roadmap all contribute to our efforts to achieve progress towards the key milestones listed below.

Make our homes and businesses super-efficient.



Electrify heating and cooking equipment.



Make walking, biking, and public transit the best way to get around.



TODAY

2030

2050

All new buildings built to the state stretch energy code.

24% of residents participate in the MassSave Program^v

All new buildings built to net zero standards.

20% of homes and businesses have undergone deep energy retrofits.

Nearly all existing homes and businesses in Melrose have had deep energy retrofits.

Approximately 12% of homes rely on electric heating, primarily low efficiency electric baseboard heating.^{vi}

80% of homes previously on fuel oil, propane, or electric baseboard heat have converted to high efficiency electric heat (heat pumps).

10% of homes currently on gas heat have converted to high efficiency electric heat.

Nearly all homes and businesses rely on high efficiency electric heating.

Approximately 27% of residents walk, bike, or take public transit to work.^{vii}

Average number of cars per household is 1.55.

All new developments are accessible by biking, walking, or connected to public transit.

Average number of cars per household is below 1.47 (e.g., vehicle miles traveled are reduced by 5%)

All key destinations in Melrose are accessible by biking, walking, or connected to public transit.

Electrify cars, trucks, buses, trains, and other ways we get around.



Less than 0.1% of vehicles registered in Melrose are zero emissions.^{viii}

60% of new vehicle purchases are zero emissions.

37% of registered vehicles are zero emissions.

Nearly all passenger and commercial vehicles registered in Melrose are zero emissions.

Green the grid and produce more renewable energy locally.



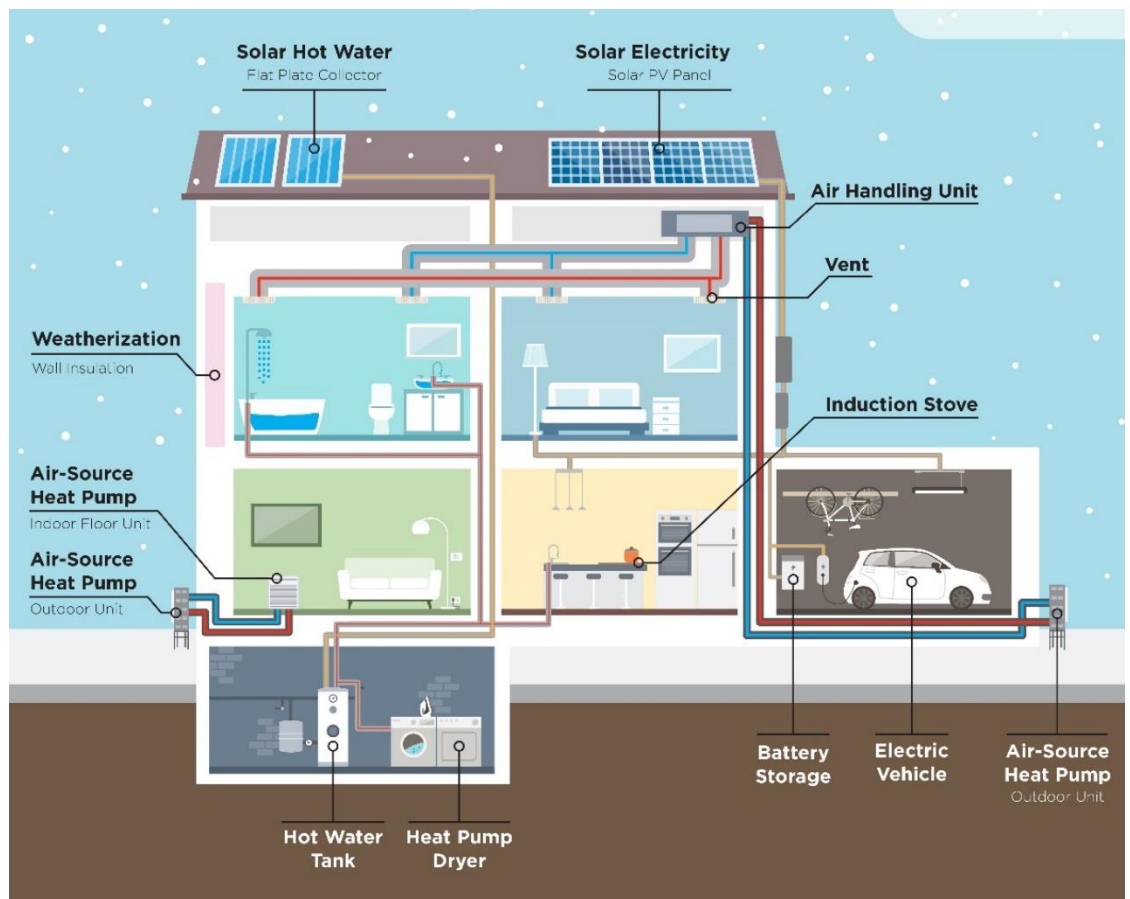
Our electricity supply comes from 21% carbon-free sources.^{ix}

Our electricity supply comes from 100% carbon-free sources.

OUR HOMES AND BUSINESSES

Making our homes and buildings super-efficient and electrifying our space and water heating and cooking are core to Melrose's Net Zero Action Plan. The City of Melrose commits to implementing actions that advance the following strategies:

- Strategy 1. Electrify fossil-fuel end uses.
- Strategy 2. Maximize uptake of residential energy efficiency and deep energy retrofits in existing buildings.
- Strategy 3. Target energy efficiency retrofits of large multi-family buildings.
- Strategy 4. Adopt policies to Incentivize energy efficiency and renewable energy in new construction and major renovations.
- Strategy 5. Lead by example with municipal buildings and advocate for net zero building policies.



INFOGRAPHIC CREDIT: MASSACHUSETTS CLEAN ENERGY CENTER

GROUND SOURCE HEAT PUMPS

An energy-efficient heating system which uses energy from the earth to efficiently heat or cool a building.

AIR SOURCE HEAT PUMPS

An energy-efficient heating system which uses electricity to transfer heat from outside to inside a building, or vice versa. The technology can also be used to heat domestic hot water.

SOLAR HOT WATER

A type of domestic hot water heating system that use sunlight to heat water using a thermal collector.

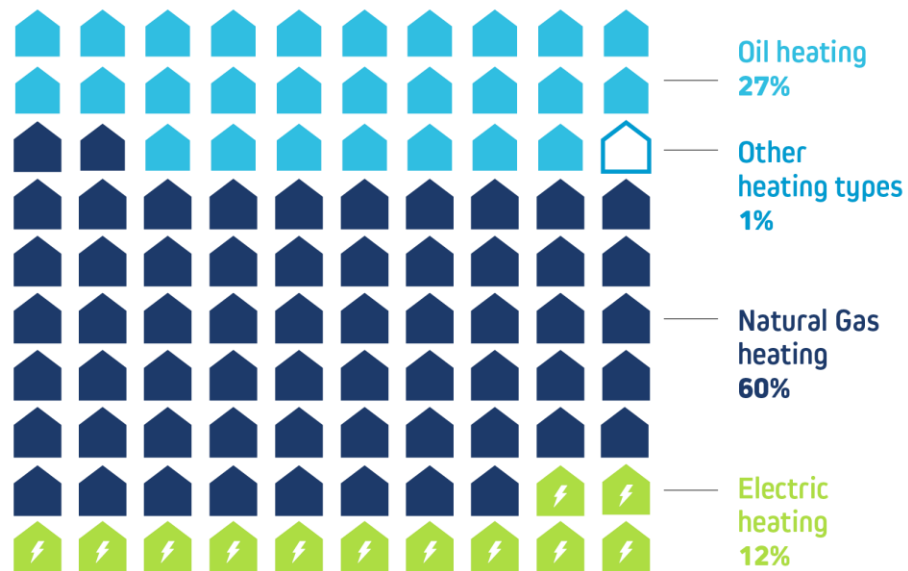
INDUCTION COOKTOPS

A type of electric cooktop with electromagnetic coils beneath a ceramic glass surface that transfers energy

In Melrose, **60 percent of building-related emissions** result from the use of home heating fuels like natural gas and fuel oil. Businesses and industry in Melrose rely less heavily on fuel oil, but the use of natural gas and fuel oil still contribute another 14 percent of building-related emissions. Melrose's older housing stock means the vast majority of homes were built before modern insulation and air sealing practices and can benefit from weatherization and energy retrofits.

Burning oil and natural gas to heat our homes and cook our food creates **66,421 metric tons** of emissions every year in Melrose. It also creates pollution both inside and outdoors. In fact, recent studies have shown that methane leaks from gas-burning stoves is far worse than previously thought.

How are homes heated in Melrose?



SOURCE: AMERICAN COMMUNITY SURVEY 2013-2017 ESTIMATES

Switching to highly efficient electric heating and cooking appliances like **ground-source** and **air-source heat pumps, solar hot water, heat pump hot water, and induction cooktops** immediately reduces carbon emissions and improves indoor air quality, and these benefits only get better as our electric grid gets cleaner. The long life of home heating systems and other appliances means it is important to electrify these systems as they are replaced, to avoid locking new fossil fuel systems that may last for ten, twenty or thirty years.

Strategy 1: Electrify fossil-fuel end uses.

ACTION 1. Create an ongoing “Electrify Melrose” program and campaign.

The City of Melrose will create an on-going “Electrify Melrose” program to help home and business owners transition from fossil fuels to lower emissions alternatives. Melrose’s previous successful Solarize, HeatSmart and Energy Challenge campaigns have shown the potential for community-based outreach campaigns to increase uptake and leverage state funding and incentives.

The new “Electrify Melrose” program would combine the following into a sustained ongoing campaign:

- Support for a range of technologies (see sidebar on previous page);
- Community “electrification coach” advisory services relying on a combination of city staff and volunteer coaches;
- Community-based marketing (outreach using local channels, website, certification program, assisting access to financial incentives);
- Partnerships with installers/manufacturers with discounted and transparent prices;
- Target high-cost oil, propane and electric baseboard heat and systems at the end of their useful life;
- Promote decarbonization planning for future electrification for homes with newer systems.

“Electrify Melrose” should operate in conjunction with home energy efficiency coaching (see Action 3) to provide one-stop shopping for energy saving measures.

Equity Considerations: Target outreach to renters, landlords, residents who speak languages other than English, and low- and moderate-income residents with electrification subsidy programs and income-based MassSave incentives.

ACTION 2. Develop and implement a mechanism for tracking home heating type in Melrose.

The City of Melrose will assess opportunities within existing City reporting mechanisms, such as the Annual City Census form, to reliably and simply collect information on residents’ home heating fuel type. Current local, state, and national datasets on home heating fuel type are limited in the level of granularity and frequency of updates. This provides a challenge to the City’s climate efforts to target and track rapid electrification of homes in Melrose.

Equity Considerations: Provide educational materials regarding different types of home heating systems and how to identify them for both homeowners and renters.

Strategy 2: Maximize uptake of residential energy efficiency and deep energy retrofits in existing buildings.

ACTION 3. Create home efficiency coaching program to assist residents with energy efficiency and deep energy retrofits.

Melrose's historic housing stock presents ample opportunities for weatherization, energy efficiency and deep energy retrofits to reduce both energy costs and greenhouse gas emissions. Home energy efficiency is in many cases the most cost-effective means to reduce emissions from the building sector and residents have indicated the need for better information and guidance in implementing energy efficiency improvements, particularly those that may go beyond MassSave's standard recommendations. Melrose's previous successful Solarize, HeatSmart and Energy Challenge programs have shown the potential for community-based programs to overcome information and cost barriers and increase uptake of energy saving and clean energy improvements.

The Melrose home efficiency coaching program will rely on a City staffperson with residential construction and energy efficiency experience as an initial point of contact to answer resident's questions, direct residents to appropriate resources and provide information on incentives and funding. A combination of City staff and volunteers can provide more in-depth coaching, working in conjunction with MassSave's evolving home energy assessments and incentives as well as the Electrify Melrose program (see Action 1).

Equity Considerations: Target outreach to renters, landlords, residents who speak languages other than English, and low- and moderate-income residents with electrification subsidy programs and income-based MassSave incentives.

ACTION 4. Opt into the state's Commercial Property Assessed Clean Energy (CPACE) law.

Melrose will explore opting into Commercial Property Assessed Clean Energy (CPACE), a financing structure that allows businesses to borrow money for clean energy projects and make repayments through an assessment on their property tax bill. CPACE allows commercial property owners to make more comprehensive clean energy upgrades and finance them with longer payback periods. CPACE financing is available in Massachusetts as of July 2020. Melrose will also advocate with state legislators to sponsor or support legislation that increases funding for incentives and financing that encourage deep energy retrofits, renewable energy, energy storage, and clean heating and cooling for businesses and residents of all income levels that prioritize expanding access to historically underserved populations (e.g., low- and moderate-income, renters, low-English-proficiency households) such as Residential PACE (RPACE) or a Green Bank similar to that of Connecticut.

Equity Considerations: Conduct outreach and education to small businesses that own commercial property in Melrose.

Strategy 3: Target energy efficiency retrofits of large multi-family buildings.

ACTION 5. Consider requiring licensing for rental units to include energy efficiency requirements for ongoing compliance.

One of the largest barriers to implementation of energy efficiency in rental units is that it requires those who own and manage the property, such as landlords and building managers, to invest in efficiency upgrades while those occupying the building units – assuming they are responsible for the utility payments – experience the benefits, including economic, quality of life, resilience, and health benefits. This is known as a “split incentive.” Rental licensing helps to address this challenge and promote energy efficiency in existing buildings by requiring that certain actions, such as energy audits and weatherization, be implemented in rental properties and pass a regular inspection during the point of leasing.

For the 30% of residents who are renters, the City will explore options to establish requirements within the rental licensing process for landlords and building managers to improve their health, safety, and welfare. This could include requirements to provide a minimum level of energy efficiency upgrades to their units. Formalize the timeline of energy efficiency measures so that landlords and building managers can implement appropriate measures strategically. Consider starting with a voluntary program with recognition for joining the program, and ramping up to required rental licensing over time.

The program should provide landlords with flexibility in how to comply, such as the ability to choose which technology, from among a prioritized list or degree of efficiency, is most appropriate. Inspections of rental unit should happen at minimum when the leaser changes, however, more regular inspections could be enforced at a standard interval of time. Results of the inspection should be publicly available for renters.

Equity Considerations: Pair implementation with protection for renters so that they are not displaced by resulting improvements to the property. Enact complementary policies and programs, such as renter protections, free renter legal aid, and renter support phone-lines.

ACTION 6. Target existing multi-family dwellings with electric baseboard or oil heat for conversion to heat pumps.

Melrose's previous outreach campaigns have demonstrated the need for targeted programs to reach residents of multi-family buildings. Many of the largest multi-family properties in the City rely on high-cost, high-emissions heating systems such as electric baseboard (Melrose Towers and Melrose Housing Authority properties) and oil (Towne Estates, Levi-Gould and Fuller House). Targeted outreach to the management of these properties can be incorporated into the Electrify Melrose program (see Action 1) but will require a specialized approach.

Equity Considerations: This action item supports equity, as many of the targeted property residents include lower- and middle-income or fixed income households.

Strategy 4: Adopt policies to mandate energy efficiency and renewable energy in new construction and major renovations.

ACTION 7. Adopt net zero stretch building energy code.

Following state action to establish a net zero stretch building energy code in 2022, as mandated under the March 2021 Next Generation Roadmap legislation, the City of Melrose will adopt a net zero stretch building energy code. Melrose will pair adoption of a net zero stretch energy code with outreach and education for developers, builders, and residents (see Action 10). The building code presents an opportunity to make buildings healthier and safer, and to transition away from onsite combustion. Today, the upfront cost differentials of building to a net zero standard are minimal, and will continue to reduce over time. It is far more cost-effective to build to a net zero standard than to retroactively retrofit the same building. Subsequently, the annual energy costs can be reduced when buildings are built to a highly efficient standard and renewables are leveraged. A net zero stretch code allows communities to ensure that new construction and major renovations will be built to net zero standards and helps ensure that buildings are not locked into high emissions for years into the future.

Equity Considerations: Engage in discussions with Environmental Justice populations in Melrose and empower community organizations to weigh-in on the code development process.

ACTION 8. Incentivize energy efficiency, electrification, and renewable energy within special permit processes.

The City of Melrose will seek to adopt and gradually strengthen requirements over time for special permits that incentivize and facilitate the implementation of net zero measures in buildings undergoing significant renovation and new construction. Over the next 30 years, a subset of buildings will undergo a significant renovation or be replaced with a new building. For these buildings, it is important to ensure that they will be both allowed and encouraged to achieve the highest possible energy and emissions reductions because those buildings may not undergo significant rebuilding for another 50 to 100 years.

Until a net zero stretch building code is adopted (Action 7), the best zoning tools for Melrose to enact are special permits that incentivize these net zero measures. Special permit processes will also be important in establishing standards beyond what may be included in the net zero stretch code (under development by the Department of Energy Resources).^x

In June 2021, the City of Melrose adopted an incentive zoning special permit that allows for appropriate increases in density in the downtown and Commuter Rail station areas for projects that provide community benefits, such as green building practices that result in energy efficiency levels exceeding building code and/or clean energy generation, which go beyond what is otherwise required in the Zoning Ordinance. This special permit can be updated as necessary over time to gradually strengthen requirements around energy efficiency, electrification, and

renewable energy in a way that does not impede the creation of new housing units in smart growth locations.

Melrose also has a special permit review process for multi-family residential uses in non-residentially zoned areas that could be updated to include standards for energy efficiency, electrification, and renewable energy to support the City's net zero goals.

Equity Considerations: Develop requirements in consultation with developers and building owners to avoid unintended impacts on energy bills.

ACTION 9. Require energy reporting for all new commercial construction one year after certificate of occupancy, or on an ongoing basis.

To support implementation of Action 8, the City of Melrose will explore options for implementing energy reporting for all new commercial, mixed use, and multifamily construction one year after certificate of occupancy. The reporting requirements for new construction in Action 8 will require Melrose to establish a structure for processing reporting as well as increased staff capacity, but it is the best way to analyze whether permitting and zoning measures are working. This policy is an important enabling action that many communities are already using to drive emissions reductions in the building sector across New England and throughout the United States.

Equity Considerations: Work with affordable housing owners and developers to ensure that the reporting requirements are structured in a way that allows them to participate.

ACTION 10. Provide training opportunities for City departments, boards and committees, realtors, and developers on Net Zero.

Since the development of a Net Zero building utilizes different building standards, calculations, and codes than are typically used in construction, building inspectors and plan reviewers may not have a familiarity with best practices. The goals of these trainings would be to familiarize inspectional services and other staff and members of boards and committees with high-performance building practices, to empower them to conduct relevant energy and performance calculations during plan review, and to enable inspectors to identify common construction mistakes and code violations in order to conduct efficient and effective inspections. A thorough curriculum will cover topics such as: LEED, Net Zero, Passive House and other high-performance standards, HERS ratings, life safety benefits of Net Zero buildings, and energy modeling. Additionally, Melrose will provide guidance to developers on permitting for Net Zero buildings.

Equity Considerations: Include focused training on net zero and net positive practices for multi-family buildings to increase the likelihood that benefits are realized by renters.

Strategy 5: Lead by example within municipal buildings and advocate for net zero building policies.

ACTION 11. Adopt net zero standards for new public buildings and major renovations.

The City of Melrose will lead by example by constructing, retrofitting and maintaining City-owned buildings to reduce energy use and maximize clean energy technology as much as feasible. Municipal buildings are the largest source of GHG emissions from municipal operations (municipal emissions overall only represents 3% of total community-wide emissions), and they also present a highly visible opportunity for the City to demonstrate the feasibility and appeal of net zero buildings.

In existing City-owned buildings (including school and municipal buildings), Melrose will complete energy audits and retro-commissioning projects that ensure that existing energy systems are operating efficiently, perform deep energy retrofits that maximize energy efficiency, and deploy renewable energy projects that provide as much on-site energy as possible. We will use the audits to identify buildings with high energy consumption and plan for deep energy efficiency retrofits. We will also evaluate buildings for on-site renewable energy suitability and build renewable energy projects at municipal properties with sufficient resource potential.

Equity Considerations: Prioritize improvements to public buildings that are utilized by residents in the community such as schools, library, and the senior center.

ACTION 12. Implement a suite of strategies to protect and plant trees.

The City of Melrose will implement a variety of strategies to protect the health of existing trees, reduce the removal of viable trees and increase the planting of new trees. Increasing the tree canopy in Melrose reduces heat islands and hot spots in the city and sequesters carbon that would otherwise go into the atmosphere. Require that every tree removed is replaced on site with a dedicated number of trees (2x or 3x). If the trees cannot be planted on site, they must be planted off-site at a location designated by the Department of Public Works with priority given to neighborhoods and streets with little tree canopy and heat islands.

In addition, adopting enhanced sustainable landscape plans for new construction in its zoning ordinances should be encouraged (see, e.g., Somerville's Green Score, which replaces inflexible "minimum landscaped areas" requirements with a point-based system that encourages higher value landscaping elements such as large trees).

Equity Considerations: Engage residents from vulnerable communities in the planning and development of the Green Score to improve the likelihood for a more equitable and impactful outcome.

GETTING AROUND MELROSE

Electrifying our transportation system and giving people choices about how they get around are core to Melrose's Net Zero Action Plan. The City of Melrose commits to implementing actions that advance the following strategies:

- Strategy 1. Encourage low-carbon modes of transportation.
- Strategy 2. Encourage uses of zero emission vehicles.
- Strategy 3. Develop zero emission vehicle infrastructure for residents, workers, and visitors.
- Strategy 4. Adopt zero emission mobility zoning measures.
- Strategy 5. Lead by example through municipal fleet electrification and advocate for community transit needs.

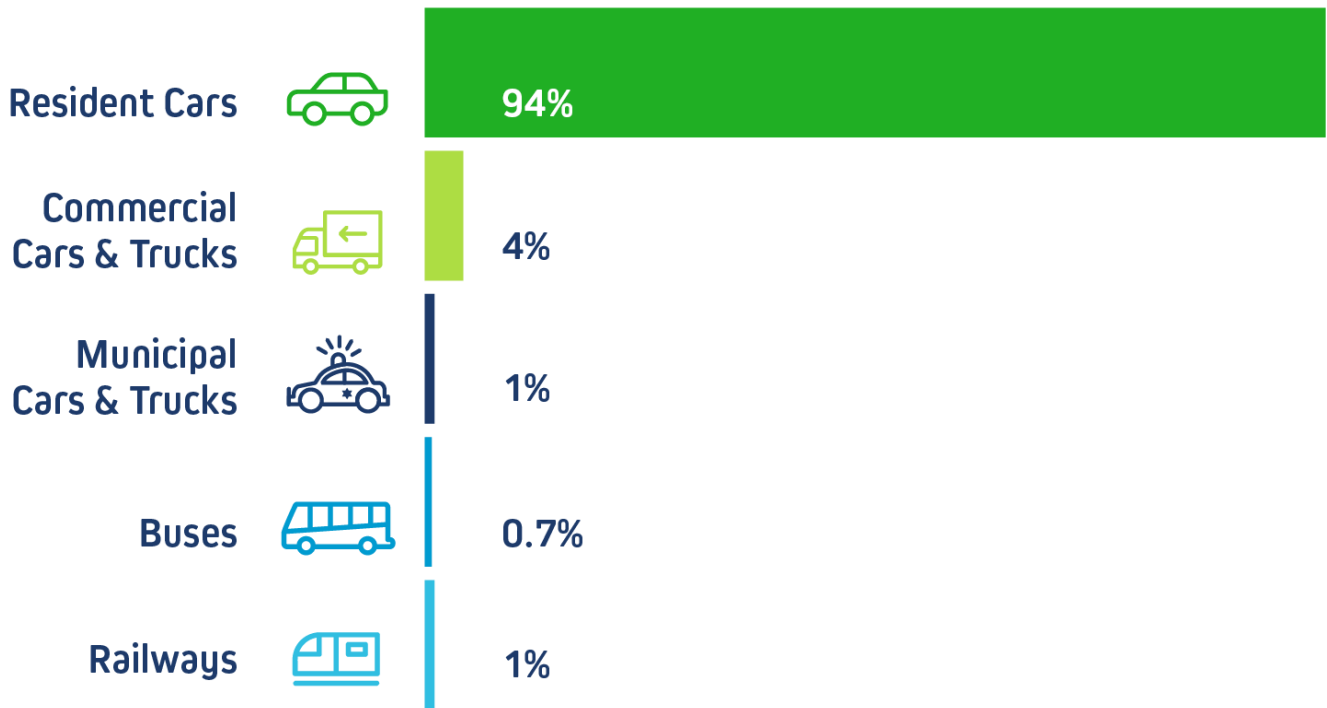


PHOTO ABOVE: MELROSE ELECTRIC VEHICLE SHOWCASE

Gasoline- and diesel-powered cars, trucks, buses, trains, and other forms of transportation accounted for **more than a third** of our community's emissions in 2017.

Electric cars and buses are cleaner, cheaper to run over time, and require less maintenance. Electric vehicles are becoming more common and more affordable every year, and the range of makes and models available at comparable price points to gasoline- and diesel-powered vehicles is set to increase immensely in the next five years.

Expanding low-carbon mobility options like walking, biking, and transit are some of the best ways to reduce transportation emissions. By designing greener and people-centered streets and sidewalks, we can make walking, biking, and public transit as easy as taking a solo trip in a personal vehicle – and reduce traffic too! These alternatives to driving will help reduce emissions and air pollution while also making residents healthier and more connected to their community.



SOURCE: MELROSE'S 2017 GREENHOUSE GAS INVENTORY

Strategy 1: Encourage low-carbon modes of transportation

ACTION 13. Develop and implement a Safe Streets Plan and pilot projects.

The City of Melrose will develop a Safe Streets Plan to identify gaps in the transportation network and inform how best to prioritize near- and longer-term projects. This effort will build on the work of the Pedestrian and Bicycle Advisory Committee and prioritize the needs of children, older adults, and people with disabilities.

The Safe Streets Plan should analyze mode share patterns, evaluate bicycle and pedestrian infrastructure needs, and make recommendations on best practices to improve bicycle and pedestrian safety and connectivity on major regional corridors and local routes with high access to important destinations (workplaces, retail, recreation, public services, etc.). This plan will also aim to connect Melrose to existing and proposed regional trails and paths, such as the Northern Strand Trail in Malden, Malden River Greenway, Tri-Community Greenway in Stoneham and the Wakefield-Lynnfield Rail Trail.

Melrose will also explore options for off-road community paths. Off-road paths that prohibit motorized vehicles are an important option to encourage residents and commuters to leave their cars. One potential area to explore is the use of the Orange Line MBTA/DCR right of way, which was first recommended in MAPC's Main Street Corridor report published in 2013.

Equity Considerations: Ensure robust engagement of vulnerable populations in the planning processes. Plan for the provision of equitable access to infrastructure investments.

ACTION 14. Expand Safe Routes to School programming.

Safe Routes to School (SRTS) a federally funded initiative of MassDOT, works with schools, communities, students, and families to increase walking and biking among elementary and middle school students in the Commonwealth. SRTS works with a variety of stakeholders to advocate for better bicycling and pedestrian infrastructure, educate students and their families about walking and biking to school safely, and provides other related technical assistance to schools. The City should adopt recommendations made by SRTS studies to make known hot spots safer.

Equity Considerations: Ensure robust engagement of vulnerable populations in the planning processes. Advocate for the provision of equitable access to infrastructure investments

ACTION 15. Support expansion of the Landline Trail and Greenway Network.

As a part of the safe streets plan in Action 13, the City will support expansion of the Landline Trail and Greenway Network and Safe Routes to School (SRTS) programming.

MAPC's Landline Trail and Greenway Plan envisions a 1,400 mile regional network of trails and greenways across the region. These trails and greenways will provide critical infrastructure and connectivity to facilitate more walking and biking throughout the region. The City will help implement the Landline vision by working with local trail groups to identify priority trail construction areas and advocating for funds at the state level for trail construction and maintenance.

Equity Considerations: Ensure robust engagement of vulnerable populations in the planning processes. Advocate for the provision of equitable access to infrastructure investments.

Strategy 2: Encourages uses of zero emission vehicles.

ACTION 16. Create an education and community engagement program to promote electric vehicle adoption

The City of Melrose will provide a suite of education and outreach services, EV ride and drives, and incentives to promote electric vehicle adoption with a focus on financing and purchase opportunities to make zero emission vehicles more affordable.

At first glance, the transition to zero emission vehicles may seem to rest squarely on consumer choices and behavioral changes of a community's residents. However, there is an important role for larger market forces, federal and state incentives, and local education and awareness building to nudge residents toward the choice that aligns with getting to net zero. The City will develop a suite of municipal outreach services that may include partnerships with nonprofits such as the Green Energy Consumers Alliance Drive Green discount program, utility EV charging and program offerings, and national programs such as National Drive Electric Week to educate Melrose residents about the benefits of EVs.

Local EV showcases at Healthy Melrose and the Victorian Fair have proven to be very effective at increasing EV purchases by residents and those should continue and expand to provide ride and drive opportunities. Giving people direct and extended experience driving an electric vehicle can reduce perceived barriers individuals may have about switching to an electric vehicle. The Portland Greater Council of Governments took this a step further with their Electric Vehicle Lending Program, which provides individuals with the opportunity to borrow an EV for up to a week. This extended exposure allows individuals to see how an EV fits into their day-to-day lifestyle.

Equity Considerations: Identify opportunities to increase the subsidies and incentives for low-income drivers and provide opportunities to access electrified transportation for people who do not own a car. Incorporate translation and accessibility into the program planning.

Strategy 3: Develop zero emission vehicle infrastructure for residents, workers, and visitors.

ACTION 17. Support awareness of on-street EV charging to provide access to infrastructure for renters and homeowners that lack access to off-street parking.

In 2021, the City partnered with National Grid on a demonstration project to test the concept of pole-mounted EV chargers. Nine locations near multifamily housing, recreation areas, and in business districts with limited off-street parking were selected in order to make EV charging more accessible to more people. Other benefits include lower installation costs and easier installation at the power source. Following the installation of 15 new utility pole-mounted EV chargers through the National Grid demonstration project in July 2021, the City will promote them widely through signage, lighting, outreach and other awareness efforts.

Equity Considerations: Perform regular and ongoing outreach to neighborhoods with high concentrations of renters where resident turnover will be more frequent.

ACTION 18. Conduct outreach and education efforts targeting businesses to encourage charging infrastructure deployment.

To support the expansion of charging stations beyond publicly owned lots and right of ways, the City will approach large employers, institutions, and retailers to connect them with funding opportunities (e.g. Volkswagen Settlement, MassDEP Electric Vehicle Incentive Program - EVIP, and National Grid's Make Ready Program) to install electric vehicle charging stations on their sites. The City will leverage connections through the Chamber of Commerce and National Grid to work with large private sector actors interested in installing electric vehicle charging stations. The City will coordinate with National Grid to ensure there is a plan for increased electric demand from the charging stations installed.

Equity Considerations: Ensure robust engagement of vulnerable populations in the planning processes to ensure equitable distribution of charging infrastructure.

ACTION 19. Expand public charging and more municipal parking lots near municipal services and facilities such as the library, schools, and additional business districts.

The City of Melrose will expand public charging at more municipal parking lots near municipal services and facilities such as the library, schools, and additional business districts.

Melrose installed an EV charger in the City Hall parking lot in 2014 and a second one at the Cedar Park commuter lot in 2017 which serve a variety of users and needs. The City will invest in additional electric vehicle charging stations in more locations to help provide the infrastructure needed to support continued EV adoption for residents, workers, and visitors. As a part of this action, the City will assess options and put in place sustainable pricing and parking policies to support management of the charging stations as utilization increases over time. Consider allowing renters and those without at-home access to charging to use the public chargers overnight with special parking permits.

Equity Considerations: Plan for equitable geographic distribution of charging stations across the community and pair with programs to reduce economic barriers to EV adoption (Action 13).

ACTION 20. Specify or adopt design guidelines for EV and PEV charging stations, signage, and wayfinding for both on- and off-street parking. Adopt regulations and enforcement policies for EV and PEV parking spaces.

Consistent wayfinding and visible signage provides the needed support for existing EV drivers to locate charging infrastructure and sends a signal to other drivers that an EV may be viable alternative by reducing range anxiety. The City will pair signage with EV specific parking regulations and incorporate these regulations into existing parking enforcement structures. The City's signage guidelines will adhere to the standards published by the Federal Highway Administration in the Manual on Uniform Traffic Control Devices. Signage requirements will include consistent guidance on parking space stencils and signage that communicates any restrictions to the use of the EV parking space. Regulations will limit use of the spot to EV drivers and impose a time limitation to increase utilization of the charging station.

Equity Considerations: Plans for and requirements around EV charging station installation should include provisions for ADA compliant spaces with access to charging stations.

Strategy 4: Adopt zero emissions mobility zoning measures.

ACTION 21. Continue to support transit-oriented development in existing overlay districts.

Recognizing its strong transportation assets, the City is committed to advancing smart growth and transit-oriented development. That is, high-density, mixed-used development near the Oak Grove Rapid Transit Station, as well as around our three MBTA Commuter Rail Stations and in our downtown. As the City of Melrose has increased its housing supply over the years, it has also remained dedicated to increasing the supply of affordable housing. While Melrose has not yet met the 10% threshold set by the Commonwealth for the percentage of housing units designated as affordable, it has reached 8% by making steady progress over the years. Melrose will continue to make progress and increase redevelopment near public transit through progressive zoning and the flexibility of the Planning Board to ease or waive parking requirements.

Equity Considerations: Include requirements for affordability and community amenities within existing overlays. This recommendation should also be paired with strategies that preserve affordable housing and protect against displacement.

ACTION 22. Adopt comprehensive parking policies to maximize efficient use of spaces, reduce use of single occupancy vehicles, and incentivize electric vehicle charging infrastructure.

Parking plays an integral role in influencing vehicle congestion, determining travel behavior, and shaping land use patterns. Not only is parking very expensive to construct, but also in many circumstances, more parking actually contributes to increased vehicular congestion. Under this policy, the City will consider the elimination of minimum parking requirements for all new residential units, establishment of parking maximums within half a mile of high-quality transit stops, creation and expansion of parking benefit districts, and incentives for developers to provide less than maximum allowable parking. There are a wide range of data-driven strategies that cities and towns can employ to encourage more efficient allocation of parking resources. Parking studies provide valuable insight as to how parking is currently utilized and can help inform how parking policies can best meet demand, often reducing the perceived need for more parking.

As a part of the incentive zoning special permit in Action 2, the City will also aim to incentivize electric vehicle charging infrastructure and on or off-site bicycle and pedestrian infrastructure in exchange for allowing increases in density.

Equity Considerations: Incorporate considerations that prioritize creation of housing units and other community amenities within parking policies.

Strategy 5: Lead by example in the municipal fleet and advocate for community transit needs.

ACTION 23. Adopt zero emission standards for the municipal fleet.

The City of Melrose will adopt a zero emission municipal fleet policy that commits to complete transition to zero emission vehicles and equipment by no later than 2035 for all vehicles with viable zero emission makes and models. This policy should also address how the vehicle purchase approval process will be managed within the municipality to ensure that all departments are adhering to the new emissions standards. The policy should include maintenance equipment such as landscaping tools and machines.

Building on the City's participation in National Grid's Fleet Advisory Services Program (FASP) begun in June 2021, municipal staff involved in fleet purchase decisions will be actively involved in the ongoing analysis. The FASP assessment will provide recommendations on electric fleet replacements, idle reduction technologies, fleet right sizing (i.e., consolidating vehicles with similar use cases and low rates of utilization), and placement of charging stations to support fleet electrification. The FASP process commits the City to revisiting and regularly updating it to account for rapid improvements in vehicle technology.

Equity Considerations: Provide opportunities for community feedback on the policy to promote greater transparency and community involvement in lead by example efforts.

ACTION 24. Advocate for community transit service needs, bus stop upgrades, and increased efficiency and electrification of the regional transit system.

The City of Melrose will continue to advocate for measures within transit planning processes at the MBTA and MassDOT that align with the City's net zero goals. Recent examples include successfully fighting MBTA service reductions on the Reading/Haverhill line with elimination of the Cedar Park station stop and the 136/137 bus routes in 2020.

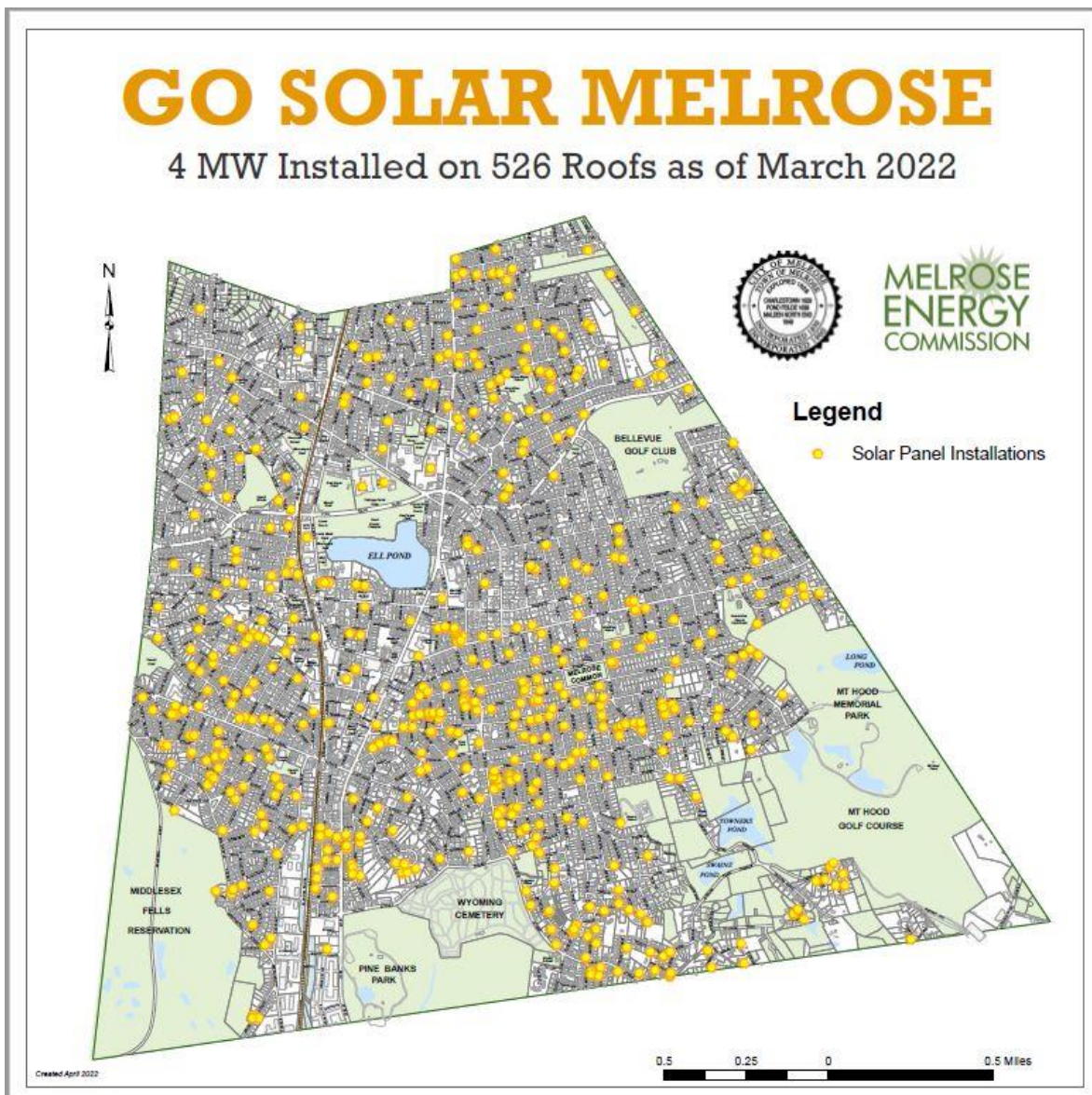
Melrose will work with the community to identify priority areas to increase access and community transit ridership. The City will also advocate during upcoming planning processes with the MBTA and MassDOT and push for improved energy efficiency and reduced carbon intensity of mass transit vehicles.

Equity Considerations: Ensure robust engagement of vulnerable populations in the planning processes. Plan for the provision of equitable access to infrastructure investments.

WHERE OUR ENERGY COMES FROM

The City of Melrose commits to implementing actions that advance the following clean energy supply strategies:

- | | |
|-------------|---|
| Strategy 1. | Maximize on-site renewables for property owners. |
| Strategy 2. | Maximize off-site community shared solar |
| Strategy 3. | Procure renewable energy for all remaining energy needs |
| Strategy 4. | Lead by example and advocate for smart electricity use. |

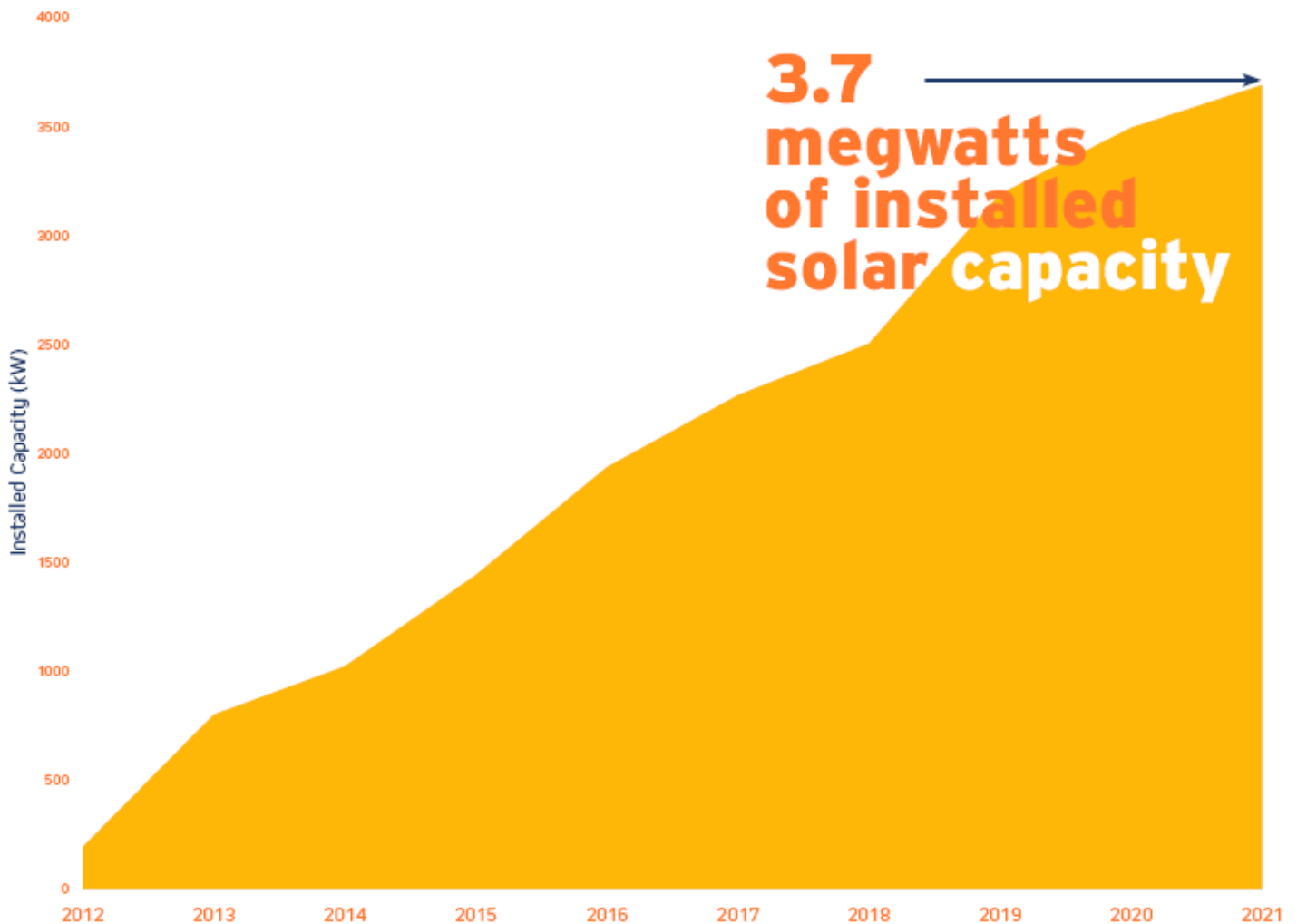


GRAPHIC ABOVE: MELROSE ROOFTOP SOLAR INSTALLATIONS THROUGH MARCH 2022. SOURCE: PERMITS

Electrification of systems that currently rely on fossil fuels (like our home heating systems, our cars, etc.) is essential to achieving our net zero goal in Melrose. However, the success of this strategy depends on fully transitioning our electric grid to renewable sources of energy.

Renewable energy comes from endlessly sustainable sources such as wind, the sun's heat or light (i.e., solar), or the earth beneath our feet (i.e., geothermal). Our electricity is getting cleaner and greener all the time thanks to state and local policies, like Melrose's electricity aggregation, but natural gas still provides most of our electricity in New England. Developing local renewable energy projects and supporting renewable energy projects through electricity aggregation and policy advocacy will help our community speed up the process of switching to clean energy.

In Melrose, more than 526 properties already have solar on their rooftops, and the production of local, renewable energy sources is growing. As of the end of 2021, Melrose's installed solar capacity was more than **3.7 megawatts**.



SOURCE: MASSACHUSETTS DEPARTMENT OF ENERGY RESOURCES, SREC I, SREC II, AND SMART QUALIFIED PROJECT DATA IN MELROSE

Strategy 1: Maximize on-site renewables for property owners.

ACTION 25. Continue to promote the EnergySage.com platform for residents who want to install solar and for renters who want to participate in community solar.

The City of Melrose will continue to promote the EnergySage.com platform for residents who want to install solar and for renters who want to participate in community solar. The City will also explore mechanisms to support access to community solar for low-income residents.

Building on the success and lessons learned from the City's implementation of Solarize Melrose in 2012 and the partnership with EnergySage that began in 2014, Melrose will continue to promote the EnergySage.com online platform for property owners who want to go solar as a shopping and education tool. The City will also promote EnergySage's community solar platform for renters and other homeowners who are unable to install rooftop solar. The City will consider the potential for additional partnerships with specific installers chosen through a competitive procurement process (see Action 1).

Equity Considerations: Identify and mitigate potential barriers to participation in community solar including long term contracts and credit score requirements.

Strategy 2: Maximize off-site community shared solar.

ACTION 26. Develop a low-income community shared solar program under the state's SMART incentives.

Melrose will explore options available to develop a low-income community shared solar program through the municipal aggregation program Melrose Community Power as authorized in the updated SMART incentives. This will include a review of near-term opportunities under the state's SMART program incentives. The City will work to ensure through project outreach and incentives that low-income residents are involved in the development of the program.

Equity Considerations: Identify and mitigate potential barriers to participation in community solar including long term contracts and credit score requirements.

Strategy 3: Procure renewable energy for all remaining needs.

ACTION 27. Pursue 100% carbon-free electricity in the Melrose Community Power by 2030.

The City of Melrose will gradually increase the amount of renewable energy in the Melrose Community Power program so the default level is 100% carbon-free by 2030, and then maintain that outcome permanently.

Melrose launched what is now called Melrose Community Power in 2015. The 2019-2021 contract set the baseline for electricity supply at 5% more local

renewables than the state's Renewable Portfolio Standard (RPS) The new 2021 – 2024 contract will increase the amount to 10%. There is also an option for 100% renewable energy. The program ensures that all additional renewables are from MA Class I RECs (Renewable Energy Credits). MA Class I RECs help to support local renewable energy since projects meeting the criteria for these credits are required by the state RPS.

The City will continue to implement this program into the future with the goal of increasing the percent of Class I RECs in the default rate to 100% renewables by 2030 as well as exploring direct off-taker opportunities in renewable energy developments. This effort will involve active monitoring of rates and the local impact on low-income ratepayers. The City will also continue the successful outreach campaign to encourage residents and businesses to opt-up to 100% Local Green.

Equity Considerations: Pay particular attention to the costs of participating compared to utility electricity costs and provide a default rate that is competitive with these prices.

Strategy 4: Lead by example and advocate for smart electricity use.

ACTION 28. Maximize the installation of clean energy resources on municipal property and purchase 100% renewable municipal electricity supply by 2030.

The City will seek to maximize the installation of clean energy resources on municipal property, including exploration of opportunities to pair solar with storage and retrofit buildings with clean heating and cooling systems.

The City has already installed rooftop solar on every available municipal building roof where there is space and the roof condition makes it feasible including on the high school, middle school and the Public Works Operations Facility. Melrose will demonstrate leadership in this sector by maximizing the installation of solar PV on municipal buildings as more roofs are replaced, such as Memorial Hall and several elementary schools. Solar canopies should be considered again for parking lots such as at the high school and the City Hall parking lot among others. After assessing the feasibility of municipal sites for renewable energy, the City will consider a plan for installation and procure these systems where they are feasible.

In addition, Melrose should progressively increase the amount of renewable electricity in its municipal supply contracts until reaching 100% for municipal operations by 2030. Melrose has already started this transition by contracting for an additional 10% MA Class 1 RECs in the last year of the current contract for 2023. At all points of implementing this action, the City will consider cost impacts to taxpayers in Melrose.

Equity Considerations: Provide opportunities for community feedback on the policy to promote greater transparency and community involvement in lead by example efforts.

ACTION 29. Support state legislation and policies to de-carbonize the region's energy supply.

The City of Melrose will advocate for state policies that increase the Renewable Portfolio Standard (RPS) and promote incentives specifically for low to moderate income (LMI) residents such as LMI solar incentives, and programs and procurements that further decarbonize the region's energy supply, such as offshore wind development.

The current RPS puts the state on track to reach 67% renewable energy by 2030. The Next Generation Roadmap for Massachusetts Climate Policy, enacted in 2021, raised the rate of increase to 3% from 2025 through 2029 at which point the rate of increase returns to 2% and puts the state on a pathway to achieve approximately 80% renewable generation by 2050.^{xi}

An increase in the renewable portfolio standard helps to advance the installation of new renewable energy systems across the state. Since many utility programs are driven by the requirements of the RPS, an increase in renewables also improves the financial incentives for renewables and helps to lower soft costs for renewable energy by the increase in competition.

Equity Considerations: Ensure that policies include measures to directly benefit Environmental Justice communities across Massachusetts and increase access to clean energy for all.

ACTION 30. Advocate for expansion of demand response programs and creation of distinct time of use rates.

The City of Melrose has participated in a variety of demand response programs since 2012 with much success. The City should continue these initiatives and also advocate for expansion of demand management programs and the creation of distinct time of use rates for different types of buildings and electric vehicle charging. This will include support for smart metering infrastructure, demand response programs, energy storage infrastructure and advocacy for additional incentives for energy storage.

Equity Considerations: Ensure that policies include measures to directly benefit Environmental Justice communities across Massachusetts with a focus on affordability.

ACTION 31. Advocate to regulators and utilities to greatly accelerate the repair of gas leaks and support the phase-out of the natural gas distribution supply network.

Melrose will advocate for the repair of super-emitter gas leaks and coordinate information and data sharing with National Grid. Repairing gas leaks improves residents' health, makes the gas network more efficient and helps to eliminate difficult to account for GHG emissions. The City will advocate for additional efforts for detection and mitigation of gas leaks and work to expedite the repair of local leaks.

Melrose will also advocate for regulatory changes that help accelerate the phasing-out of the gas distribution network as is being investigated by the MA Department of Public Utilities at the request of the MA Attorney General's Office. We await the outcome of the investigation that was launched in October 2020.

Since the repair of gas leaks and replacement of pipes involves digging up and repairing streets, they can be costly and require multiple permits. Melrose will continue to work with National Grid to see where priorities for gas leak repair and street repair overlap and explore opportunities to develop a shared schedule to complete multiple repairs in the same street opening and re-pavement. This action could also include consideration of ways to expedite permitting for these repairs, including an online permitting system such as Roadworks. Melrose will continue its participation in the Multi-Town Gas Leaks Initiative, working with communities throughout the region to accelerate leak repair by improving data sharing, communication, and coordination between municipalities and National Grid.

Equity Considerations: Ensure equity in setting street repair and gas leak repair priorities throughout Melrose.

Implementation: What's Next?

This Net Zero Action Plan is just the beginning for the City of Melrose. The transitions required to achieve net zero in Melrose necessitates an all-hands-on-deck approach – both internally, with City staff and elected bodies, and externally, with local community partners and municipal peers. The following initiatives will be spearheaded by the City's Sustainability Manager which will facilitate implementation of the actions prioritized in this plan.

GOVERNANCE

Develop internal practices and structures for multi-departmental coordination on climate action.

The Mayor will appoint key members of City boards, commissions, and departments to join a Net Zero Action Task Force. Task Force members will support the Sustainability Manager in implementing and reporting on the progress of priority actions identified in the plan. The Task Force will also be structured to be a two-way exchange of information – providing opportunities to increase climate literacy and technical capacity across city government.

One of the first objectives of the Net Zero Action Task Force will be to align municipal department responsibilities with the goals of the Net Zero Action Plan and identify any areas where municipal activities may be acting in opposition to the goals of the plan.

This process will result in the incorporation of a climate framework into the goals of every municipal department.

Report on metrics of success and update greenhouse gas inventory on a semi-annual basis.

The City's GHG inventory will be the core tool for benchmarking progress toward its net zero goal. The City will update its GHG inventory as new data sets are made available, using MAPC's Community Greenhouse Gas Inventory Tool. The expectation is that this will occur every two years. The 2017 GHG inventory will be used as the baseline to measure progress against.

Revisit and update the plan every five years.

The Net Zero Action Plan is intended to serve as a living document that will be revisited and revised regularly by the Sustainability Manager and the Net Zero Action Task Force to ensure our community is always pushing ahead and successfully working toward its goals.

PUBLIC ENGAGEMENT AND EDUCATION

Building community capacity to make the electrification transition

A core component of the community engagement plans to convene focus groups during the planning process had to be put on hold due to the COVID-19 pandemic. As such, the City will prioritize building and strengthening relationships with vulnerable populations that are not currently reached by the City's communication and engagement channels. In addition, broad and continued outreach to stakeholders both in city government and in the wider community is necessary in order to increase understanding of what the transition to net zero entails. There is a role for everyone in this challenge and more education on how to get there is needed.

PARTNERSHIP AND COLLABORATION

Coordinate climate action regionally with the Metro Mayors Coalition municipalities

Coordinated action with surrounding municipalities will be a component to the success of Melrose's Plan. The City will continue to connect and share best practices with staff in nearby Metro Boston municipalities, utilizing existing regional networks like the Metropolitan Mayors Coalition Climate Preparedness Task Force to identify regional priorities and programs for implementation.

Net Zero Action Roadmap Summary

NAVIGATING THE ROADMAP

Timeframe

Specifies the anticipated timeframe needed for full implementation of the action.

IN PROCESS Currently underway by City staff

SHORT TERM Less than one year (<1 yr)

INTERMEDIATE TERM Two to three years (2-3 yrs)

LONG TERM Four to five years (4-5 yrs)

Potential Co-Benefits

This section identifies the high-level potential for the types of benefits, in addition to greenhouse gas emissions reductions, the City may experience through effective implementation of the action.



PUBLIC HEALTH BENEFITS



ECONOMIC BENEFITS



ENERGY SYSTEM BENEFITS



ENVIRONMENTAL BENEFITS

Internal Partners

Although the Sustainability Manager is primarily responsible for spearheading implementation, Internal Partners are identified to assist with implementation. Acronyms used refer to Office of Planning and Community Development (OPCD) and Department of Public Works (DPW).

Other Partners

Other partners are identified within municipal operations and the broader community-at-large that will be critical to successful implementation of the action. Acronyms used refer to Melrose Energy Commission (MEC), Massachusetts Clean Energy Center (MassCEC), Massachusetts Department of Energy Resources (DOER).

Funding Needs

This category specifies whether the type of funding need is capital, operations, staff or volunteer time. Particularly intensive actions call out where the City may need additional dedicated staff for successful implementation.

OUR HOMES AND BUSINESSES:

2030 MILESTONES

- All new buildings built to net zero standards.
- 20% of homes and businesses have undergone deep energy retrofits.
- 80% of homes previously on fuel oil, propane, or electric baseboard heat have converted to high efficiency electric heat (heat pumps).
- 10% of homes currently on gas heat have converted to high efficiency electric heat.

2050 MILESTONES

- Nearly all existing homes and businesses in Melrose have had deep energy retrofits.
- Nearly all homes and businesses rely on high efficiency electric heating.

STRATEGY 1: Electrify fossil-fuel end uses

ACTION	TIMEFRAME	INTERNAL PARTNER	OTHER PARTNERS	FUNDING NEEDS				
ACTION 1. Create an ongoing "Electrify Melrose" program and campaign.	<1 yr	Energy Coach	MEC, MassSave, DOER, National Grid, MassCEC, MassEnergize	Dedicated staff person Operating expenses	●	●		
ACTION 2. Develop and implement a mechanism for tracking home heating type in Melrose.	<1 yr	GIS Specialist	City Clerk, Assessors, Inspectional Services	Staff time				

STRATEGY 2: Maximize uptake of residential energy efficiency and deep energy retrofits in existing buildings

ACTION	TIMEFRAME	INTERNAL PARTNER	OTHER PARTNERS	FUNDING NEEDS				
ACTION 3. Create a home efficiency coach program to assist residents with energy efficiency and deep energy retrofits.	<1 yr	Existing volunteer coaches	MEC, MassSave, DOER, National Grid, MassCEC, Abode Energy	Dedicated staff person Operating expenses	●	●	●	

ACTION 4.	Opt into the state's Commercial Property Assessed Clean Energy (CPACE) law.	2-3 yrs	Chief Assessor	Chamber of Commerce, commercial property owners	Operating expenses
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STRATEGY 3: Target energy efficiency retrofits of large multi-family buildings

ACTION	TIMEFRAME	INTERNAL PARTNER	OTHER PARTNERS	FUNDING NEEDS				
ACTION 5.	Consider requiring licensing for rental units to include energy efficiency requirements for ongoing compliance.	4-5 yrs	Building Commissioner	Renters, property owners and managers, Board of Health	Dedicated staff person Operating expenses	●		●
ACTION 6.	Target existing multi-family dwellings with electric baseboard or oil heat for conversion to heat pumps.	2-3 yrs	Energy Coach	MassSave, National Grid, DOER, MassCEC, MassEnergize	Staff time	●	●	

STRATEGY 4: Adopt policies to mandate energy efficiency and renewable energy in new construction and major renovations

ACTION	TIMEFRAME	INTERNAL PARTNER	OTHER PARTNERS	FUNDING NEEDS				
ACTION 7.	Adopt net zero stretch building energy code.	<1 yr	Director Strategic Initiatives	OPCD, Planning Board, MEC, building developers, Inspectional Services, City Council	Staff time	●	●	●
ACTION 8.	Incentivize energy efficiency, electrification, and renewable energy within special permit processes.	2-3 yrs	Planning Director	OPCD, Inspectional Services, Planning Board, Zoning Board, building developers	Staff time	●	●	
ACTION 9.	Require energy reporting for all new commercial	2-3 yrs	Building Commissioner	OPCD, Planning Board, Zoning Board	Staff time		●	●

construction one year after certificate of occupancy, or on an ongoing basis.

ACTION 10.	Provide training opportunities for City departments, boards and committees, and developers to support Net Zero.	<1 yr	Director Strategic Initiatives	Certified trainers, MEC, DOER, National Grid, MassCEC	Operating expenses Staff time	●
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STRATEGY 5: Lead by example within municipal buildings and advocate for net zero building policies

	ACTION	TIMEFRAME	INTERNAL PARTNER	OTHER PARTNERS	FUNDING NEEDS				
ACTION 11.	Adopt net zero standards for new public buildings and major renovations.	<1 yr	Planning Director	Mayor's Office, DPW, Inspectional Services, MEC, City Council	Staff time	●	●	●	●
ACTION 12.	Implement a suite of strategies to protect and plant trees.	2-3 yrs	City Engineer	DPW Green Team	Capital expenses	●			●

GETTING AROUND MELROSE

2030 MILESTONES

- All new developments are accessible by biking, walking, or connected to public transit.
- Average number of cars per household is below 1.47 (e.g., vehicle miles traveled are reduced by 5%)
- 60% of new vehicle purchases are zero emissions.
- 37% of registered vehicles are zero emissions.

2050 MILESTONES

- All key destinations in Melrose are accessible by biking, walking, or connected to public transit.
- Nearly all passenger and commercial vehicles registered in Melrose are zero emissions.

STRATEGY 1: Encourage low-carbon modes of transportation

	ACTION	TIMEFRAME	INTERNAL PARTNER	OTHER PARTNERS	FUNDING NEEDS				
ACTION 13.	Develop and implement a Safe Streets Plan and pilot projects.	2-3 yrs	Planning Director	DPW, OPCD, Pedestrian and Bicyclist Committee	Capital funding Staff time	●			●
ACTION 14.	Expand Safe Routes to School programming.	2-3 yrs	School Department	DPW, OPCD, Pedestrian and Bicyclist Committee	Grant funding	●			●
ACTION 15.	Support expansion of the Landline Trail and Greenway Network.	4-5 yrs	Planning Director	DPW, OPCD, Pedestrian and Bicyclist Committee	Capital funding	●			●

STRATEGY 2: Encourage use of zero emission vehicles

	ACTION	TIMEFRAME	INTERNAL PARTNER	OTHER PARTNERS	FUNDING NEEDS				
ACTION 16.	Create an education and community engagement	In process	Energy Coach	Green Energy Consumers Alliance, MEC, EV Taskforce	Dedicated staff person	●	●		●

program to promote electric vehicle adoption.

Operating expenses

STRATEGY 3: Develop zero emission vehicle infrastructure for residents, workers, and visitors

ACTION		TIMEFRAME	INTERNAL PARTNER	OTHER PARTNERS	FUNDING NEEDS				
ACTION 17.	Support awareness of on-street EV charging to provide access to infrastructure for renters and homeowners that lack access to off-street parking.	In process	Communications Coordinator	MEC, DPW, National Grid	Volunteer time Staff time	●	●		
ACTION 18.	Conduct outreach and education efforts targeting businesses to encourage charging infrastructure deployment.	<1 yr	Energy Coach	MEC, OPCD, Chamber of Commerce	Volunteer time Staff time	●			
ACTION 19.	Expand public charging in more municipal parking lots near services and facilities such as the library, schools, and additional business districts	2-3 yrs	DPW	National Grid, EV charging station vendors, MassEVIP	Capital funding Operating expenses Grant funding	●	●		
ACTION 20.	Specify or adopt design guidelines for EV and PEV charging stations, signage, and wayfinding for both on- and off-street parking. Adopt regulations and enforcement policies for EV and PEV parking spaces.	<1 yr	Planning Director	OPCD, Planning Board	Staff time	●			

STRATEGY 4: Adopt zero emissions mobility zoning measures

	ACTION	TIMEFRAME	INTERNAL PARTNER	OTHER PARTNERS	FUNDING NEEDS				
ACTION 21.	Continue to support transit-oriented development in existing overlay districts.	In process	Planning Director	OPCD, Planning Board	Staff time	●	●		●
ACTION 22.	Adopt comprehensive parking policies to maximize efficient use of spaces, reduce use of single occupancy vehicles, and incentivize electric vehicle charging infrastructure.	2-3 yrs	Planning Director	OPCD, Planning Board	Staff time	●			●

STRATEGY 5: Lead by example in the municipal fleet and advocate for community transit needs

	ACTION	TIMEFRAME	INTERNAL PARTNER	OTHER PARTNERS	FUNDING NEEDS				
ACTION 23.	Adopt zero emission standards for the municipal fleet.	<1 yr	Strategic Initiatives Director	DPW Director, City Department Heads, National Grid Fleet Advisory Services Program	Staff time	●	●	●	
ACTION 24.	Advocate for community transit service needs, bus stop upgrades, bus rapid transit, and increased efficiency and electrification of the regional transit system.	In process	Mayor's Office	OPCD, MBTA, MassDOT, and Pedestrian and Bicyclist Committee	Staff time	●	●	●	●

OUR ENERGY SUPPLY

2030 MILESTONES

- Our electricity supply comes from 100% carbon-free sources.

STRATEGY 1: Maximize on-site renewables for property owners

ACTION	TIMEFRAME	INTERNAL PARTNER	OTHER PARTNERS	FUNDING NEEDS				
ACTION 25. Continue to promote the EnergySage platform for residents who want to install solar; renters who want to participate in community solar	In process	Energy Coach	MEC, EnergySage.com	Volunteer time Staff time		●	●	

STRATEGY 2: Maximize off-site community shared solar

ACTION	TIMEFRAME	INTERNAL PARTNER	OTHER PARTNERS	FUNDING NEEDS				
ACTION 26. Develop a low-income community shared solar program under the state's SMART incentives	2-3 yrs	Strategic Initiatives Director	DOER, solar developers, electric supplier, PowerOptions, Good Energy	Staff time Grant funding		●	●	

STRATEGY 3: Procure renewable energy for all remaining needs

ACTION	TIMEFRAME	INTERNAL PARTNER	OTHER PARTNERS	FUNDING NEEDS				
ACTION 27. Pursue 100% carbon-free electricity in the Melrose Community Power by 2030.	In process	Strategic Initiatives Director	Good Energy, electricity supplier, MEC, DPU, DOER	Staff time		●	●	●

STRATEGY 4: Lead by example and advocate for smart electricity use

ACTION		TIMEFRAME	INTERNAL PARTNER	OTHER PARTNERS	FUNDING NEEDS				
ACTION 28.	Maximize the installation of clean energy resources on municipal property and purchase 100% renewable municipal electricity supply by 2030	4-5 yrs	City Engineer	DPW, OPCD, PowerOptions, National Grid, solar developers	Capital expense Grant funding	●	●		
ACTION 29.	Support state legislation and policies to de-carbonize the region's energy supply	In process	Mayor's Office	State Legislature, City Council	Staff time	●	●	●	
ACTION 30.	Advocate for expansion of demand response programs and creation of distinct time of use rates.	4-5 yrs	Mayor's Office	State Legislature, City Council, DPU	Staff time		●	●	●
ACTION 31.	Advocate to regulators and utilities to greatly accelerate the repair of gas leaks and support the phase-out of the natural gas distribution supply network	4-5 yrs	Mayor's Office	DPW, State Legislature, City Council, DPU	Staff time	●	●		●

Appendix A: Net Zero Roadmap Milestone Supporting Documentation

The targets set forth in the Net Zero Roadmap for the year 2030 are designed to provide concrete, measurable milestones that will allow the City to assess whether it is on track to meet the Net Zero by 2050 goal. These targets are calculated to be consistent with Massachusetts' climate goals as set forth in "An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy" adopted in 2021, which establishes an emissions limit of not less than 50% reduction from 1990 levels by 2030 (and 75% reduction by 2040), and are tailored to Massachusetts' specific challenges as a largely residential community with an older historic housing stock.

Baseline

The Massachusetts statewide target is assessed based on a 1990 emissions baseline; due to progress made since 1990 (primarily due to reductions in emissions intensity of the electric grid) the state has achieved approximately a 23 % reduction in statewide emissions since 1990, so the target equates to a 35% reduction from current emissions levels.

Melrose does not have data on city emissions from 1990 and is using its 2017 Greenhouse Gas Inventory as the baseline for assessing progress on mitigation goals. For the purpose of setting 2030 targets this plan assumes that Melrose is in a similar position to the state as a whole in terms of the progress made between 1990 and 2017, so the targets are calculated to achieve a 35% reduction from the 2017 baseline. This seems to be a reasonable assumption since Melrose's population in 2017 (28,367) is very similar to that in 1990 (28,112); note Melrose's population declined significantly and then rebounded during that time, so the pattern of emissions trends between 1990 and 2017 may be quite different from that of the state as a whole.

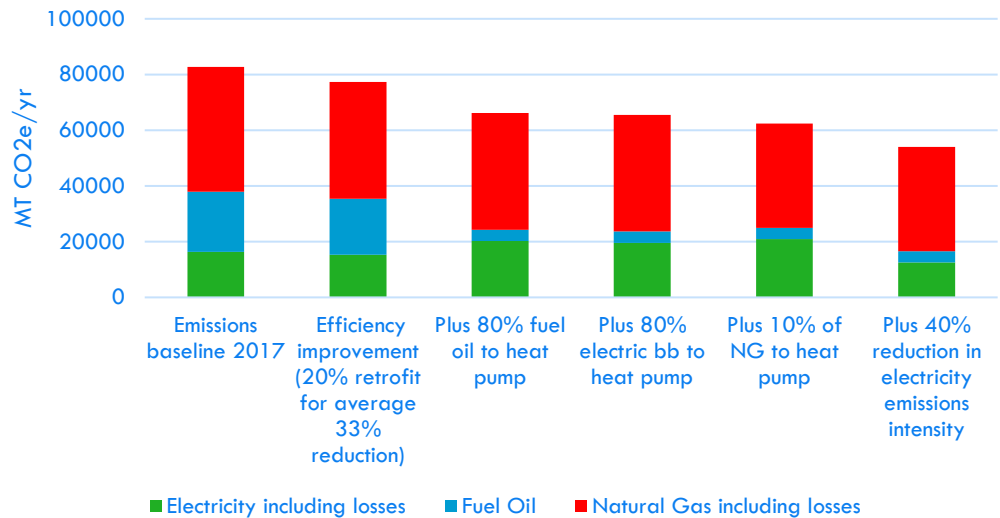
Building sector targets

Reducing emissions from the building sector involves a combination of reducing energy usage through improving building envelopes, improving the energy efficiency of building heating and cooling systems, and electrifying those systems so that they can be run on clean renewable electricity. These changes build on one another; for example, switching from oil heat to electric heat pump reduces emissions through the greater efficiency of the heat pump system and also due to the lower emissions intensity of electricity as a power source, and there will be further emissions reductions from those systems over time as the electric grid becomes cleaner.

The chart below illustrates the cumulative impact of the energy efficiency, heat pump conversion and electric grid clean energy targets to achieve the 2030

emissions reduction target. Note that these targets represent one pathway to achieving the goal; shortfalls in one area can be made up by improved progress in other areas, and it is important to keep track of all of the measures to ensure that overall progress is on track.

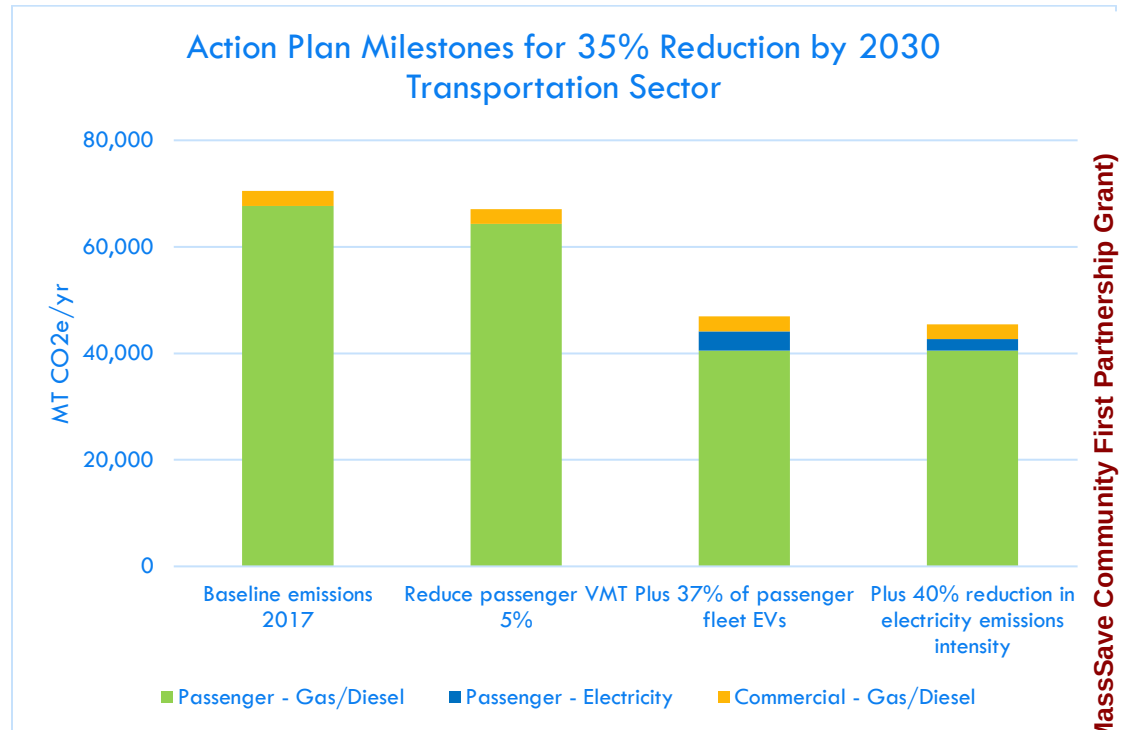
Action Plan Milestones for 35% Reduction by 2030 Building Sector



Transportation

Reducing emissions from the transportation sector involves a combination of reducing vehicle miles, improving the energy efficiency of vehicles, and electrifying vehicles so that they can be run on clean renewable electricity. These changes build on one another; for example, modern electric vehicles use less energy to run and also reduce emissions due to the lower emissions intensity of electricity as a power source, and there will be further emissions reductions from those systems over time as the electric grid becomes cleaner.

The chart below illustrates the cumulative impact of reducing vehicle miles and transitioning to electric vehicles to achieve the 2030 emissions reduction target. Currently approximately 12% of passenger vehicles in Melrose are replaced by new vehicles each year; assuming linear progress towards a goal of 60% of new cars electric in 2030, the percent of registered vehicles that would be EV in 2030 should be about 37%.



Clean electricity

The transition to clean renewable sources of electricity is essential to achieving Melrose's net zero goals, and reduction in the emissions intensity of the electric grid is incorporated into the target calculations for the building and transportation sector. The overall intensity of the electric grid is largely dependent on state policy, but Melrose has committed to targeting 100% of electricity from renewable resources through increasing local renewable generation and through power purchasing programs.

End Notes

- ⁱ [https://earthobservatory.nasa.gov/world-of-change/global-temperatures#:~:text=According%20to%20an%20ongoing%20temperature,2%C2%B0%20Fahrenheit\)%20since%201880.](https://earthobservatory.nasa.gov/world-of-change/global-temperatures#:~:text=According%20to%20an%20ongoing%20temperature,2%C2%B0%20Fahrenheit)%20since%201880.)
- ⁱⁱ <https://climate.nasa.gov/news/2865/a-degree-of-concern-why-global-temperatures-matter/>
- ⁱⁱⁱ "Governor Baker Signs Climate Legislation to Reduce Greenhouse Gas Emissions, Protect Environmental Justice Communities," Governor's Press Office, March 21, 2021, <https://www.mass.gov/news/governor-baker-signs-climate-legislation-to-reduce-greenhouse-gas-emissions-protect-environmental-justice-communities>
- ^{iv} "Environmental Justice Populations in Massachusetts," MA Executive Office of Energy and Environmental Affairs, <https://www.mass.gov/info-details/environmental-justice-populations-in-massachusetts#interactive-map>
- ^v "Residential Nonparticipant Customer Profile Study," DNV GL, February 6, 2020, Table 7.2. Community outreach metric table: dual fuel, p.94, https://ma-eeac.org/wp-content/uploads/MA19X06-B-RESNONPART_Report_FINAL_v20200228.pdf
- ^{vi} "Housing Tenure by Fuel Type by Municipality," American Community Survey (ACS), 2014-2018, <https://datacommon.mapc.org/browser/datasets/191>
- ^{vii} "Transportation to Work from Residence by Municipality," American Community Survey (ACS), 2014-2018, <https://datacommon.mapc.org/browser/datasets/38>
- ^{viii} "Massachusetts Vehicle Census Summary Statistics for GHG Inventories (Municipal)," Metropolitan Area Planning Council, 2014, <https://datacommon.mapc.org/browser/datasets/412>
- ^{ix} Melrose Community Power Program webpage, <https://mcp.cityofmelrose.org/>
- ^x According to MGL Chapter 40A Section 9, "Zoning ordinances or by-laws may also provide for special permits authorizing increases in the permissible density of population or intensity of a particular use in a proposed development; provided that the petitioner or applicant shall, as a condition for the grant of said permit, provide certain open space, housing for persons of low or moderate income, traffic or pedestrian improvements, installation of solar energy systems, protection for solar access, or other amenities."
- ^{xi} <https://malegislature.gov/Laws/SessionLaws/Acts/2021/Chapter8>

NARRATIVE APPRAISAL REPORT**PROJECT**

Proposed Drain Relocation

PROPERTY-LARGER PARCEL

Single Family Residential Property
9 Wildwood Road
Melrose, MA
8,000 Sq Ft of SRB Zoned Land with a
2,133 Sq Ft Cape Style Dwelling

PROPERTY OWNER

Andrew F. Tobin and Katherine O. Tobin

PARCEL TO BE ACQUIRED

Proposed 12' Wide Easement 1,200 sf Permanent Easement

DATE OF VALUATION

January 28, 2022

PREPARED FOR

Vonnie Reis, P.E.
City Engineer
City of Melrose
Engineering Division-City Hall
562 Main Street
Melrose, MA 02176

PREPARED BY

Avery Associates
282 Central Street
Post Office Box 834
Acton, Massachusetts 01720
TEL: 978-263-5002
FILE NO. 22003/2022003

Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

TABLE OF CONTENTS

	<u>Page</u>
Table of Contents.....	1
Transmittal Letter (Fee Only).....	2
Introduction – Summary of Salient Facts and Conclusions.....	4
Date of Value Estimate and Property Inspection.....	4
5-Year Sales History.....	4
Scope of the Appraisal.....	5
Estimated Exposure Time.....	6
Definition of Market Value.....	6
Property Rights Appraised.....	6
Assumptions and Limiting Conditions.....	7
Extraordinary Assumptions and Hypothetical Conditions.....	8
Municipal Data; Location and Neighborhood.....	8
Property Assessment and Real Estate Tax Liability.....	17
Zoning and Restrictions.....	18
Description of Land and Improvements (Before Acquisition).....	18
Property Plan.....	19
Photographs.....	21
Proposed Rights of Way Plan (Sketches).....	25
Descriptions of Parcels to be Acquired.....	27
Highest and Best Use Analysis (Before/After).....	27
Description of Land and Improvements (After Acquisition).....	28
Valuation – Approaches to Value.....	28
Land Valuation.....	29
Reconciliation and Final Estimate of Damages.....	38
Certification of the Appraiser.....	39
Addenda (in order of presentation)	
• Allocation of Damages	
• Subject Property Deed	
• Comparable Land Sales Location Map	
• Comparable Sales Data Sheets	
• Qualifications	

Avery Associates

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282 Central Street

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jon@averyandassociates.com

February 1, 2022

Vonnie Reis, P.E.
City Engineer
City of Melrose
Engineering Division - City Hall
562 Main Street
Melrose, MA 02176

RE: Single Family Residential Property
9 Wildwood Road
Melrose, MA
8,000 Sq Ft of SRB Zoned Land with a
2,133 Sq Ft Cape Style Dwelling

Dear Ms. Reis:

In accordance with your request, we are pleased to transmit the appraisal report detailing our opinion of the impact on market value resulting from the proposed permanent easement at the underlying property referenced above.

The proposed easement is part of a drain relocation project and will affect the single family residential property containing 8,000 sq ft of land at 9 Wildwood Road in Melrose, MA.

The proposed easement is:

Proposed 12' Wide Easement	1,200 sf	Permanent Easement
----------------------------	----------	--------------------

The complete appraisal developed in support of the value opinions is presented in the narrative format and is qualified by certain definitions, limiting conditions and certifications presented in detail in the appraisal report.

This appraisal has been completed in accordance with the *Uniform Standards for Professional Appraisal Practice* (USPAP 2020-2021) and is intended to comply with the Local Public Agency (LPA) Appraisal Guidelines of the Massachusetts Department of Transportation (MassDOT).

Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

February 1, 2022
 Vonnie Reis, P.E.
 City Engineer

As a result of our analysis, it is our opinion that the value of the property to be acquired and the damages to the remainder, if any, based upon our independent appraisal and the exercise of our professional judgment as of the effective date of appraisal (January 28, 2022) is as follows:

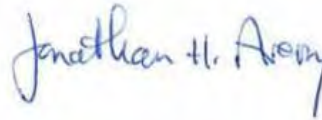
Parcel #	Area (sf)	Acquisition Type	Final Estimate of Damages
Proposed 12' Wide Easement	1,200	Permanent Easement	\$ 48,000

This letter must remain attached to the report, which contains 42 pages plus related exhibits, in order for the value opinion set forth to be considered valid.

Respectfully submitted,



Christopher H. Bowler, MAI, CRE
 Massachusetts Certified General
 Real Estate Appraiser #495



Jonathan H. Avery, MAI, CRE
 Massachusetts Certified General
 Real Estate Appraisers #26

Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

SUMMARY OF SALIENT FACTS AND CONCLUSIONS

OBJECTIVE & PURPOSE: The objective and purpose of this appraisal is to estimate the market value of the property affected and any legally compensable damages resulting from the acquisition of land and/or rights in land as determined by the laws of the Commonwealth of Massachusetts.

CLIENTS & INTENDED USERS: The Town of Melrose.

CURRENT USE OF THE PROPERTY: Single family residential.

BRIEF DESCRIPTION OF UNDERLYING PROPERTY: The larger property consists a single family property that includes an 8,000 sq ft lot and a two story, 2,133 sq ft cape style dwelling. The property is located in the Upham Park neighborhood of Melrose.

PARCELS TO BE ACQUIRED: The proposed easement is as follows:

Proposed 12' Wide Easement 1,200 sf Permanent Easement

OWNER OF RECORD: Andrew F. Tobin and Katherine O. Tobin.

DATE OF VALUE ESTIMATE: January 28, 2022.

DATE OF REPORT: February 1, 2022.

ZONING: SRB, Single Family Residential.

HIGHEST AND BEST USE BEFORE ACQUISITION: It is our opinion that the highest and best use of the subject property is for its continued single family residential use.

HIGHEST AND BEST USE AFTER ACQUISITION: It is our opinion that the highest and best use of the subject property is for its continued single family residential use.

IDENTIFICATION AND HISTORY OF SUBJECT PROPERTY: The following is the address, assessors, and legal reference for the subject property:

<u>Address</u>	<u>Town</u>	<u>Assessors</u>	<u>Size of</u>	<u>Current</u>	<u>Legal</u>
		<u>Map</u> <u>Lot</u>	<u>Site (ac)</u>	<u>Owner</u>	<u>Reference (Bk/Pg)</u>
9 Wildwood Road	Melrose	H9 51	8,000	Andrew F. Tobin Katherine O. Tobin	71283/483

Sales History: The current owners of the subject property acquired it on July 9, 2018 for \$675,000 from Kathleen A. Thorsen. This sale is recorded in Book 71283 Page 483 at the Middlesex South Registry of Deeds. This sale came after the property was on the market for sale for 24 days with Bill Donahue of Century 21 Sexton & Donahue. Prior to this 2018 sale there had been no sale of the property in over 10 years.

A copy of the deed referenced above can be found in the Addenda to this report.

ESTIMATE OF DAMAGES:

Parcel #	Area (sf)	Acquisition Type	Final Estimate of Damages
Proposed 12' Wide Easement	1,200	Permanent Easement	\$ 48,000

APPRAISED BY: Christopher H. Bowler, MAI, CRE
Jonathan H. Avery, MAI, CRE
Avery Associates
Post Office Box 834
282 Central Street
Acton, Massachusetts 01720

COMPETENCY STATEMENT: The appraisers are experienced in the valuation of the subject property type and in the subject market area.

SCOPE OF THE APPRAISAL: Christopher H. Bowler, MAI, CRE inspected the subject property on January 24, 2022 with property owners Andrew and Katherine Tobin, and Vonnice Reis and Jason Coy of the City of Melrose. Photographs of the property were taken at this time.

In addition to the inspections, Mr. Bowler:

- Reviewed the proposed taking plan with City of Melrose officials and discussed the terms of the easement.
- Obtained additional information regarding the subject property from the City of Melrose Assessor's and the Middlesex South Registry of Deeds.
- Gathered information on comparable residential land sales and restricted, low utility land sales in the Melrose and entire Greater Boston markets.
- Confirmed and analyzed the data and utilized Sales Comparison Approach techniques in order to estimate the total damages that will result from the proposed taking from the larger 8,000 sq ft subject property.

This appraisal has been completed in accordance with the *Uniform Standards for Professional Appraisal Practice* (USPAP 2020-2021) and is intended to comply with the Local Public Agency (LPA) Appraisal Guidelines of the Massachusetts Department of Transportation (MassDOT).

Mr. Avery reviewed the report and concurred with the value estimate.

EXPOSURE TIME: The Dictionary of Real Estate, 6th Edition, defines ***Exposure Time*** as:

"The estimated length of time the property interest being appraised would have been offered on the market prior to the hypothetical consummation of a sale at market value on the effective date of appraisal. Exposure time is always presumed to occur prior to the effective date of appraisal." (p105)

Small fee simple acquisitions and proposed easements are not commonly marketed because the demand for them typically arises from the specific need of a single party. Therefore, to estimate an easement's exposure time we consider the time required to create, approve, draw up the plan an easement document, have the parcels appraised (if required) and negotiate a final payment figure. Exposure time is considered to happen prior to the date of valuation. It is our opinion, based on above criteria, that a reasonable exposure time for the subject easement is 6 to 12 months.

MARKET VALUE IS DEFINED AS FOLLOWS:

Under established law, the criterion for just compensation is the *market value* of the property taken. The courts in the Commonwealth of Massachusetts have defined market value, as used in eminent domain proceedings, as:

"The highest price, in terms of money, which a hypothetical willing buyer would pay a hypothetical willing seller in an assumed free and open market, with neither party being under any obligation or compulsion to buy or sell." (1)

We have completed our analysis under the 'State Rule.' Therefore, the methodology applied herein is summarized as:

Value of the Acquisition
(Plus) + Severance Damages
(Less) - Special Benefits
Value Difference

Severance damage is defined as "damages to the remainder property caused by a partial taking." (2) Special Benefits are defined as "benefits that arise from the peculiar relation of the land in question to the public improvement, usually resulting in a change in its highest and best use." (3) These are benefits that accrue to the property remaining after the acquisition.

PROPERTY RIGHTS APPRAISED: The property rights appraised in the subject property are a combination of fee simple, and less than fee simple as described in the Description of Land and Improvements section of this report: Fee simple is defined as:

"Absolute ownership unencumbered by any other interest or estate. A fee simple estate is subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat." (4)

(1) Epstein V. Boston Housing Authority (1944) 58 N.E. 2nd 135, 317 ass 297.

(2) Principles of Right of Way, 4th Edition, 2012 Page 366

(3) Dictionary of Real Estate Appraisal 5th Edition Page 182.

(4) The Dictionary of Real Estate Appraisal, Appraisal Institute, Chicago, IL 2015, Sixth Edition - Page 90

CONSIDERATION OF HAZARDOUS SUBSTANCES IN THE APPRAISAL PROCESS:

Although no specific geotechnical engineering data has been provided, it is our assumption that the property is free and clear of any hazardous wastes or contaminating substances, as specified in applicable municipal, state and federal regulations or laws. In the event that this is not the case, the value as estimated herein may vary to the extent of contamination and the cost of cleanup.

As of the date of valuation the subject property is not included as either a contaminated site or a location to be investigated by the Bureau of Waste Site Cleanup of the Department of Environmental Protection, Commonwealth of Massachusetts. It is our assumption in this report, therefore, that the subject site is not a contaminated site. However, if the subject site is found to be contaminated, the value estimate contained herein will change.

ASSUMPTIONS AND LIMITING CONDITIONS

This appraisal report has been made with the following general assumptions:

1. No responsibility is assumed for the legal description or for matters including legal or title considerations. Title to the property is assumed to be good and marketable unless otherwise stated.
2. Before the taking, the property is appraised free and clear of any or all liens or encumbrances.
3. Responsible ownership and competent property management are assumed.
4. The information furnished by others is believed to be reliable. However, no warranty is given for its accuracy.
5. All engineering is assumed to be correct. The plot plans and illustrative material in this report are included only to assist the reader in visualizing the property.
6. It is assumed that there are no hidden or unapparent conditions of the property, subsoil, or structures that render it more or less valuable. No responsibility is assumed for such conditions or for arranging for engineering studies that may be required to discover them.
7. It is assumed that there is full compliance with all applicable federal, state, and local environmental regulations and laws unless noncompliance is stated, defined, and considered in the appraisal report.
8. It is assumed that all applicable zoning and use regulations and restrictions have been complied with, unless a nonconformity has been stated, defined, and considered in the appraisal report.
9. It is assumed that all required licenses, certificates of occupancy, consents, or other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this report is based.

10. It is assumed that the utilization of the land and improvements is within the boundaries or property lines of the property described and that there is no encroachment or trespass unless noted in the report.

This appraisal report has been made with the following general limiting conditions:

1. The distribution, if any, of the total valuation in this report between land and improvements applies only under the stated program of utilization. The separate allocation of land and building must not be used in conjunction with any other appraisal and are invalid if used.
2. Possession of this report, or a copy thereof, does not carry with it the right of publication.
3. The appraiser, by reason of this appraisal, is not required to give further consultation, testimony, or be in attendance in court with reference to the property in question unless arrangements have been previously made.
4. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the appraiser, or the firm with which the appraiser is connected) shall be disseminated to the public through advertising, public relations, news, sales, or other media without the prior written consent and approval of the appraiser.
5. Any value estimated provided in the report apply to the entire property, and any proration or division of the total into fractional interests will invalidate the value estimate, unless such proration or division of interests has been set forth in the report.
6. The forecasts, projections, or operating estimates contained herein are based upon current market conditions and anticipated short-term supply and demand factors. These forecasts are, therefore, subject to changes in future conditions.

HYPOTHETICAL CONDITIONS & EXTRAORDINARY ASSUMPTIONS

The final estimate of damages is based upon the *hypothetical condition* that the proposed easement has occurred or is in place as of the date of valuation.

MUNICIPAL PROFILE & MARKET ANALYSIS

The subject property is located in the eastern Middlesex County community of Melrose. Surrounding communities are Wakefield on the north; Saugus on the east; Malden on the south; and Stoneham on the west. Its population per the 2020 U.S. Census is 29,817, up 10.5% from the 2010 U.S. Census. Downtown Boston is 7 miles to the south of Melrose.

Melrose is a densely developed small city within a triangular region north of Boston formed by I-95, I-93, and Route 1. It is primarily a residential community with a good school system, an abundance of nearby open space, and a quaint Victorian era downtown featuring popular restaurants and stores.

The city has its own hospital; Melrose-Wakefield Hospital and its own cultural identity that includes the 100-year old *Melrose Symphony Orchestra*.

Another component of life in Melrose is its varied open space and recreation facilities. *Ell Pond* is a large natural feature in Melrose's center. Melrose's recreational facilities include two golf courses, *Pine Banks Park*, and *Morelli field*, a state-of-the-art baseball facility. The western portion of the city is comprised of portions of the massive, 2,575 acre *Middlesex Fells Reservation* which contains extensive trails, several ponds, and varying terrain that includes rock cliffs, dense forest and open meadows.

Region – Melrose is within a region just north of Boston bordered by I-93, I-95, and U.S. Route 1. Of the abutting communities Wakefield and Stoneham are perhaps most similar to Melrose in terms of character and demographics. Malden is a blue collar city connected to Boston via the Orange Line of the MBTA subway system. And Saugus is a unique community in which residential neighborhoods are bisected by Route 1, a four mile highway featuring extensive retail and restaurant opportunities and to many, representative of 'suburban sprawl' at its best/worst.

The following is breakdown of these communities by population, density, income, and real estate values:

	2020*	Area	Density	2020*	Average **
<u>Town</u>	<u>Population</u>	<u>(sq mi)</u>	<u>(pers/sq mi)</u>	<u>Median HH Income</u>	<u>SF Home \$ Past Year</u>
Melrose	29,817	4.8	6,250.9	\$ 106,955	\$ 811,680
Malden	66,263	5.1	13,043.9	\$ 65,975	\$ 611,907
Stoneham	23,244	6.7	3,469.3	\$ 101,549	\$ 733,245
Wakefield	27,090	7.9	3,429.1	\$ 100,278	\$ 742,986
Saugus	28,619	11.8	2,425.3	\$ 88,667	\$ 586,934
Massachusetts	7,029,917	10,565.0	665.4	\$ 81,215	\$ 666,607

* Source: U.S. Census Data

** Source: MLS



Economic & Market Conditions: When completing an analysis of real property, it is necessary to have a proper perspective of economic conditions as of the date of valuation. Economic conditions play a significant role in the price paid for real estate at any given time.

As 2022 begins the economy continues to expand and rebound from a brief, but deep recession in 2020 caused by the COVID -19 pandemic and the shut-down of many economies world-wide for a 6-12 week period.

We will now look at several economic indicators to measure the current health of the economy.

ECONOMIC GROWTH (growth in the U.S. GDP)

Annualized Growth Rate	
2021 Q4	6.9%
2021 Q3	2.3%
2021 Annual	5.7%
2020 Annual	-3.5%
2019 Annual	2.3%
2018 Annual	2.9%
2017 Annual	2.2%
2016 Annual	1.5%
2015 Annual	2.6%
2014 Annual	2.4%
2013 Annual	2.2%

(Gross Domestic Product is the total market value of the goods and services produced by a nation's economy during a specific period of time).

EMPLOYMENT/UNEMPLOYMENT

	Town of <u>Melrose</u>	Middlesex <u>County</u>	<u>Massachusetts</u>	<u>U.S.</u>
Most Recent Month	2.5%	2.6%	3.9%	3.9%
	New Jobs <u>Created</u>	Unempl. <u>Rate</u>		
<u>United States</u>				
Last Mos.; Dec 2021	199,000	3.9%		
Average Last 12 Mos.	537,333	5.4%		

STOCK MKT, COMMODITY & INTEREST RATE TRENDS

	Beginning Price <u>1-Jan-22</u>	Closing Price <u>28-Jan-22</u>	Change Since <u>1/1/2022</u>	<u>S & P 500</u> <u>Returns</u>
Dow Jones Industrial	36,338	34,725	-4.44%	2021 +26.90%
S&P 500	4,766	4,432	-7.01%	2020 +16.30%
London Gold \$ fix/oz	1,829	1,792	-1.99%	2019 +30.43%
Crude Oil \$ per barrel	75.21	87.29	16.06%	2018 - 6.20%
				2017 +19.42%
				2016 +9.53%
				2015 -0.72%
				2014 +11.4%
10 Year Treasury	1.51%	1.77%	16.97%	

CONSUMER CONFIDENCE

Source: Conference Board

2022	January	113.8	
2021	January	88.9	
2020	January	130.4	
2019	January	121.7	
2018	January	124.3	
2017	January	111.6	
2016	January	97.8	
2015	January	103.8	(1985=100)

CASE-SHILLER HOME PRICE INDEX

%Change

3 Year Change

		Greater Boston	<u>from Prev. Year</u>	<u>in Price</u>
Current	Nov-21	281.8	13.2%	30.17%
1 Year Earlier	Nov-20	248.9	10.7%	
2 Years Earlier	Nov-19	224.8	3.8%	
3 Years Earlier	Nov-18	216.5	-----	

The growth* in the U.S. economy picked up in the 4th quarter of 2021 to an annualized rate of 6.9% after anemic growth in the 3rd quarter. (*GDP growth; the value of all goods and services produced here; the official 'scorecard' for the economy). For the year, GDP growth was 5.7% in 2021. This comes after COVID-19 caused a decline in 2020. Growth was expected to be more robust in 2021. However, labor and raw materials shortages, combined with two different resurgences in infections of COVID-19, lessened growth versus initial forecasts. GDP growth in Massachusetts was a bit more robust, coming in at 8.2% in the 4th quarter and 3.7% in the 3rd quarter of 2021 respectively.

The **employment figures** show continued improvements in the employment market since the depths of the COVID-19 pandemic. The last months figure of +199,000 new jobs was positive, but a disappointment from economists projections. The employment market is in a unique position due to COVID-19. Lackluster job growth is not due to a lack of available jobs. Rather, open jobs are remaining unfilled as people are either reluctant to rejoin the workforce because of fears over COVID-19 or generous state unemployment benefits are encouraging workers to 'stay home' instead of taking the new job. As of December of 2021 a record 11 million open positions remained unfilled.

The **stock market** has been on a wild ride the past 3+ years. In 2018, the market declined 6.20% in terms of the S&P 500 Index, the largest annual decline in 10 years. But in 2019 the market rebounded sharply finishing up over 30% for the year. For 2020 the market rose +16.3% after having plunged over 30% in the 1st quarter of the year. For 2021 there was another robust increase, at 26.9%. Thus far in 2022 the market is off to a down start, with the S&P 500 off 7.01% as investors are being spooked by rising inflation and interest rates.

The *Conference Board Consumer Confidence Index* declined slightly in January after two straight increases in November and December. The rise of the *Omicron* variant of COVID-19 along with surging inflation and rising interest rates are beginning to take a toll on consumers psyche.

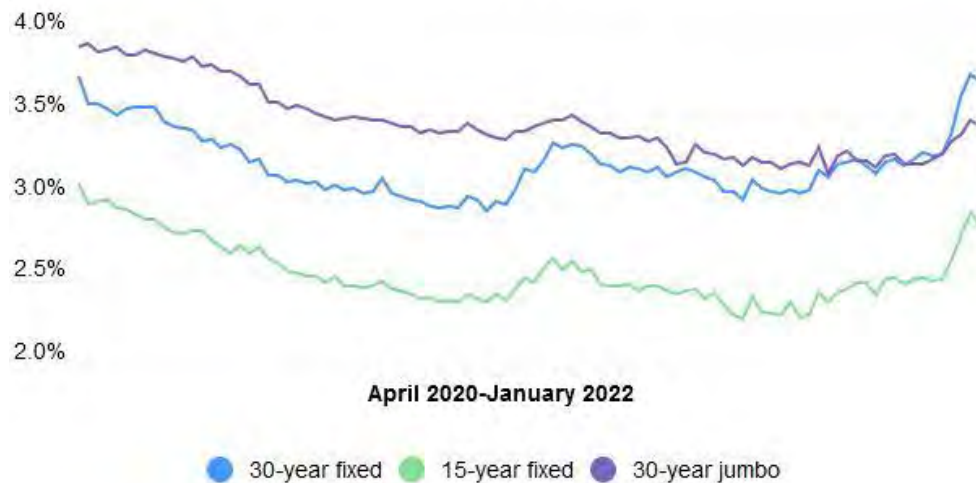
The Conference Board, who compiles the index, suggests a reading above 90 translates into an economy on solid footing while a reading above 100 reflects stronger economic growth. Consumer confidence numbers are considered a leading economic indicator, and they have historically been good predictors of consumer spending for the next three to six months. As consumer spending is roughly 70% of the U.S. economy that is no trivial matter. As of the date of valuation the index was near a record high at 130.4.

The **residential housing market** in Massachusetts has been quite strong over the past five to seven years. An index considered reliable by many market professionals is the Case-Shiller Home Price Index. This data includes only repeat sales of homes. The most recent data from the Case-Shiller Home Price Index listed on the previous page indicates that we are up 13.2% in terms of pricing from one year ago in Massachusetts, and an aggregate increase of 30.17% from three years ago. Extremely limited inventory of homes, yet strong demand is causing the price increases. It should be noted however, that the pace of increase is beginning to slow. The Case Shiller index is up 13.2% year over year, but has been stagnant since September of 2021.

Interest/Mortgage Rates: Mortgage rates fell this week following a surge in the first weeks of 2022. The average rate on 30-year mortgages fell to 3.71 percent from 3.75 percent last week, according to Bankrate's weekly survey of large lenders.

Mortgage experts expect rates to continue to climb from the all-time bottom achieved in January 2021. A year ago, the benchmark 30-year fixed-rate mortgage was at 2.93 percent. Four weeks ago, the rate was 3.4 percent. The 30-year fixed-rate average for this week is 0.78 percentage point higher than the 52-week low of 2.93 percent.

The rate on a 30-year mortgage averaged 3.71% as of Jan. 26.



Source: Bankrate national survey; figure includes points

Fixed-rate mortgages follow the benchmark 10-year U.S. Treasury Bond. When bond prices fall, yields or rates rise. Bond prices typically fall when investors are *confident* in the economy and market conditions warrant them putting their money into investments like stocks, with higher risk but higher yield opportunities. The inverse is also true. When investors are nervous about global and economic conditions there is a flight to buy 10-year U.S. Treasury Bonds, which increases their price and lowers their interest rate.

Global concerns about the coronavirus and its impact on the economy *had* pushed investors to safe assets like treasuries, which in turn pushed long term rates to historic lows. However, with a surge in government spending surrounding the COVID-19 pandemic, along with supply and labor shortages in the economy, inflation has surged to 40 year highs and interest rates are under pressure to rise to contain it. The Federal Reserve has signaled that it will raise rates in a move to rein in inflation. The official inflation figure for December 2021 came in at 7%, its highest level since 1982 and a harbinger of higher mortgage rates. Mike Fratantoni, chief economist at the Mortgage Bankers Association, predicts the average rate on a 30-year mortgage will reach 4% by late 2022.

Melrose and Massachusetts Single Family Residential Market Snapshot: To get a more defined look at current market conditions and where it may be headed, we have looked at MLS statistics for current listings, pending sales, and total sold relating to single family homes in Melrose, Middlesex County, and the State as a whole. The following is a breakdown of this data:

<u>VOLUME OF SALES/LISTINGS TRENDS</u>					<u>PRICE TRENDS</u>		
		#	%		Average Price	%	
<u>ACTIVE LISTINGS</u>				<u>Change</u>		<u>Change</u>	
Current Supply of Single Family Homes	Melrose	5	Dow n	-16.67%	\$ 1,221,960	Up	28.45%
Supply of Single Family Homes 1 Year Ago	Melrose	6	----	----	\$ 951,300	----	----
Current Supply of Single Family Homes	Middlesex County	330	Dow n	-30.53%	\$ 1,601,731	Up	6.28%
Supply of Single Family Homes 1 Year Ago	Middlesex County	475	----	----	\$ 1,507,154	----	----
Current Supply of Single Family Homes	Massachusetts	2,182	Dow n	-24.97%	\$ 1,130,534	Up	1.45%
Supply of Single Family Homes 1 Year Ago	Massachusetts	2,908	----	----	\$ 1,114,366	----	----
<u>PENDING SALES</u>							
# of SF Homes; Went Under Agrmnt; Past Year	Melrose	253	Dow n	-4.53%	\$ 748,911	Up	4.23%
# of SF Homes; Went Under Agrmnt; Previous 12 mos.	Melrose	265	----	----	\$ 718,497	----	----
# of SF Homes; Went Under Agrmnt; Past Year	Middlesex County	12,081	Up	0.57%	\$ 873,480	Up	9.79%
# of SF Homes; Went Under Agrmnt; Previous 12 mos.	Middlesex County	12,012	----	----	\$ 795,566	----	----
# of SF Homes; Went Under Agrmnt; Past Year	Massachusetts	55,992	Dow n	-5.61%	\$ 653,663	Up	10.71%
# of SF Homes; Went Under Agrmnt; Previous 12 mos.	Massachusetts	59,322	----	----	\$ 590,421	----	----
<u>CLOSED SALES</u>							
Total Closed Sales of SF Homes; Past Year	Melrose	249	Unch.	0.00%	\$ 811,680	Up	8.51%
Total Closed Sales of SF Homes; Previous 12 mos.	Melrose	249	----	----	\$ 748,031	----	----
Total Closed Sales of SF Homes; Past Year	Middlesex County	11,665	Up	4.79%	\$ 898,429	Up	14.13%
Total Closed Sales of SF Homes; Previous 12 mos.	Middlesex County	11,132	----	----	\$ 787,176	----	----
Total Closed Sales of SF Homes; Past Year	Massachusetts	53,590	Dow n	-1.78%	\$ 666,507	Up	14.80%
Total Closed Sales of SF Homes; Previous 12 mos.	Massachusetts	54,561	----	----	\$ 580,573	----	----
SOURCE: MLS Statistics;							

From a developers/seller's standpoint, the ideal results from these statistics would be *decreasing* inventory, *increasing* sales activity, both pending and closed, and rising prices.

The market at present is plagued by a lack of inventory and has been since 2019. This can be seen in the sharp decrease in listings presented above, and now is also showing up in the number of pending and closed sales. These figures are declining too. The decline in sales activity is certainly not due to a decline in demand. If this were the cases, then prices would be declining as well. However, prices are rising significantly as shown above and by looking back at the Case-Shiller Index.

The high demand, low inventory market is not what one would expect during a global pandemic. But the market at present, and for most of the past 24 months, has been characterized by a lack of inventory, strong demand and rising prices. The market had been aided by historically low mortgage rates. However, mortgage rates are now on the rise. It remains to be seen what this rise will have on the residential housing market.

Melrose Only Residential Market Snapshot: Below are the median house price trends for just Melrose over the past 10 years. The overall trend is for rising prices, at an annual average of 6.94%. The market struggled after the 2008 economic crisis and recession but has generally been on the rise consistently since 2014.

Melrose Median SF Home Price

SOURCE: MLS

<u>Period</u>	<u>Median Price</u>	<u>% Change from Prior Year</u>	<u>Total 10 Year % Change</u>	<u>Average Annual % Change</u>
2021	\$ 775,000	6.30%	94.24%	6.94%
2020	\$ 729,100	11.57%		
2019	\$ 653,500	0.54%		
2018	\$ 650,000	5.35%		
2017	\$ 617,000	11.67%		
2016	\$ 552,500	9.49%		
2015	\$ 504,625	5.79%		
2014	\$ 477,000	9.97%		
2013	\$ 433,750	8.44%		
2012	\$ 400,000	0.25%		
2011	\$ 399,000	-----		

Based upon a review of all of the data and indices, a +6% annualized appreciation rate has been applied in the valuation sections to follow.

COMMENTS/CONCLUSIONS: We draw the following conclusions from a review of the data presented above and a review of market activity:

- As of the date of valuation, the economy is recovering after experiencing a severe ‘hit’ during 2020 as a result of the closure of most economies due to the COVID-19 pandemic. While market and economic conditions are strong, resurgence in the disease at times have caused conditions to regress. A ‘return to normal’ is not yet at hand. Most downtown office buildings nationwide are still not at pre-COVID-19 capacity in terms of employees.
- Inflation has returned to the economy and is causing some concerns moving forward. Oil prices are up 13+% year to date after rising twice that amount in 2021. When inflation is present there is pressure for interest rates to rise to contain it. Rising interest rates tend to damper real estate markets. The annualized inflation rate for 2021 was 7.0%, the highest in 40 years.
- Consumer confidence remains at a solid level, slightly decreasing in January of 2022 from December. The current level suggests consumers are optimistic about the future but are concerned about growing inflation and the new *Omicron* variant of COVID-19.
- The stock market is negative for 2022 but rose 26.9% in terms of the S&P 500 Index for all of 2021.
- The residential housing market in Melrose and most Massachusetts communities is quite strong and in favor of sellers. This is not what one might expect during a global pandemic. However limited inventory and strong demand is causing rising prices. Extremely low mortgage rates *had* aided the market. However, these rates are beginning to rise to combat rising inflation.

Each of these factors has been taken into consideration with the valuation of the subject property.

NEIGHBORHOOD ANALYSIS

The larger parcel subject property is located on the easterly side of Wildwood Road in the *Upham Park* neighborhood of Melrose. *Upham Park* is on the eastern edge of the city. Its distance from key places and roadways are as follows:

- Downtown Melrose is 1.3 miles west.
- The Saugus line is 2 blocks or 1,000 feet east.
- Route 1 and the Square One Mall are 1 mile east.
- Melrose-Wakefield Hospital is 1.2 miles west.
- Access to I-93 is 4.5 miles west.
- The 2,575 acre Middlesex Fells Reservation conservation area is 3 miles to the west.

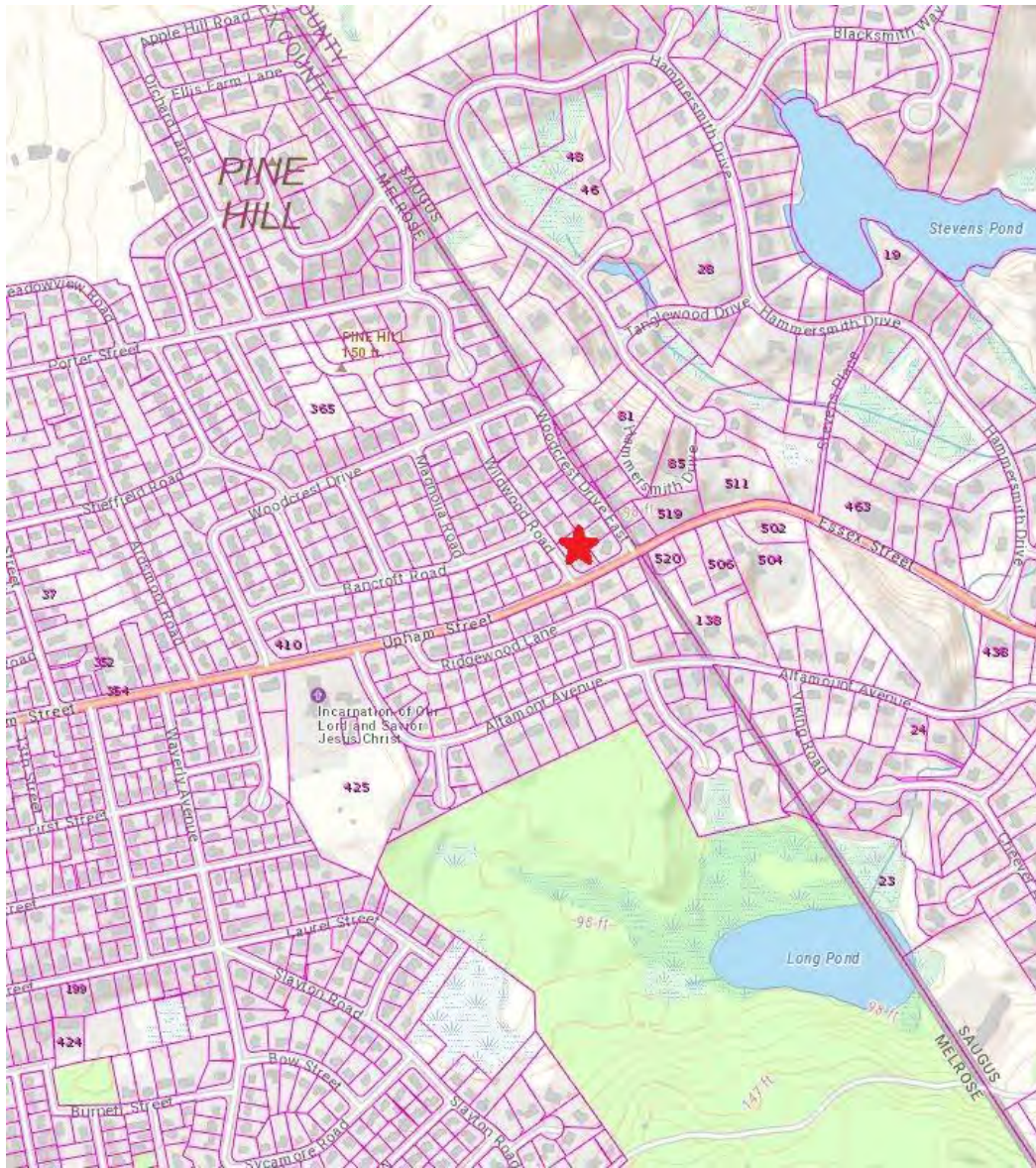
The subject, *Upham Park* neighborhood, is comprised of single family homes primarily built between 1950 and 1962 on lots ranging in size from 8,000 to 12,000 sq ft. Housing styles include cape-cod, ranch, colonial and split level. Recent prices range from \$525,000 to \$870,000. The higher prices are for homes that have typically been added onto since their original construction and have been recently renovated.

Homes and infrastructure in the subject neighborhood are generally well kept.

Favorable/Unfavorable Factors: *Favorable* factors for the subject location include its proximity to major highways and shopping; the Melrose-Wakefield Hospital; and the good condition of most properties in the neighborhood.

An unfavorable factor is that the subject is close to Upham Street, which is a major roadway in town connecting the Downtown area to Route 1 in Saugus. Upham Street can be busy at times and create traffic noise.

All features have been taken into consideration in the valuation of the subject property.



TAX DATA

The following is the current assessment and tax burden for the subject property:

<u>Address</u>	<u>Town</u>	<u>Assessors</u>		<u>Size of Site (ac)</u>	<u>Fiscal Year</u>	<u>Current</u>	<u>FY 2022</u>	<u>FY 2022</u>
		<u>Map</u>	<u>Lot</u>			<u>Total Assessment</u>	<u>Tax Rate (per 1000)</u>	
9 Wildwood Road	Melrose	H9	51	8,000	2022	\$ 708,000	\$10.57	\$ 7,483.56

Based upon a review of comparable sales in Melrose, the current assessment by the town is resonable in our opinion. M.G.L. Chapter 59 calls for properties to be assessed at 100% of their fair market value.

The following are the assessments for the property for the previous two fiscal years:

		Assessors		Size of	Fiscal	Current	FY 2021	
				Parcel (ac)	Year	Total	Tax Rate	FY 2021
<u>Address</u>	<u>Town</u>	<u>Map</u>	<u>Lot</u>	<u>Parcel (ac)</u>	<u>Year</u>	<u>Assessment</u>	<u>(per 1000)</u>	<u>Taxes</u>
9 Wildwood Road	Melrose	H9	51	8,000	2021	\$ 643,900	\$11.00	\$ 7,082.90

		Assessors		Size of	Fiscal	Current	FY 2020	
				Parcel (ac)	Year	Total	Tax Rate	FY 2020
<u>Address</u>	<u>Town</u>	<u>Map</u>	<u>Lot</u>	<u>Parcel (ac)</u>	<u>Year</u>	<u>Assessment</u>	<u>(per 1000)</u>	<u>Taxes</u>
9 Wildwood Road	Melrose	H9	51	8,000	2020	\$ 644,000	\$11.67	\$ 7,515.48

ZONING DATA AND ANALYSIS

The subject is located within the *Single Residence B* Zoning District of the City of Melrose. Permitted uses in the SRB zone include agriculture, single family dwellings, daycare; religious; municipal; or governmental uses.

Dimensional requirements include a minimum lot size of 10,000 square feet, a minimum frontage of 80' and front, side, and rear setback requirements of 20, 12, and 30 feet respectively. The maximum building height is 35 feet or 2.5 stories.

Parking requirements call for two spaces per dwelling unit.

Note that the subject is a legal, but non-conforming property. It conforms to the use and some dimensional requirements of the Melrose Zoning Bylaw. However, it has only 8,000 sq ft of lot area in a district that requires 10,000 sq ft as the minimum lot area. This is allowed as the property was created prior to the adoption of current SRB dimensional requirements.

DESCRIPTION OF THE LAND & IMPROVEMENTS BEFORE ACQUISITIONS

The proposed easement will affect the single family residential property at 9 Wildwood Street in Melrose. This property consists of an 8,000 sq ft parcel of SRB zoned land improved with a two story, 2,133 sq ft cape style dwelling.

The following is a more detailed description of the property:

Site



The site contains 8,000 sq ft. It is rectangular in shape with 80' of frontage on Wildwood Road and a depth of 100'.

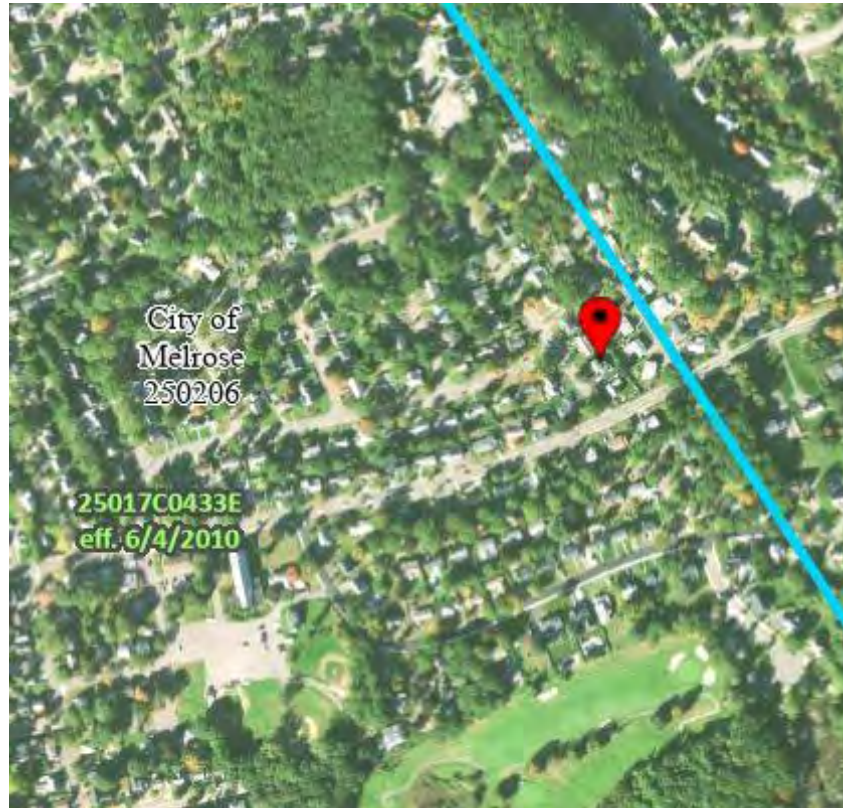
There are no wetlands on site and it is not within the boundaries of a flood hazard zone per FEMA Panel #250 17C 418E dated June 4, 2010.

The site is serviced by municipal water and sewer, electric, telephone and cable t.v. with high speed internet lines.

The front half of the site is generally level, with elevations at 93-94' above sea level. The rear $\frac{1}{3}$ of the site dips down to 90-92 feet.

Rights of Way: There are no recorded easements/rights of way over the subject land. However, the appraiser was notified that there is an existing drainage pipe from Wildwood Road that extends underneath the existing driveway on site, through the rear yard and into the abutting property at 205 Woodcrest Drive East. The proposed easement will create a corridor along the southern boundary of the subject land under which a new drainage pipe will be installed.

Flood Map Panel



Building(s)/Improvements

There is a wood frame, cape style dwelling on site, built in 1950 per municipal records. The dwelling contains 2,133 sq ft of living area that includes 7 rooms, 3 bedrooms, and 1 full bath and 1 half bath.

The dwelling is heated by an oil fired boiler using a forced hot water baseboard distribution system. Assessors and recent MLS records indicate that there is a single fireplace inside the dwelling and that there is a full basement level that contains a laundry room and playroom. There is a 165 sq ft composite deck to the rear.

The exterior walls are vinyl. The roof is asphalt shingles.

As of the date of valuation a 1 car garage attached to the southside of the dwelling has been razed in preparation for a proposed 23' x 31' addition.

In addition to the dwelling and deck, there is a front lawn area with shrubbery, and an asphalt pavement driveway.

Comments/Conclusion: The larger property consists of a single family property that includes an 8,000 sq ft lot and a two story, 2,133 sq ft colonial style dwelling. The property is located in the Upham Park neighborhood in East Melrose approximately 1,000 feet west of the Saugus town line. It is served by municipal water and sewer.

SUBJECT PROPERTY PHOTOGRAPHS

9 Wildwood Road
Melrose, Massachusetts



Aerial Photo Provided by Mass GIS/Google Earth. Photo Dated March 2021.

Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

SUBJECT PROPERTY PHOTOGRAPHS

9 Wildwood Road
 Melrose, Massachusetts
 Taken by C.H. Bowler (1/24/2022)



1. View Looking NE at the Subject Property at the Corner of School and Cottage Street. Photo Taken from Sidewalk in Front of Wellington Elementary School.



2. View Looking Northerly Along the Subject's Frontage on Cottage Street Where Both PUE-1 and TE-10 are Proposed.

Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

SUBJECT PROPERTY PHOTOGRAPHS

9 Wildwood Road
Melrose, Massachusetts
Taken by C.H. Bowler (1/24/2022)



3. View Westerly Along the Subject's Frontage on School Street
at the Location of Proposed TE-10.



4. Street Scene Looking Easterly Along School Street.
Subject Property is to the Left in Photo.

Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

SUBJECT PROPERTY PHOTOGRAPHS

9 Wildwood Road
Melrose, Massachusetts
Taken by C.H. Bowler (1/24/2022)



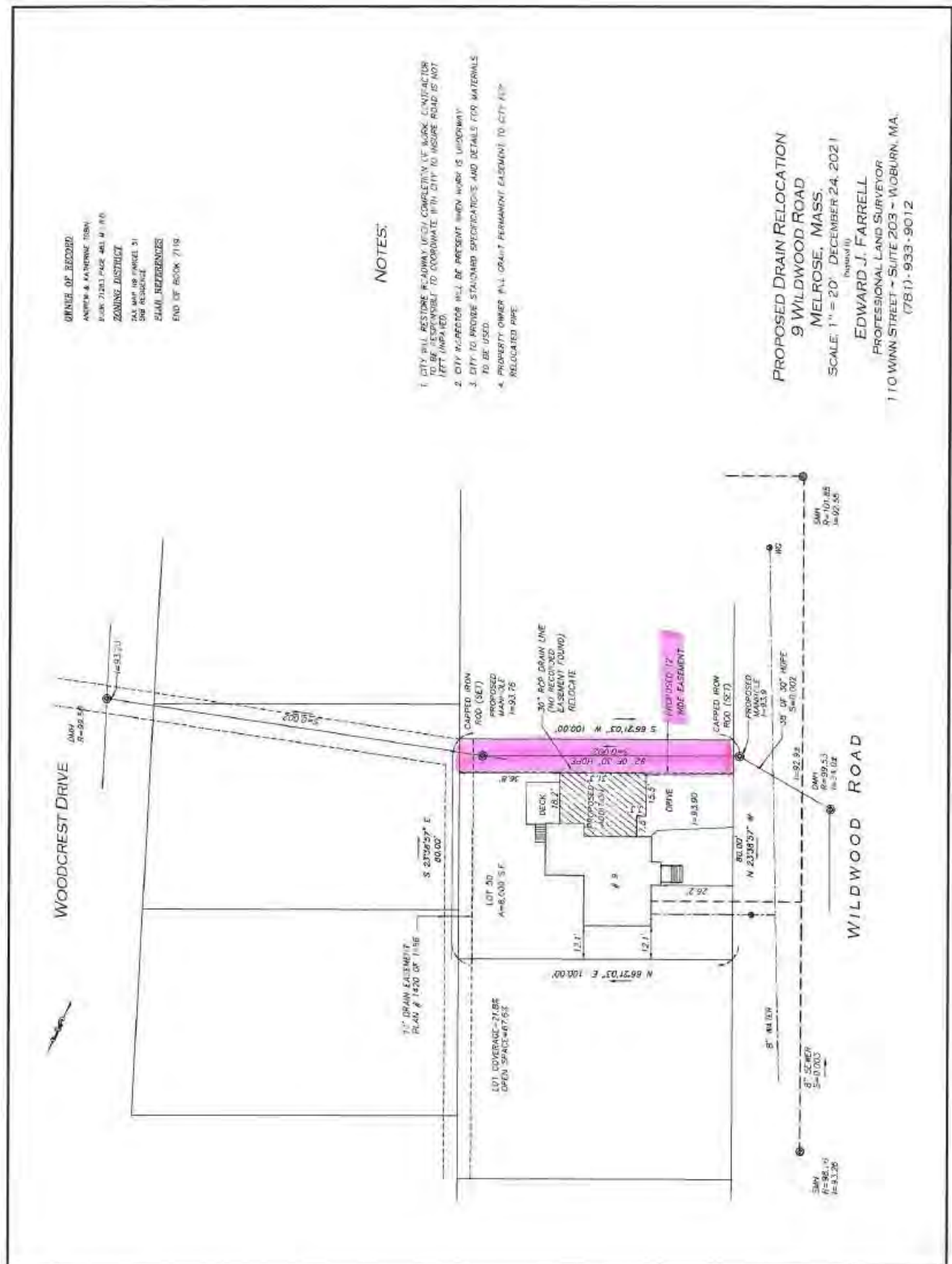
5. View Westerly Along the Subject's Frontage on School Street
at the Location of Proposed TE-10.

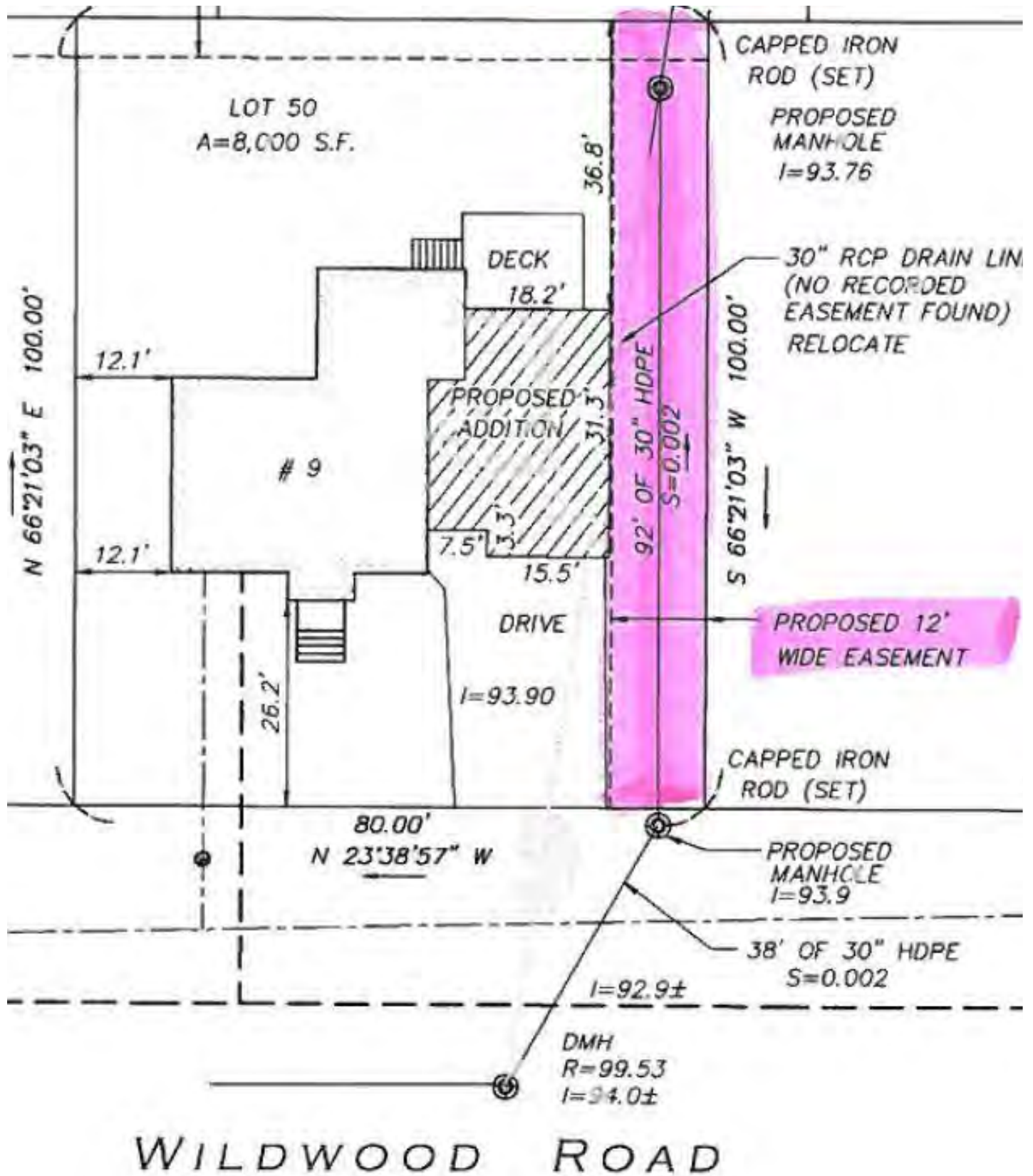


6. Street Scene Looking Easterly Along School Street.
Subject Property is to the Left in Photo.

Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

PLAN OF LAND TO BE TAKEN; PROPOSED EASEMENT



CLOSE IN VERSION OF PLAN

Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

DESCRIPTION OF PARCELS TO BE ACQUIRED

The proposed easement will be used to install a drainage pipe below ground at 9 Wildwood Road in Melrose that will replace an older pipe that presently exists under the driveway on site. The proposed easement is permanent.

The following is a description of the easement and any improvements thereon:

Proposed Drainage Easement: This is a 1,200 sq ft strip of land of land extends along the southern boundary line of 9 Wildwood Road. It is to be 12' wide by 100' deep. In this section of the subject land there is a grass lawn and a single evergreen shrub, approximately 6' wide, 12' long, and 30 inches high.

Per the Town's information, the easement will be 'on, over, and under' the area taken. So the effect will be that the area of the easement will not be available for use to current ownership in perpetuity. However, given the setback requirements under current zoning, this area cannot be developed regardless, as the side setback requirement in the SRB zone is 12', whereas the easement width is 12'. The easement will be in this setback. .

Contract Work: As part of the contract work for this project, unless noted herein, all landscaping will be replaced by the Town's or State's contractor at no cost to the property owner. In the subject case it is assumed that after the pipe is installed the land will be backfilled and will be at the same level that exists today. The loam will be re-seeded and the evergreen bush will be replanted in the same proximity that exists today.

Effect of Proposed Takings/Easements on Remainder Property: No structures will be affected by the easement. After the construction is complete access to the site will be the same as before the easement. The site will have the same utility. The easement is within the setback requirements of the site, so no improvements could be constructed in that area regardless of the proposed easement.

The taking, in our opinion, will not result in permanent damages to the remainder property.

HIGHEST AND BEST USE BEFORE & AFTER ACQUISITIONS

The Dictionary of Real Estate Appraisal, Sixth Edition defines highest and best use as "the reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible and results in the highest value. The four criteria the highest and best use must meet are legal permissibility, physical possibility, financial feasibility and maximum productivity." The highest and best use is often referred to as the optimum use. Highest and best use must be analyzed from two perspectives: the highest and best use as vacant, and the highest and best use as improved. The following is a discussion of each:

Highest & Best Use "As Is", or "As Vacant": Given the uses allowed in the SRB zone, it is our opinion that the highest and best use of the 8,000 sq ft parcel is to construct a single family home on site that conforms to market demands and preferences. In the Melrose market, this

would likely be a colonial style home with 4 bedrooms, at least 2.5 baths with approximately 3,000 sq ft of living area.

Before Taking/Easement: It is our opinion that the highest and best use of the subject property is for its continued single family residential use.

After Taking/Easement: Overall, the easement will have only a minor impact on the use or utility of the subject property. It is our opinion that the highest and best use of the subject property “after” is for its continued single family residential use.

DESCRIPTION OF THE LAND & IMPROVEMENTS AFTER ACQUISITIONS

After the acquisition of the easement the property will remain the same in size. No trees or structures will have been altered. An evergreen bush is assumed to have been re-installed after construction.

VALUATION - APPRAISAL PROCESS

The methodology traditionally used for the valuation of real property is derived from three basic approaches to value; the Cost Approach, the Sales Comparison Approach and the Income Capitalization Approach. From the indicated values produced by each of these approaches and the weight accorded to each, an estimate of market value is made. The following is a brief summary of the method used in each approach to value.

COST APPROACH:

The Cost Approach is an analysis of the physical value of a property; that is the market value of the land, assuming it were vacant, to which is added the depreciated value of the improvements to the site. The latter is estimated to be the reproduction cost of the improvements less accrued depreciation from all causes.

SALES COMPARISON APPROACH:

The Sales comparison Approach is based upon the principle of substitution, that is, when a property is replaceable in the market, its value tends to be set at the cost of acquiring an equally desirable substitute property assuming no costly delay in making the substitution. Since few properties are ever identical, the necessary adjustments for differences between comparable properties and the subject property are, to a certain extent, a function of the appraiser's experience and judgment.

INCOME CAPITALIZATION APPROACH:

The Income Capitalization Approach is an analysis of the subject property in terms of its ability to produce an annual net income in dollars. This estimated net annual income is then capitalized at a rate commensurate with the relative certainty of its continuance and the risk involved in ownership of the property.

VALUATION METHODS USED: We are estimating the effect on the value of the larger, 8,000 sq ft parcel of SRB zoned land at 9 Wildwood Road in Melrose, and any damages or benefits, as a result of the proposed easement.

In many cases, the best way to estimate the effect on value is a “before and after” technique estimating the value of the larger property both “before” and “after” acquisitions. The different between the two is the effect on value of the proposed acquisitions.

However, in the subject case, due to the easement involved a simple “before” and “after” method is not applicable and will not properly estimate the value of the acquisitions.

Because the easements will involve portions of the 8,000 sq ft site, we will begin first with an estimate of value of the underlying land using the Sales Comparison Approach and then allocate this value on a per sq ft basis to the acquisition component. These initial indications of value will then be adjusted for easement rights, cost to cure, severance damages, and special benefits resulting in an estimate of final damages resulting from each acquisition parcel.

As we begin the valuation portion of this appraisal report we’ll repeat the definition of value being used and definitions of terms involved:

Under established law, the criterion for just compensation is the market value of the property taken. The courts in the Commonwealth of Massachusetts have defined market value, as used in eminent domain proceedings, as:

*"The highest price, in terms of money, which a hypothetical willing buyer would pay a hypothetical willing seller in an assumed free and open market, with neither party being under any obligation or compulsion to buy or sell."*¹

We have completed our analysis under the ‘State Rule.’ Therefore, the methodology applied herein is summarized as:

*Value of the Acquisition
(Plus) + Severance Damages
(Less) - Special Benefits
Value Difference*

Severance damage is defined as “damages to the remainder property caused by a partial taking.”² Special Benefits are defined as “benefits that arise from the peculiar relation of the land in question to the public improvement, usually resulting in a change in its highest and best use.”³ These are benefits that accrue to the property remaining after the acquisition.

LAND VALUATION

We first completed a valuation of the underlying land for the 8,000 sq ft subject property.

¹ Epstein V. Boston Housing Authority, (1944) 58 N.E. 2nd 135, 317 Mass. 297

² Principles of Right of Way, 4th Edition, 2012, Page 366

³ Dictionary of RE Appraisal 5th Edition, Page 183

In order to estimate the value of the land-only, we searched for recent sales of residential land in Melrose for comparison to the subject property.

This search produced 7 sales considered as possible comparisons to the subject. The following is a summary of these sales and comparison to the subject site. Detailed sales sheets on each can be found in the Addenda to this report.

RESIDENTIAL LAND SALES SUMMARY

Date of Valuation 28-Jan-22

Time Adjustment 6% annually

<u>Sale</u>	<u>Address</u>	<u>Town</u>	<u>Sale Price</u>	<u>Sale Date</u>	<u>USABLE</u>			<u>FF to SF</u>	<u>Frontage (ft)</u>	<u>Price</u>		<u>Access</u>
					<u>Land Area Acres</u>	<u>Land Area Sq Ft</u>	<u>Land Area Sq Ft</u>			<u>Sq Ft of Usable Land</u>	<u>Adjusted Price Per Usable Sq Ft</u>	
1	785 Lynn Fells Parkway	Melrose	\$430,000	16-Jan-19	0.29	12,600	12,600	95	0.0075	\$34.13	\$40.34	Yes
2	47 Dexter Road	Melrose	\$290,000	12-Sep-19	0.29	12,449	12,449	49	0.0039	\$23.30	\$26.62	Yes
3	78-80 Laurel Street	Melrose	\$523,500	13-Mar-17	0.39	17,159	17,159	123	0.0072	\$30.51	\$39.45	Yes
4	62 Goss Avenue	Melrose	\$390,000	24-Oct-17	0.15	6,600	6,600	60	0.0091	\$59.09	\$74.22	Yes
5	Berkeley Street	Melrose	\$342,000	30-Nov-21	0.10	4,500	4,500	50	0.0111	\$76.00	\$76.74	Yes
6	275 Lebanon/2 Fairfield	Melrose	\$600,000	26-Jan-18	0.43	18,631	18,631	361	0.0194	\$32.20	\$39.95	Yes
7	10 West Street	Melrose	\$200,000	8-Jun-20	0.21	9,344	9,344	153	0.0164	\$21.40	\$23.51	Yes
					Mean	11,612	11,612			Mean	\$45.83	Yes
					Median	12,449	12,449			Median	\$39.95	
9	Wildwood Street	Melrose	-----	-----	0.18	8,000	8,000	80.00	0.0100	-----	-----	Yes

Land Sales Analysis (cont.)

We have compared each to the subject on a price per sq ft of usable land area basis. Builders and brokers have indicated to us that the usable land area is most important to buyers of land in Melrose. It's not important that a parcel has 2 acres, if only 1 is upland and the remainder is wetlands. The buyer is focused on the usable land area.

In the case of the 7 sales, most are 100% usable.

The sales have first been adjusted for time, to take into consideration the appreciating market conditions in the regional real estate market. We used a 6% annual adjustment based upon a review of the Case Shiller Index presented earlier and the MLS statistics. The time adjusted indications are shown in the **boldprint** column above.

The time adjusted prices per sq ft range from \$23.51 to \$76.74, with a mean of \$45.83 and a median of \$39.95.

Melrose is a fully built out town/small city with very little vacant land remaining. The 'land sales' that do occur are predominantly a result of 'tear downs' in which a property is purchased that contains improvements/homes that are at the end of their economic life and are torn down post sale to make way for a new dwelling. These are 'land sales' because the buyer purchased the property for the land only and gave no value to the improvements that were on site. Of the 7 sales 6 were 'tear down' sales and #2 was a sale of a vacant lot.

A review of the sales indicates that the factors that play the largest role in determining residential land prices in Melrose are; location, size, and utility of the site.

Larger sites tend to sell for less on a per sq ft basis than smaller sites, if all other factors are held equal. A comparison of the two small lot sales; #4 and #5, to any of the other sales, which are larger in size, are examples of the size factor. The biggest factor in the price per sq ft in theses comparisons is size. The smaller sales had a much higher price per sq ft.

No one sale was 'exactly' similar to the subject. And unfortunately, there were no recent sales in the subject, Upham Park neighborhood either. However, the 7 sales presented and analyzed do present a reasonable range for which the value of the subject site on a per sq ft basis should fall. The 'mean' time adjusted price from the 7 sales is \$45.83. The mean 'usable land area' is 11,612. The subject is moderately smaller than the 'mean'.

Based upon this analysis and consideration of all sales, and recalling the 'size' factor discussed above, it is our opinion that the value of the underlying land for the subject property, as of January 28, 2022 is **\$50.00 per sq ft of land area**. This would suggest an overall value for the subject site of \$400,000 (rounded), which after review of the sales of the single family lots presented above, is reasonable.

We will now begin with the valuation of the proposed easement:

PERMANENT EASEMENT VALUATION

This is acquisition of a permanent easement of a 1,200 sq ft section of land along the larger property's southern boundary or side yard.

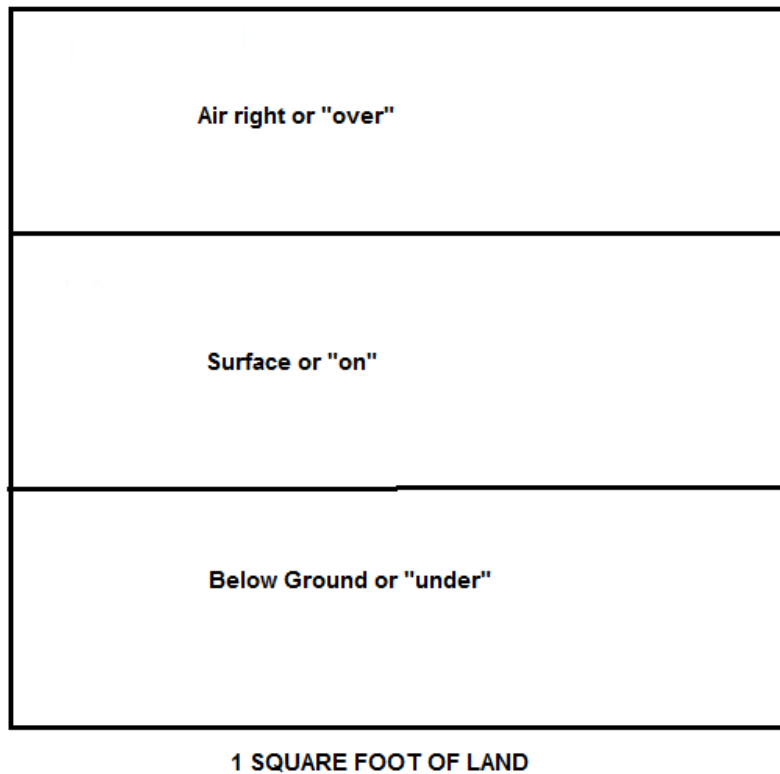
Encumbrance of the subject property with the permanent easement has an impact on the value of the fee ownership. The rights given up include:

- Owner's exclusive use of the property (quiet enjoyment) is restricted.
- Owner's ability to limit trespass on easement is restricted.
- Owner's ability to develop the easement is restricted.
- Owner's ability to place improvements on the easement is restricted.
- Owner's ability to change topography is restricted.
- Owner's ability to fence off the easement is restricted.
- Owner's ability to utilize the easement area for exclusive drainage is restricted.
- Owner's right of passage is allowed but no new access ways or driveways may be created over the easement.

The owner's retained rights include:

- Ownership of the property.
- Limited yard expansion over the term of the easement.
- Freedom from future liability because it is assumed by the easement holder.

The permanent easement acquisition will be a 'less than fee' acquisition. In terms of easements, the phrase "on, over, and under" is commonly used to describe what rights have been taken and what remains with a parcel. The following diagram illustrates the rights involved with one square foot of land:



In terms of the proposed easement most of the exclusive surface or “on” rights will be taken, as will the “over” rights. And given that the easement will be used to install a municipal drainage pipe virtually all of the “under” rights will be taken. The owner will still be able to put temporary structures on the easement area, walk on it, and enjoy any landscaping that is on it. But the rights are not exclusive.

To estimate an adjustment needed to account for the rights given away, we have looked at the following matched pair sales.

Date of Valuation		28-Jan-22					Price	Time
Time Adjustment		6%	annually				Per	Adjusted
					Land		Sq Ft	Price
<u>Sale</u>	<u>Address</u>	<u>Town</u>	<u>Sale Price</u>	<u>Sale Date</u>	<u>Area Sq Ft</u>	<u>Frontage</u>	<u>Land</u>	<u>Per Sq Ft</u>
1	62 Goss Avenue	Melrose	\$ 390,000	24-Oct-17	6,600	60.00	\$59.09	\$74.22
2	Lot 2 Montvale Street	Melrose	\$ 17,500	21-Feb-20	7,750	107.75	\$2.26	\$2.52
% of Fee Lost to Restrictions or Non Buildable Status								97%
1	12 Hampton Court	Lynnfield	\$ 700,000	1-Dec-21	27,724	70.00	\$25.25	\$25.49
2	11 Archer Lane	Lynnfield	\$ 75,000	4-Sep-20	15,960	90.00	\$4.70	\$5.09
% of Fee Lost to Restrictions or Non Buildable Status								80%
1	97 Reed Street	Lexington	\$ 785,000	21-Jun-19	27,697	150.00	\$28.34	\$32.78
2	Lot 32-14 Kendall Rd	Lexington	\$ 50,000	31-Oct-19	22,034	75.00	\$2.27	\$2.58
% of Fee Lost to Restrictions or Non Buildable Status								92%
1	18 Larchmont Street	Lexington	\$ 780,000	31-Oct-19	15,200	125.00	\$51.32	\$58.23
2	359 Lincoln Street	Lexington	\$ 75,000	19-Apr-18	17,678	100.00	\$4.24	\$5.21
% of Fee Lost to Restrictions or Non Buildable Status								91%
1	29 Van Vecht St	Waltham	\$ 300,000	17-Oct-18	4,966	50.00	\$60.41	\$72.32
2	107 Pine Hill Road	Waltham	\$ 40,000	16-Oct-20	4,312	40.00	\$9.28	\$9.99
% of Fee Lost to Restrictions or Non Buildable Status								86%
1	31 Old Concord Road	Lincoln	\$ 675,000	16-Nov-20	145,055	250.00	\$4.65	\$4.99
2	22 Juniper Ridge Road	Lincoln	\$ 50,000	3-Sep-20	43,778	52.46	\$1.14	\$1.24
% of Fee Lost to Restrictions or Non Buildable Status								75%
1	314 Glen Road	Weston	\$ 900,000	6-Jan-16	160,301	200.00	\$5.61	\$7.66
2	Lot 1, 441 Glen Road	Weston	\$ 400,000	13-Sep-13	287,496	100.00	\$1.39	\$2.09
% of Fee Lost to Restrictions or Non Buildable Status								73%
1	Lot 5 Wilson Way	Dover	\$ 950,000	16-Mar-19	102,802	200.00	\$9.24	\$10.83
2	Parcel D Straw berry Hill	Dover	\$ 50,000	12-Jul-19	59,242	45.46	\$0.84	\$0.97
% of Fee Lost to Restrictions or Non Buildable Status								91%
1	39 Ridge Hill Road	Wellesley	\$2,470,000	15-Jul-13	136,343	150.00	\$18.12	\$27.41
2	Lot B, 15-R Pembroke Rd	Wellesley	\$ 235,000	22-Dec-15	120,226	45.46	\$1.95	\$2.67
% of Fee Lost to Restrictions or Non Buildable Status								90%
1	58 Carriage Way	Sudbury	\$ 517,500	23-Jul-18	87,480	255.21	\$5.92	\$7.17
2	Parcel 5A Haynes Rd	Sudbury	\$ 330,000	9-Apr-18	242,629	none	\$1.36	\$1.67
% of Fee Lost to Restrictions or Non Buildable Status								77%

With each comparison the top sale is of land in which all fee simple rights were acquired. The land for the top sale could be developed in accordance with underlying zoning without any further restrictions. The bottom sale in each matched pair involves land in which less than the fee simple right were acquired. These sales were impaired in that the full development potential under zoning was not possible due to legal or physical restraints.

The examples showed between 73% and 97% diminution in value caused by the less than fee rights in comparison to the sale of the property in which all fee simple rights were acquired.

Looking back at our one sq ft of land diagram, it is our opinion that the fee simple rights for that land can be broken down into 50% for the surface rights extending up to approximately 10' above ground; 25% for the below ground rights; and 25% for the air rights.

Using the matched pair examples cited above and the diagram and analysis presented, it is our opinion that the proposed easement over the 1,200 sq ft section of the subject land will take 80% of the rights from the fee simple ownership. This figure will be used in the calculations to follow.

In terms of the contributory value of any existing improvements, there is none in our opinion. As stated earlier, as part of the contract work for this project, unless noted herein, all landscaping, shrubs, and pavement will be replaced by the Town's or State's contractor at no cost to the property owner unless otherwise noted.

In terms of the Cost to Cure there are no items to be considered here.

In terms of Severance Damages there are none in our opinion. The proposed taking of the 1,200 easement will not cause a loss in value to the remainder property in our opinion. There will be no loss in development potential in the future. The same (or improved) access to the property will be retained. There will be no change to the productive use of the property.

And in terms of Special Benefits, as defined previously, there are none created in our opinion as a result of these acquisitions.

Based upon a description of the permanent easement and the analysis completed, it is our conclusion that most of the rights will be transferred to the easement holder. As a result, we conclude the owner retains about 20% of the value while the easement holder gains 80% of the value. And we have previously estimated the value of the underlying land at \$50 per sq ft.

The estimate of total damages as a result of the acquisition of permanent easement is calculated as follows:

<u>Parcel #</u>	<u># of Sq Ft</u>		<u>Price Per Sq Ft</u>		<u>Indication</u>
Proposed 12' Wide Easement	1,200	x	\$ 50.00	=	\$60,000
Adjusted @	80%	for easement		=	\$48,000
	<i>Plus</i>				
	Contributory Value of Improvements				\$0.00
	<i>Plus</i>				
	Cost to Cure				\$0.00
	<i>Plus</i>				
	Severance Damages				\$0.00
	<i>Less</i>				
	Special Benefits				\$0.00
	Total Damages				\$48,000
	ROUNDED				\$48,000

RECONCILIATION AND FINAL ESTIMATE OF DAMAGES

The proposed acquisition parcel is a permanent easement of 1,200 sq ft encumbering the underlying 8,000 sq ft fee property known as 9 Wildwood Road in Melrose, MA.

The acquisition is part of a proposed drain relocation project proposed by the City of Melrose.

To complete this assignment, we first estimated the market value for the fee simple interest in the subject land based on a Sales Comparison Approach involving 7 sales of residential zoned land in Melrose. Next, the fee simple interests were discounted reflecting the retained and given up rights in the subject easements.

We considered the contributory value of any improvements on the parcels being acquired, and cost to cure items were considered as well.

For Severance Damages and Special Benefits, as defined herein, there were none in our opinion.

Based upon the methods of valuation utilized, it is our opinion that the total damages resulting from the proposed acquisition, as of January 28, 2022 is as follows:

Parcel #	Area (sf)	Acquisition Type	Final Estimate of Damages
Proposed 12' Wide Easement	1,200	Permanent Easement	\$ 48,000

CERTIFICATE OF THE APPRAISER - USPAP Standards Rule 2-3

I hereby certify that, to the best of my knowledge and belief:

- That on January 24, 2022, I personally made a field inspection of the property herein appraised and afforded the owner the opportunity to accompany me on the inspection. I have also, on January 24, 2022 personally made field inspections of the individual comparable sales relied upon in making said appraisal. The property being appraised, and the comparable sales relied upon in making this appraisal, were as represented in this appraisal.
- The statements of fact contained in this report are true and correct, subject to the limiting conditions herein set forth.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.
- I have no present or prospective interest in the property that is the subject of this report and no personal interest or bias with respect to the parties involved. I will not directly or indirectly benefit from the acquisition of such property appraised.
- My engagement in this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
- My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the current Uniform Standards of Professional Appraisal Practice.
- No one provided significant real property appraisal assistance to the person signing this certification.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and legal instructions, and are my personal, unbiased professional analyses, opinions and conclusions.
- That to the best of my knowledge no portion of the value assigned to the property appraised consists of items which are non compensable under the established law of the Commonwealth of Massachusetts.
- That I have no direct or indirect present or contemplated future personal interest in such property or in any benefit from the acquisition of such property appraised.
- That I have not revealed the findings and results of such appraisal to anyone other than the client and I will not do so until so authorized by said client, or until I am required to do so by due process of law, or until I am released from this obligation by having publicly testified as to such findings.

- I have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three year period immediately preceding the acceptance of this assignment.
- That any decrease or increase in the market value of real property prior to the date of valuation caused by the public improvement for which such property is acquired, or by the likelihood that the property would be acquired for such improvement, other than that due to physical deterioration within the reasonable control of the owner, was disregarded in determining the compensation for the property.
- That I have collected and analyzed relevant data and applied appropriate valuation techniques and methods. As a result of my analysis, it is my opinion that the value of the property to be acquired and the damages to the remainder, if any, based upon my independent appraisal and the exercise of my professional judgment as of the effective date of appraisal (January 28, 2022) is as follows:

Parcel #	Area (sf)	Acquisition Type	Final Estimate of Damages
Proposed 12' Wide Easement	1,200	Permanent Easement	\$ 48,000

Signature



Christopher H. Bowler, MAI, CRE
Massachusetts Certified General
Real Estate Appraiser #495

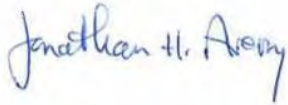
CERTIFICATE OF THE APPRAISER - USPAP Standards Rule 2-3

I hereby certify that, to the best of my knowledge and belief:

- That I did not inspect the property that is the subject of this appraisal.
- The statements of fact contained in this report are true and correct, subject to the limiting conditions herein set forth.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.
- I have no present or prospective interest in the property that is the subject of this report and no personal interest or bias with respect to the parties involved. I will not directly or indirectly benefit from the acquisition of such property appraised.
- My engagement in this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
- My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the current Uniform Standards of Professional Appraisal Practice.
- No one provided significant real property appraisal assistance to the person signing this certification.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and legal instructions, and are my personal, unbiased professional analyses, opinions and conclusions.
- That to the best of my knowledge no portion of the value assigned to the property appraised consists of items which are non compensable under the established law of the Commonwealth of Massachusetts.
- That I have no direct or indirect present or contemplated future personal interest in such property or in any benefit from the acquisition of such property appraised.
- That I have not revealed the findings and results of such appraisal to anyone other than the client and I will not do so until so authorized by said client, or until I am required to do so by due process of law, or until I am released from this obligation by having publicly testified as to such findings.
- I have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three year period immediately preceding the acceptance of this assignment.

- That any decrease or increase in the market value of real property prior to the date of valuation caused by the public improvement for which such property is acquired, or by the likelihood that the property would be acquired for such improvement, other than that due to physical deterioration within the reasonable control of the owner, was disregarded in determining the compensation for the property.

Signature

A handwritten signature in blue ink that reads "Jonathan H. Avery". The signature is written in a cursive, flowing style.

Jonathan H. Avery, MAI, CRE
Massachusetts Certified General
Real Estate Appraisers #26

ADDENDA

ALLOCATION OF DAMAGES

ALLOCATION OF DAMAGES

	Permanent 12'
	<u>Wide Easement</u>
Land	\$ 48,000
Improvements	\$0
Cost to Cure Items	\$0
Damages to Remainder (Severance Damages)	\$0
Subtotal	\$ 48,000
Benefits	\$0
Total Value of Acquisition (rounded)	\$ 48,000

Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

SUBJECT PROPERTY DEED



2018 00100794
 Bk: 71283 Pg: 483 Doc: DEED
 Page: 1 of 2 07/09/2018 01:10 PM

A2

QUITCLAIM DEED

I, KATHLEEN A. THORSEN f/k/a Kathleen A. Hook, unmarried, of Melrose, Massachusetts,

for consideration paid, and in full consideration of
 SIX HUNDRED SEVENTY FIVE THOUSAND AND 00/100 DOLLARS
 (\$675,000.00)

grant to

ANDREW F. TOBIN and KATHERINE O. TOBIN, husband and wife, tenants by the entirety, of
 9 Wildwood Road, Melrose, Massachusetts

WITH QUITCLAIM COVENANTS

A certain parcel of land with the buildings thereon situated in said Melrose and being shown as Lot #50 on a plan entitled, "Upham Park, Melrose, Mass.", Joseph Selwyn, Engineer, and recorded with Middlesex South District Deed at end of Book 7119, and being bounded and described as follows:

SOUTHWESTERLY: by Wildwood Road, eighty (80) feet;
 NORTHWESTERLY: by Lot #49, as shown on said plan, one hundred (100) feet;
 NORTHEASTERLY: by Lot #35 and #36, as shown on said plan, eighty (80) feet;
 SOUTHEASTERLY: by Lot #51, as shown on said plan, one hundred (100) feet.

Containing 8,000 square feet of land according to said plan.

Said premises are conveyed subject to restrictions and easements of record so far as now in force and applicable.

Grantor, an unmarried person, hereby releases all rights of homestead and under the pains and penalties of perjury swears that no former spouse or other person is entitled to homestead rights in the property being conveyed by this Deed

Being the same premises conveyed to the herein named Grantor by deed dated June 30, 1999, recorded with said Deeds in Book 30450, Page 194.

MASSACHUSETTS EXCISE TAX
 Southern Middlesex District ROD # 001
 Date: 07/09/2018 01:10 PM
 Ctrl# 28405119916 Doc# 00100794
 Fee: \$3,075.00 Cons: \$675,000.00

9 Wildwood Road, Melrose, MA

Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

WITNESS my hand and seal this 22 day of June, 2018.

Kathleen A. Thorsen
Kathleen A. Thorsen

COMMONWEALTH OF MASSACHUSETTS

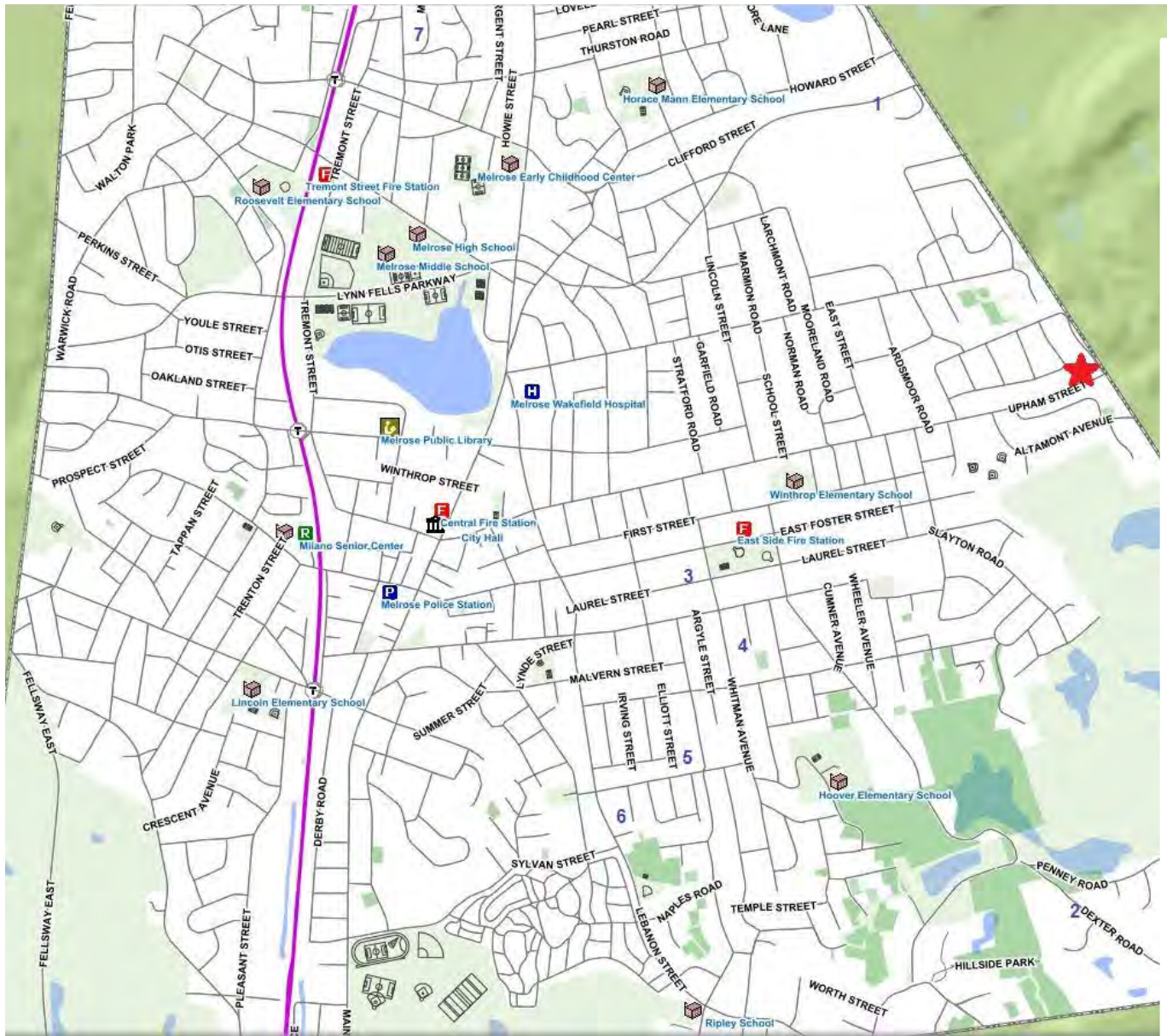
Middlesex, ss.

On this 22 day of June, 2018, before me, the undersigned notary public, personally appeared **Kathleen A. Thorsen**, and proved to me through satisfactory evidence of identification, which was () personal knowledge (☒) MA Driver's License, to be the person whose name is signed on the preceding or attached document, who acknowledged to me that she signed it voluntarily for its stated purpose and who swore and affirmed to me that the contents of the document are truthful and accurate to the best of her knowledge and belief.



Marilene A. Light
Notary Public
My commission expires: 1/22/21

COMPARABLE LAND SALES LOCATION MAP



Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

COMPARABLE SALES DATA SHEETS

Land Sale No. 1**Property Identification**

Record ID 1417
Property Type Residential, Residential land
Address 785 Lynn Fells Parkway, Melrose, Middlesex County, Massachusetts

Sale Data

Grantor Estate of Allan Meade Carman Sr.
Grantee Stonehill Properties, LLC
Sale Date January 16, 2019
Deed Book/Page 72134/57
Recorded Plat F12/16
Property Rights Fee Simple
Conditions of Sale Arm's Length
Financing Cash or equivalent
Sale History No prior sale in previous 60 months
Verification Listing broker Craig Celli; Other sources: Deed, plan, assessors, Confirmed by Christopher Bowler

Sale Price \$430,000
Cash Equivalent \$430,000

Land Data

Zoning SR, Single Family Residential
Topography Gentle slope to rear
Utilities Public sewer and water
Shape Rectangular
Flood Info Majority of property in flood zone

Land Size Information

Gross Land Size 0.289 Acres or 12,600 SF
Useable Land Size 0.289 Acres or 12,600 SF , 100.00%
Front Footage 95 ft Total Frontage: 95 ft Lynn Fells

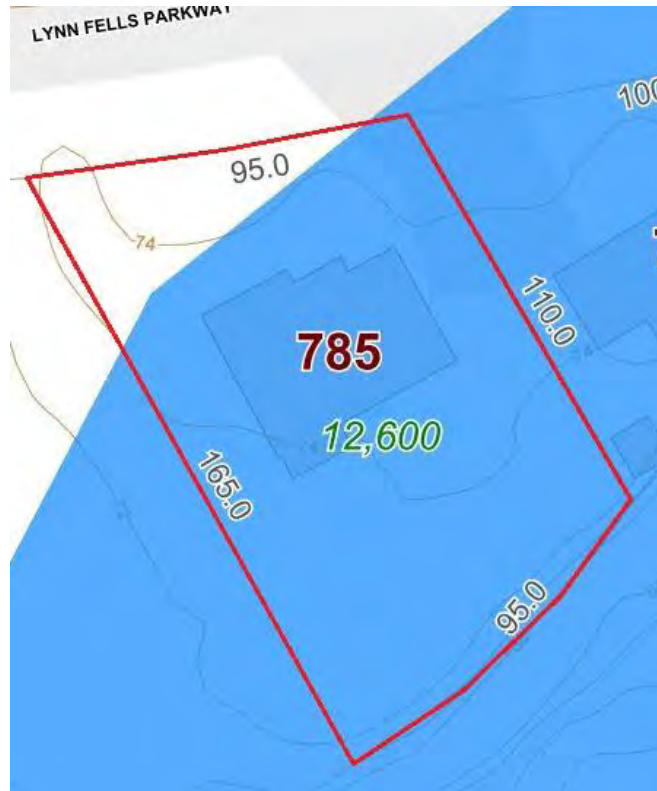
Indicators

Sale Price/Gross Acre \$1,486,571
Sale Price/Gross SF \$34.13
Sale Price/Useable Acre \$1,487,889
Sale Price/Useable SF \$34.16
Sale Price/Front Foot \$4,526

Remarks

This is a tear down lot sale on Lynn Fells Parkway. Small ranch razed to make way for 3,610 sf colonial that sold in 6/2020 for \$1.3 million. Majority of lot in flood zone. Views of Bellevue golf course from lot.

Land Sales No. 1 Photo and Plan



Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

Land Sale No. 2**Property Identification**

Record ID 1418
Property Type Residential, Residential land
Address 47 Dexter Road , Melrose, Middlesex County, Massachusetts

Sale Data

Grantor Laura Szekely, Trustee 47 Dexter Road RT
Grantee Giannelli Management & Development Corp.
Sale Date September 12, 2019
Deed Book/Page 1549/81
Property Rights Fee Simple
Conditions of Sale Arm's Length
Financing Cash or equivalent
Sale History No prior sale in previous 60 months
Verification Listing broker Jonathan Maren; Other sources: Deed, plan, assessors, Confirmed by Christopher Bowler

Sale Price \$290,000
Cash Equivalent \$290,000

Land Data

Zoning SRA, Single Family Residential
Topography Lot slopes up from frontage
Utilities Public sewer and water
Shape "Flag" shaped
Flood Info Not in designated flood hazard zone

Land Size Information

Gross Land Size 0.286 Acres or 12,449 SF
Useable Land Size 0.286 Acres or 12,449 SF , 100.00%
Front Footage 49 ft Total Frontage: 49 ft Dexter

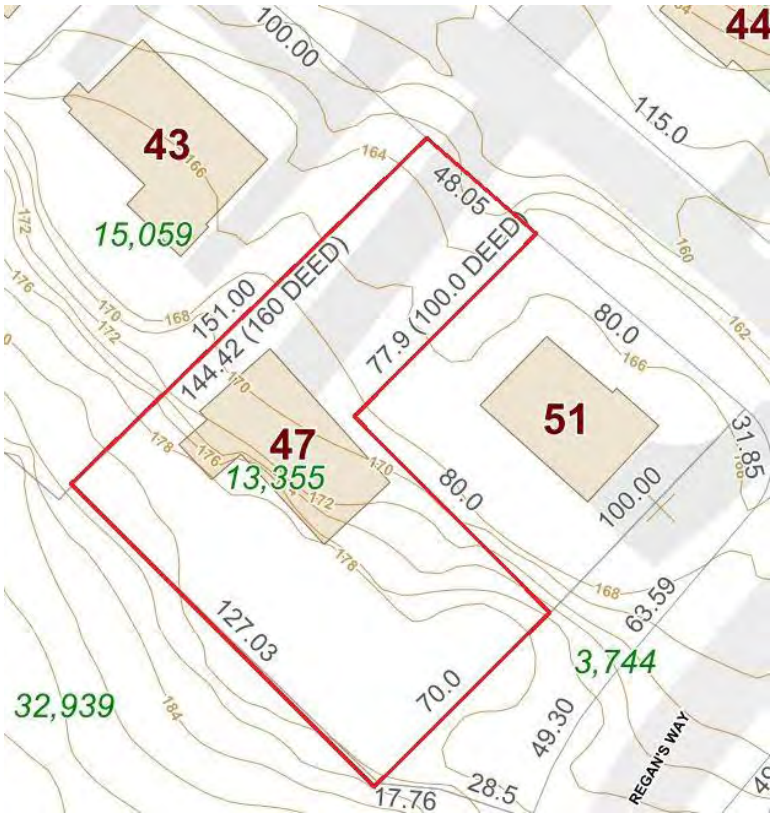
Indicators

Sale Price/Gross Acre \$1,014,732
Sale Price/Gross SF \$23.30
Sale Price/Useable Acre \$1,013,986
Sale Price/Useable SF \$23.28
Sale Price/Front Foot \$5,918

Remarks

Flag shaped lot located adjacent to the Regan's Way/Stone Ridge Heights subdivision. Lot had been conceptually planned for a home up to 3,100 sf.

Land Sales No. 2 Photo and Plan



Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

Land Sale No. 3**Property Identification**

Record ID 1419
Property Type Residential, Residential land
Address 78-80 Laurel Street, Melrose, Middlesex County, Massachusetts

Sale Data

Grantor Estate of Ruth Medalia Colangelo
Grantee 80 Laurel Street, LLC
Sale Date March 13, 2017
Deed Book/Page 1505/40
Property Rights Fee Simple
Conditions of Sale Arm's Length
Financing Cash or equivalent
Sale History No prior sale in previous 60 months
Verification Listing broker John Bulman; Other sources: Deed, plan, assessors, Confirmed by Christopher Bowler

Sale Price \$523,500
Cash Equivalent \$523,500

Land Data

Zoning URA, Single Family Residential
Topography Gentle Slope
Utilities Public sewer and water
Shape Rectangular
Flood Info Not in designated flood hazard zone

Land Size Information

Gross Land Size 0.394 Acres or 17,159 SF
Useable Land Size 0.394 Acres or 17,159 SF , 100.00%
Front Footage 123 ft Total Frontage: 123 ft Laurel

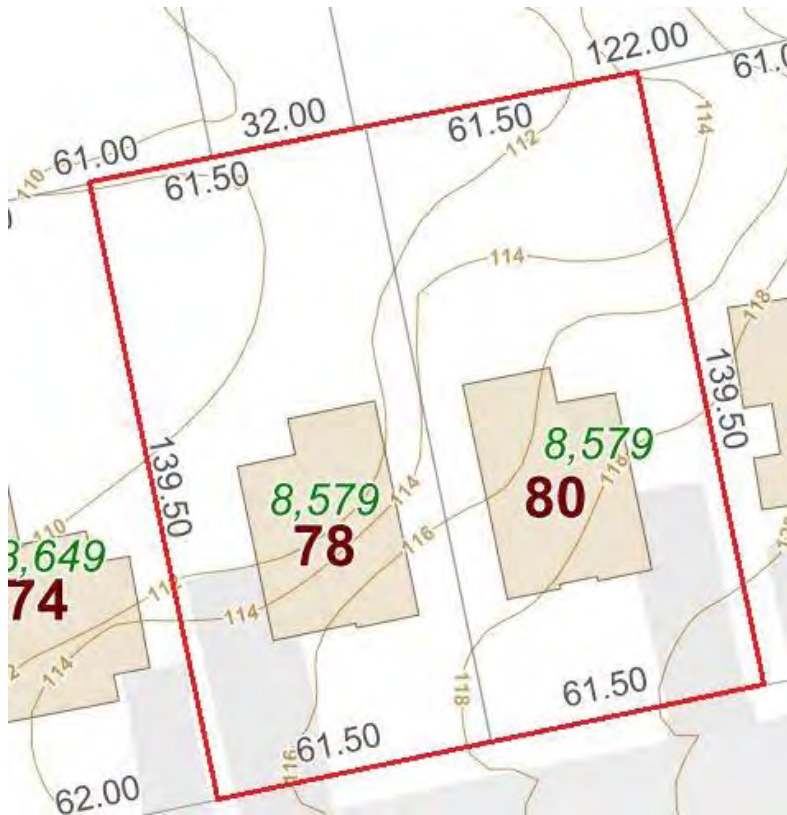
Indicators

Sale Price/Gross Acre \$1,329,001
Sale Price/Gross SF \$30.51
Sale Price/Useable Acre \$1,328,680
Sale Price/Useable SF \$30.50
Sale Price/Front Foot \$4,256

Remarks

Sale of two adjacent lots on the east side of town close to the town common. Since sale two homes built on the two lots. One 3,000 sf dwelling sold for \$1,275,000 in March of 2021. Gentle slope to rear.

Land Sales No. 3 Photo and Plan



Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

Land Sale No. 4**Property Identification**

Record ID 1420
Property Type Residential, Residential land
Address 62 Goss Avenue , Melrose, Middlesex County, Massachusetts

Sale Data

Grantor Leo R. Gerstel and Karen A. Gerstel
Grantee Robert W. Murray, Trustee of Hickory Tree Trust
Sale Date October 24, 2017
Deed Book/Page 70121/317
Property Rights Fee Simple
Conditions of Sale Arm's Length
Financing Cash or equivalent
Sale History No prior sale in previous 60 months
Verification Listing broker Kim Covino; Other sources: Deed, plan, assessors, Confirmed by Christopher Bowler

Sale Price \$390,000
Cash Equivalent \$390,000

Land Data

Zoning URA, Urban Residential
Topography Gentle slope
Utilities Public sewer and water
Shape Rectangular
Flood Info Not in designated flood hazard zone

Land Size Information

Gross Land Size 0.152 Acres or 6,600 SF
Useable Land Size 0.152 Acres or 6,600 SF , 100.00%
Front Footage 60 ft Total Frontage: 60 ft Goss

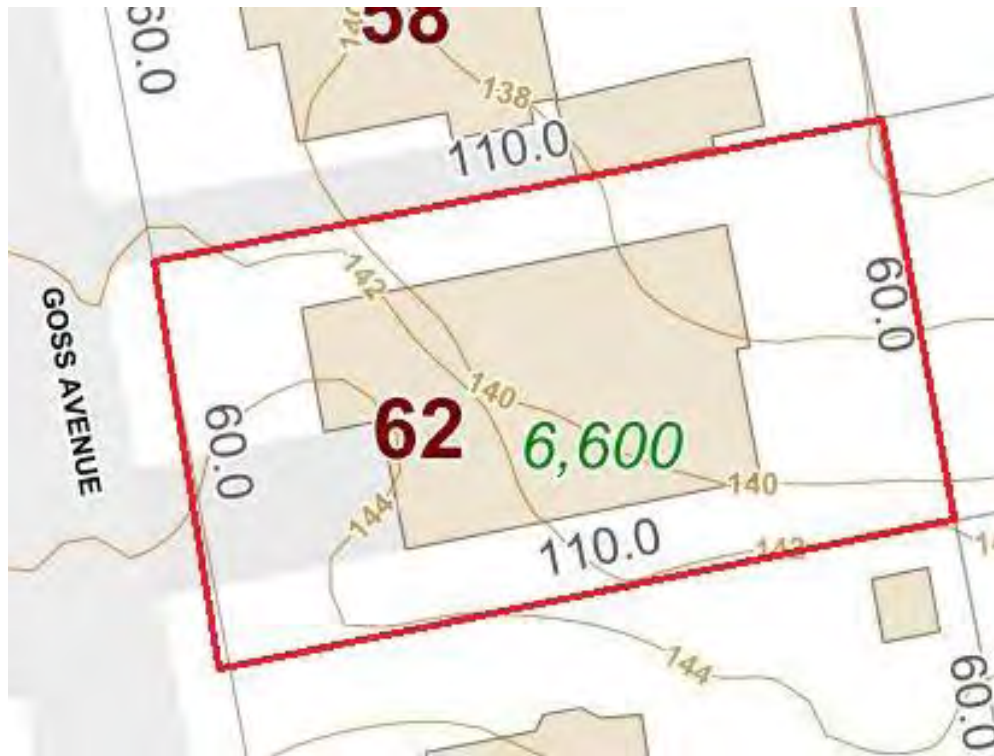
Indicators

Sale Price/Gross Acre \$2,574,000
Sale Price/Gross SF \$59.09
Sale Price/Useable Acre \$2,565,789
Sale Price/Useable SF \$58.90
Sale Price/Front Foot \$6,500

Remarks

Gently sloping, 60' x 110' lot. Older home razed to make way for new 3,216 sf colonial that sold for \$1,220,000 on February 11, 2020.

Land Sales No. 4 Photo and Plan



Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

Land Sale No. 5**Property Identification**

Record ID 1421
Property Type Residential, Residential land
Address Berkeley Street, Melrose, Middlesex County, Massachusetts

Sale Data

Grantor Brian Caira
Grantee Trin Ext Properties LLC
Sale Date November 30, 2021
Deed Book/Page 79253/10
Property Rights Fee Simple
Conditions of Sale Arm's Length
Financing Cash or equivalent
Sale History No prior sale in previous 60 months
Verification Listing brokers, The Marrocco Group; Other sources: Deed, plan, assessors, Confirmed by Christopher Bowler

Sale Price \$342,000
Cash Equivalent \$342,000

Land Data

Zoning URA, Urban Residential
Topography Slopes to rear
Utilities Public sewer and water
Shape Rectangular
Flood Info Not in designated flood hazard zone

Land Size Information

Gross Land Size 0.103 Acres or 4,500 SF
Useable Land Size 0.103 Acres or 4,500 SF , 100.00%
Front Footage 50 ft Total Frontage: 50 ft Berkeley

Indicators

Sale Price/Gross Acre \$3,310,560
Sale Price/Gross SF \$76.00
Sale Price/Useable Acre \$3,320,388
Sale Price/Useable SF \$76.23
Sale Price/Front Foot \$6,840

Remarks

This is a lot that sold with a dwelling on site that had experienced severe fire damage. Sold as a 'tear down'. Lot slopes steeply to rear.

Land Sales No. 5 Photo and Plan



Attachment: Avery appraisal final (ORDER-2022-114 : Drainage Easement Appropriation)

Land Sale No. 6**Property Identification**

Record ID 1422
Property Type Residential, Residential land
Address 275 Lebanon Street / 2 Fairfield Ave, Melrose, Middlesex County, Massachusetts

Sale Data

Grantor Jennifer M. Gray
Grantee Ingemi Realty, LLC
Sale Date January 26, 2018
Deed Book/Page 70558/528
Recorded Plat E4/12, 11
Property Rights Fee Simple
Conditions of Sale Arm's Length
Financing Cash or equivalent
Sale History No prior sale in previous 60 months
Verification Listing broker Mark Hutchinson; Other sources: Deed, plan, assessors, Confirmed by Christopher Bowler

Sale Price \$600,000
Cash Equivalent \$600,000

Land Data

Zoning URA, Urban Residential
Topography Moderately sloping
Utilities Public sewer and water
Shape Irregular
Flood Info Not in designated flood hazard zone

Land Size Information

Gross Land Size 0.428 Acres or 18,631 SF
Useable Land Size 0.428 Acres or 18,631 SF , 100.00%
Front Footage 361 ft Total Frontage: 360.714 ft Lebanon & Fairfield

Indicators

Sale Price/Gross Acre \$1,402,823
Sale Price/Gross SF \$32.20
Sale Price/Useable Acre \$1,401,869
Sale Price/Useable SF \$32.18
Sale Price/Front Foot \$1,662

Remarks

Sale of two adjacent lots in the southern end of town, close to the Malden line. Moderately sloping land. Each lot improved with 2,200+ sq ft colonial style homes post sale that each sold in the \$800,000's range.

Land Sales No. 6 Photo and Plan



Land Sale No. 7**Property Identification**

Record ID 1424
Property Type Residential, Residential land
Address 10 West Street , Melrose, Middlesex County, Massachusetts

Sale Data

Grantor Maidel Viola
Grantee H.B. Development Corp.
Sale Date June 08, 2020
Deed Book/Page 74633/20
Property Rights Fee Simple
Conditions of Sale Arm's Length
Financing Cash or equivalent
Sale History No prior sale in previous 60 months
Verification Listing broker Ronald Webb; Other sources: Deed, plan, assessors, Confirmed by Christopher Bowler

Sale Price \$200,000
Cash Equivalent \$200,000

Land Data

Zoning URA, Urban Residential
Topography Sloping
Utilities Public sewer and water
Flood Info Not in designated flood hazard zone

Land Size Information

Gross Land Size 0.215 Acres or 9,344 SF
Useable Land Size 0.215 Acres or 9,344 SF , 100.00%
Front Footage 153 ft Total Frontage: 153 ft West

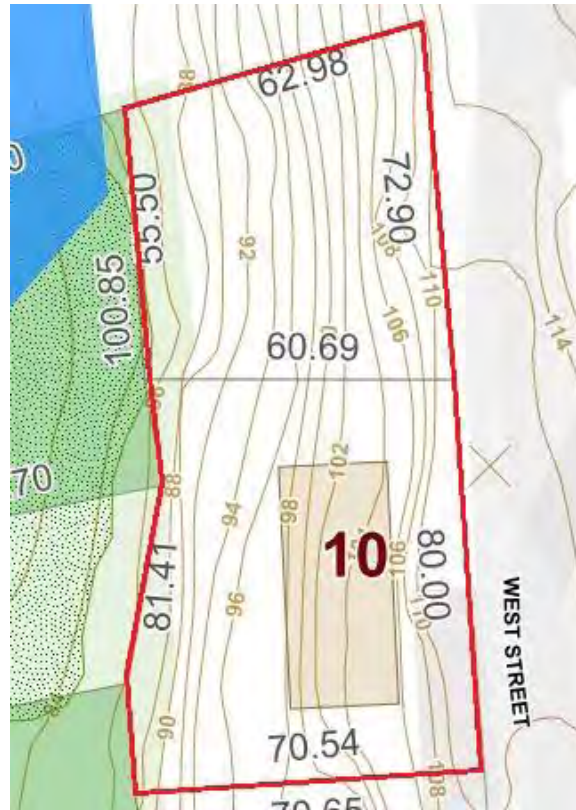
Indicators

Sale Price/Gross Acre \$932,363
Sale Price/Gross SF \$21.40
Sale Price/Useable Acre \$930,233
Sale Price/Useable SF \$21.36
Sale Price/Front Foot \$1,307

Remarks

Sloping lot northeast of town center. Older, 1,400 sf home razed to make way for new colonial style home that sold for \$955,000 in February of 2021. This lot had not been connected to city sewer. This was done by new buyer.

Land Sales No. 7 Photo and Plan



QUALIFICATIONS

**QUALIFICATIONS OF CHRISTOPHER H. BOWLER
REAL ESTATE APPRAISER AND CONSULTANT**

EDUCATION

- BA Economics, Union College, Schenectady, New York 1987
- Appraisal Institute
 - Course SPP Standards of Professional Practice
 - Course 1A-1 Basic Appraisal Principles, Methods and Techniques
 - Course 1A-2 Basic Valuation Theory and Techniques
 - Course 8-1 Residential Valuation
 - Course 1B-A Capitalization Theory & Techniques Part A
 - Course 1B-B Capitalization Theory & Techniques Part B
 - Course 550 Advanced Applications
 - Course 410 Standards of Professional Practice Part A
 - Course 420 Standards of Professional Practice Part B
 - Course 540 Report Writing & Valuation Analysis
- Argus Software
 - Valuation DCF 2 Day Training; 11/09

PROFESSIONAL AND TRADE AFFILIATIONS

- The Counselors of Real Estate
 - 2015 CRE Designation #13359
- Appraisal Institute
 - 1992 Senior Residential Appraiser - SRA Designation
 - 2000 Member of Appraisal Institute - MAI Designation #11564
 - 2002-4 Director, Massachusetts Chapter
 - 2005 Secretary, Massachusetts Chapter
 - 2006 Treasurer, Massachusetts Chapter
 - 2007 Vice President, Massachusetts Chapter
 - 2008 President, Massachusetts Chapter
- Massachusetts Certified General Real Estate Appraiser License #495

PROFESSIONAL EXPERIENCE

Qualified expert witness; Land Court of Massachusetts.
Qualified expert witness; Massachusetts Appellate Tax Board.

BUSINESS EXPERIENCE

Presently the Senior Associate and Chief Valuation Officer of Avery Associates, Acton, Massachusetts. Avery Associates handles a wide variety of real estate appraisal and consulting assignments. Mr. Bowler has prepared appraisals of apartment complexes, office buildings, industrial buildings, shopping centers, research and development facilities, hotels/motels, golf courses, restaurants, laboratory-life sciences buildings, medical office buildings, auto dealerships, truck terminals, warehouses, bank branches, commercial and industrial condominium units and buildings, lumber yards, service stations, industrial mill buildings, and cranberry bogs.

Mr. Bowler's experience also includes the appraisal of large tracts of land, conservation restrictions, proposed developments; condominium projects, mixed use retail and residential, and traditional single family subdivisions. Mr. Bowler has prepared market studies and feasibility analyses for proposed developments of both residential and commercial projects. Prior to joining Avery Associates in 1992, Mr. Bowler was employed in the following manner:

1987-1992	Real Estate Appraiser Edward W. Bowler Associates Waltham, Massachusetts
1987	Research Associate, New York State Department of Transportation Albany, New York

BUSINESS ADDRESS

Avery Associates
282 Central Street
Post Office Box 834
Acton, MA 01720-0834
Tel: 978-263-5002
Fax: 978-635-9435
chris@averyandassociates.com

QUALIFICATIONS OF JONATHAN H. AVERY
REAL ESTATE APPRAISER AND CONSULTANT

EDUCATION

BBA University of Massachusetts, Amherst, Massachusetts
 Graduate of Realtors Institute of Massachusetts - GRI
 American Institute of Real Estate Appraisers
 Course 1-A Basic Appraisal Principles, Methods and Techniques
 Course 1A-B Capitalization Theory and Techniques
 Course 2 Basic Appraisal of Urban Properties
 Course 6 Real Estate Investment Analysis
 Course 410/420 Standards of Professional Practice

PROFESSIONAL AND TRADE AFFILIATIONS

The Counselors of Real Estate

1985 - CRE Designation #999
 1993 - Chairman, New England Chapter
 1995 - National Vice President
 1999 - National President

Appraisal Institute

1982 - Member Appraisal Institute - MAI Designation #6162
 1975 - Residential Member - RM Designation #872
 1977 - Senior Residential Appraiser - SRA Designation
 1981 - Senior Real Property Appraiser - SRPA Designation
 1986-1987 - President, Eastern Massachusetts Chapter
 1992 - President, Greater Boston Chapter
 1995 - Chair, Appraisal Standards Council
 1996-1998 - Vice Chair, Appraisal Standards Council

Massachusetts Board of Real Estate Appraisers

1972 - MRA Designation
 1981 - President of the Board

Royal Institution of Chartered Surveyors

2005 - FRICS Designation

Affiliate Member, Greater Boston Real Estate Board

Licensed Real Estate Broker - Massachusetts 1969

Massachusetts Certified General Real Estate Appraiser #26

New Hampshire Certified General Real Estate Appraiser #NHGC-241

BUSINESS EXPERIENCE

Mr. Avery is Principal of the firm of Avery Associates located in Acton, Massachusetts. Avery Associates is involved in a variety of real estate appraisal and consulting activities including: market value estimates, marketability studies, feasibility studies, and general advice and guidance on real estate matters to public, private and corporate clients. Mr. Avery has served as arbitrator and counselor in a variety of proceedings and negotiations involving real estate. During 1993, he served as an appraisal consultant for the Eastern European Real Property Foundation in Poland. He has been actively engaged in the real estate business since 1967 and established Avery Associates in 1979. Prior to his present affiliation, Mr. Avery served in the following capacities:

1978-1979 Managing Partner, Avery and Tetreault,
Real Estate Appraisers and Consultants
1975 -1978 Chief Appraiser, Home Federal Savings and Loan Association
Worcester, Massachusetts
1972-1975 Staff Appraiser, Northeast Federal Saving and Loan Association
Watertown, Massachusetts
1971-1972 Real Estate Broker, A. H. Tetreault, Inc.
Lincoln, Massachusetts

TEACHING EXPERIENCE

Instructor, Bentley College, Continuing Education Division, 1976-1982;
Appraisal Methods and Techniques
Computer Applications for Real Estate Appraisal
Approved Instructor Appraisal Institute - since 1982
Chapter Education Chairman 1986-1987
Seminar Instructor; Massachusetts Board of Real Estate Appraisers since 1981
Certified Appraisal Standards Instructor-Appraiser Qualifications Board

PROFESSIONAL EXPERIENCE

Qualified expert witness; Middlesex County District Court and Superior Court, Essex County Superior Court, Norfolk County Superior Court, Plymouth Superior Court, Worcester County Probate Court, Federal Tax Court, Federal Bankruptcy Court, Appellate Tax Board of Massachusetts and Land Court of Massachusetts. Member, Panel of Arbitrators - American Arbitration Association, National Association of Securities Dealers Regulation.

Property Assignments Include:

Land (Single Lots and Subdivisions)
One to Four Family Dwellings
Apartments
Residential Condominiums
Office Buildings
Restaurants
Industrial Buildings
Racquet Club
Petroleum Fuel Storage Facility
Lumber Yard
School Buildings

Historic Renovations
Movie Theater
Conservation Easements
Hotels and Motels
Shopping Centers
Golf Courses
Churches
Gasoline Service Stations
Farms
Office Condominiums
Automobile Dealerships

BUSINESS ADDRESS

Avery Associates
282 Central Street
Post Office Box 834
Acton, MA 01720-0834
Tel: 978-263-5002
Fax: 978-635-9435
jon@averyandassociates.com

**AVERY ASSOCIATES
REPRESENTATIVE LIST OF CLIENTS**

FINANCIAL INSTITUTIONS

Avidia Bank
Bank of New England
Belmont Savings Bank
Berkshire Bank
Cambridge Savings Bank
East Boston Savings Bank
Enterprise Bank & Trust
Farm Credit East
Main Street Bank
Middlesex Federal Savings
Middlesex Savings Bank
Fidelity Bank
North Shore Bank
Rollstone Bank & Trust
Salem Five Cent Savings Bank
Seneca Insurance Co.
TD Bank, N.A.
Webster Five Cents Savings Bank
Workers Credit Union

PUBLIC SECTOR/NONPROFIT

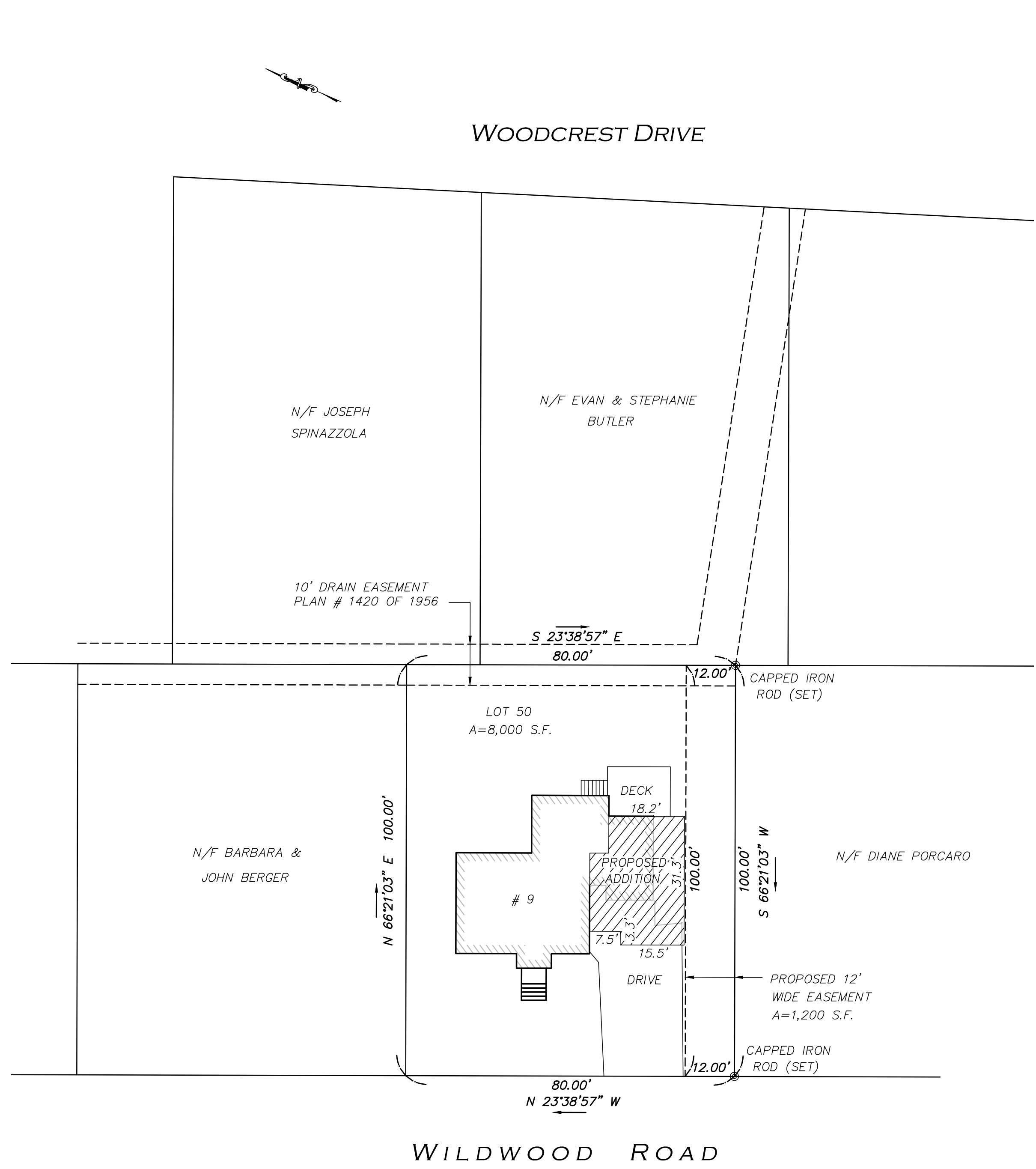
American Arbitration Association
Church of Latter Day Saints
City of Marlborough
Emerson Hospital
Essex County Greenbelt Association
Internal Revenue Service
Mass Audubon
Mass. Dept. of Conservation/Recreation
Massachusetts Dept. of Agricultural Resources
MassDevelopment
MassHousing
Sudbury Valley Trustees
The Nature Conservancy
The Trust for Public Land
Town of Acton
Town of Concord
Town of Lexington
Trustees of Reservations
U. S. Department of Interior
U.S. Department of Justice
U.S. Forest Service
Walden Woods Project
Water Supply District of Acton

CORPORATIONS

Avalon Bay Communities
Boston Medflight
Concord Lumber Corporation
Dow Chemical Company
Exxon Mobil Company
Fidelity Real Estate
Genzyme/Sanofi
John M. Corcoran & Co.
Marvin F. Poer and Company
McDonald's Corporation
Minuteman Airfield, Inc.
PriceWaterhouseCoopers
Sun Life Assurance Company
The Mathworks, Inc.
Toyota Financial Services
U.S. Postal Service
W. J. Graves Construction Co., Inc.
Zoll Medical Corp.

LAW FIRMS & FIDUCIARIES

Anderson & Kreiger LLP
Choate, Hall & Stewart
DLA Piper
Edwards, Angell, Palmer & Dodge
Foley Hoag, LLP
Goodwin Procter
Hemenway & Barnes LLP
Holland & Knight
Kates & Barlow P.C.
Kirkpatrick Lockhart Nicholson Graham
Kopelman & Paige P.C.
Regan & Kiley, LLP
Tarlow, Breed, Hart & Rodgers P.C.
Nutter, McClennen & Fish, LLP
Office of Stephen Small, Esq.
Peabody & Arnold, LLP
Prince, Lobel, Glovsky & Tye
Rackemann, Sawyer & Brewster
Riemer & Braunstein, LLP
Ropes & Gray
Sloane and Walsh, LLP
Shapiro, Weissberg & Garin LLP
WilmerHale



OWNER OF RECORD
ANDREW & KATHERINE TOBIN
BOOK 71283 PAGE 483 M.S.R.D.
ZONING DISTRICT
TAX MAP H9 PARCEL 51
SRB RESIDENCE
PLAN REFERENCES
END OF BOOK 7119

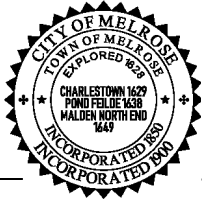
I HEREBY CERTIFY:
THAT ACCORDING TO DEEDS AND PLANS OF RECORD
THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE
LINES DIVIDING EXISTING OWNERSHIP, AND THE LINES
OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC
OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED
AND THAT NO NEW LINES FOR THE DIVISION OF
EXISTING OWNERSHIP OR FOR NEW STREETS AND WAYS
ARE SHOWN.
THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH
THE RULES AND REGULATIONS OF THE REGISTERS OF
DEEDS, DATED JANUARY 1, 1976 AND REVISED
JANUARY 12, 1988.

EDWARD J. FARRELL PLS

EASEMENT PLAN OF LAND
9 WILDWOOD ROAD
MELROSE, MASS.
SCALE: 1" = 20' APRIL 26, 2022

Prepared By
EDWARD J. FARRELL
PROFESSIONAL LAND SURVEYOR
110 WINN STREET ~ SUITE 203 ~ WOBURN, MA.
(781)-933-9012





CITY OF MELROSE

DEPARTMENT OF PUBLIC WORKS

*Administration-Engineering-Water-Sewer-Facilities
Parks-Forestry-Highway-Sanitation-Cemetery-Fleet*

Vonnie Reis, P.E.
City Engineer

**City Hall, 562 Main Street
Melrose, Massachusetts 02176
Telephone - (781) 979-4172
E-mail: VReis@cityofmelrose.org**

April 26, 2022

To: Mayor Paul Brodeur

Re: Vote for approval of purchase of Drainage Easement and Appropriation of Funds to Purchase Easement at 9 Wildwood Rd in Melrose, MA.

Dear Mayor Brodeur,

In December 2021, the residents of 9 Wildwood Rd. in Melrose called the Engineering Division of the DPW because a city-owned drainage pipe was encountered during excavation related to an addition to their house. Engineering staff visited the site and confirmed that the 30-inch reinforced concrete pipe (RCP) was active and is owned by the City. The pipe was installed during the 1950's when the subdivision was developed. This structure is shown on the City's GIS mapping and was known to us, however an easement for the pipe was never recorded as part of the development project. There is also no evidence on the property or in any registry filings of the existence of this easement. As such, the owners of the property were previously unaware of the existence of the pipe.

This request is made pursuant to the requirements of state law which require City Council approval for this easement, and for City Council to appropriate the necessary funding to do so. The City engaged the services of Avery Associates to appraise the fair value of the easement. Avery's assessment of the value is \$48,000. A copy of the assessment is attached to this memorandum as Exhibit A. The owners of the property have agreed to accept that amount and, in return will grant a drainage easement, in perpetuity, to the City in exchange for purchase of this easement.

A confirmatory record of the easement is necessary for the DPW to maintain the pipe which carries a significant amount of flow from the surrounding neighborhoods and is a critical piece of infrastructure.

The Engineering Division of the Department of Public Works recommends that the City Council vote to authorize you to accept and purchase on behalf of the City of Melrose a drainage easement from the property owners located at 9 Wildwood Rd. in Melrose, containing 1,200 square feet of land, more or less, as depicted on a plan entitled "Proposed Drainage Relocation, 9 Wildwood Road, Melrose, Mass", dated December 24, 2021, as amended and prepared by Edward J Farrell. This plan is attached as Exhibit B. We further request that the City Council vote to appropriate the sum of \$48,000 for the purchase of this easement at 9 Wildwood Rd in Melrose from the current property owners as professionally assessed by Avery Associates in their report of January 28, 2022.

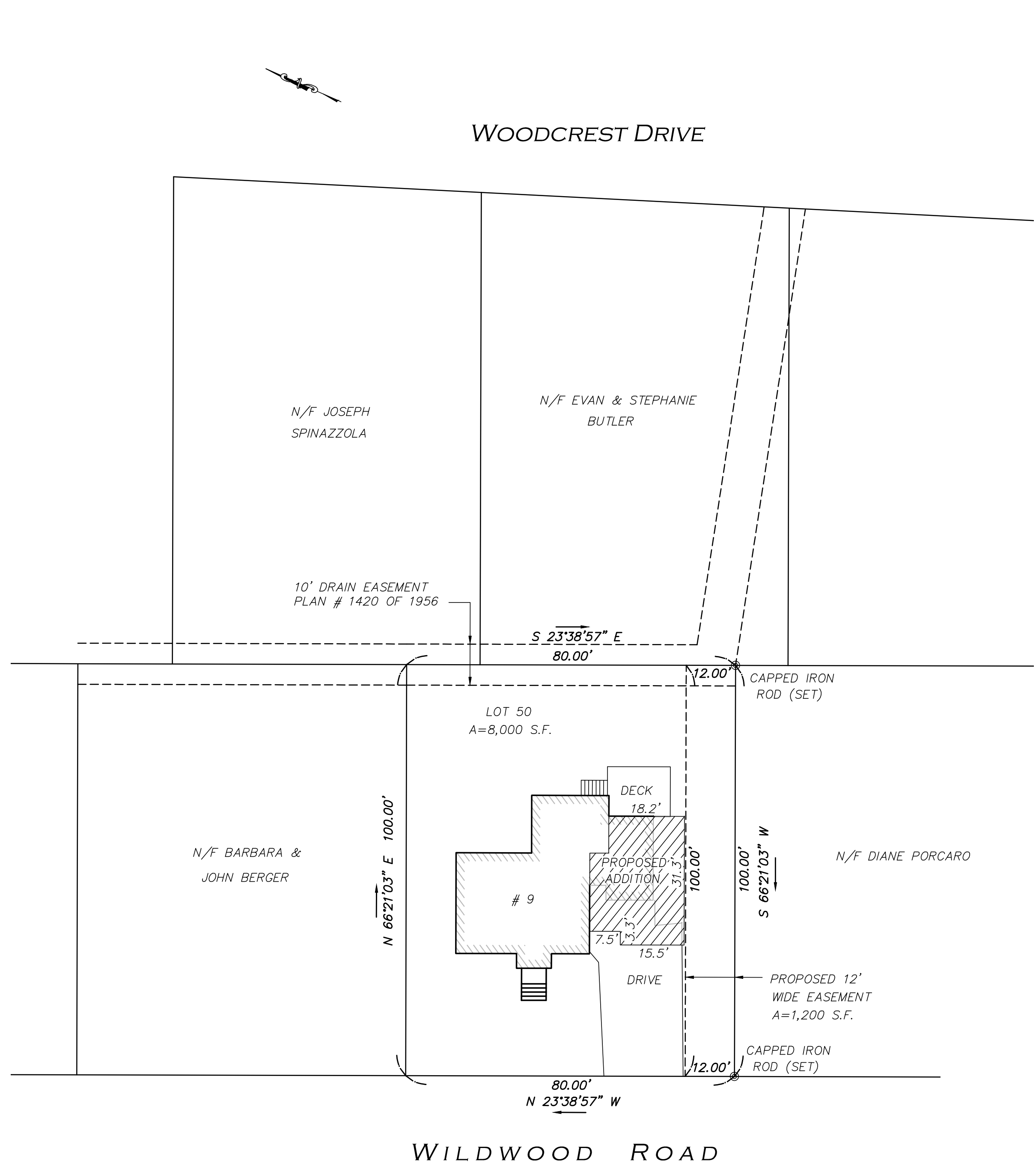
Sincerely;

Vonnie Reis

Vonnie Reis, P.E.
City Engineer

cc: Elena Proakis Ellis, DPW Director
Shannon Philips, City Solicitor
Patrick Dello Russo, CFO/Auditor

Attachment: memo to mayor 042622 (ORDER-2022-115 : Drainage easement)



OWNER OF RECORD
ANDREW & KATHERINE TOBIN
BOOK 71283 PAGE 483 M.S.R.D.
ZONING DISTRICT
TAX MAP H9 PARCEL 51
SRB RESIDENCE
PLAN REFERENCES
END OF BOOK 7119

I HEREBY CERTIFY:
THAT ACCORDING TO DEEDS AND PLANS OF RECORD
THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE
LINES DIVIDING EXISTING OWNERSHIP, AND THE LINES
OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC
OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED
AND THAT NO NEW LINES FOR THE DIVISION OF
EXISTING OWNERSHIP OR FOR NEW STREETS AND WAYS
ARE SHOWN.
THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH
THE RULES AND REGULATIONS OF THE REGISTERS OF
DEEDS, DATED JANUARY 1, 1976 AND REVISED
JANUARY 12, 1988.

EDWARD J. FARRELL _____ PLS

EASEMENT PLAN OF LAND
9 WILDWOOD ROAD
MELROSE, MASS.
SCALE: 1" = 20' APRIL 26, 2022
Prepared By
EDWARD J. FARRELL
PROFESSIONAL LAND SURVEYOR
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