



Belmont Citizens Forum

Cushing Square: What Did We Learn?

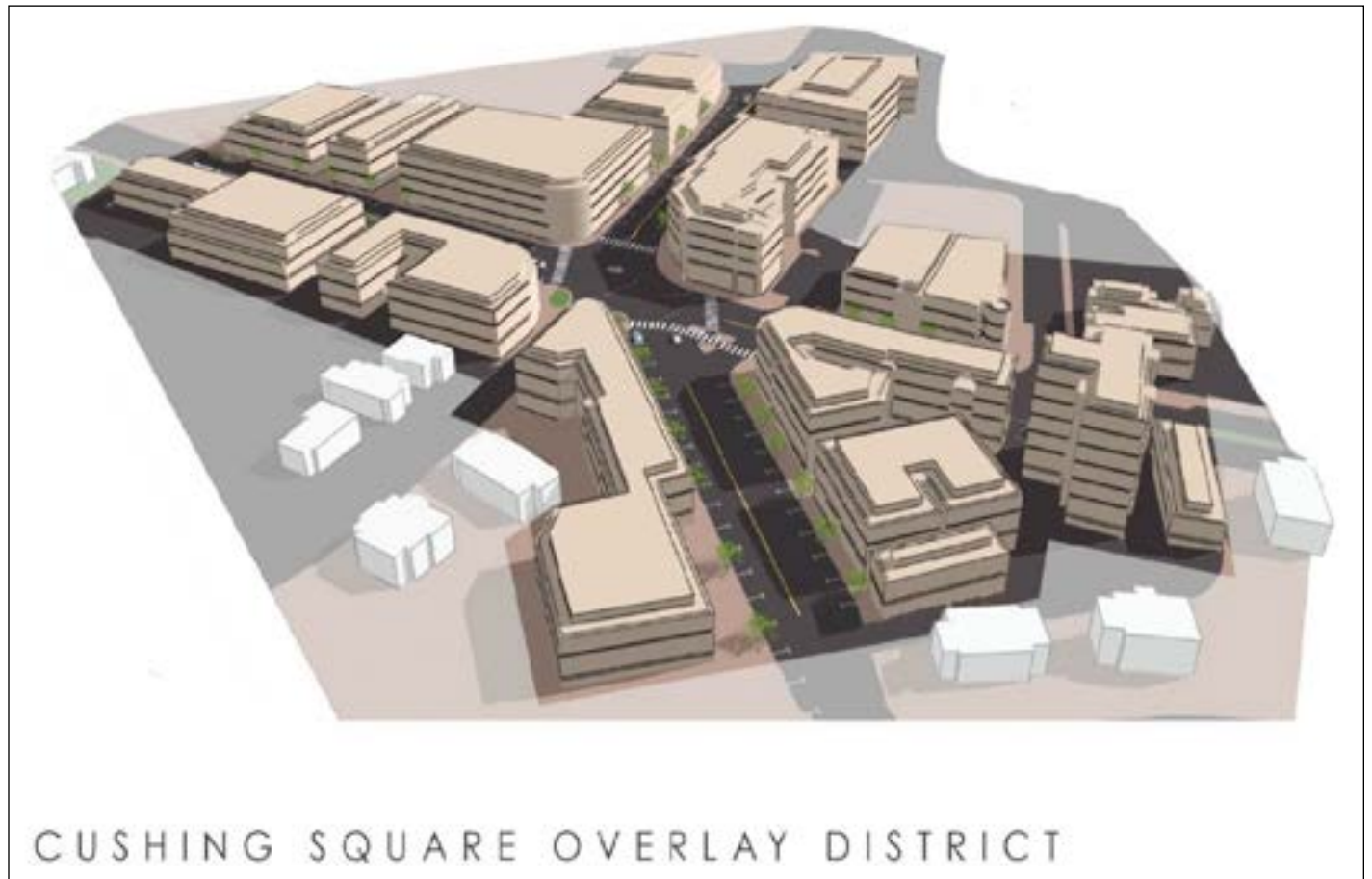
By Meg Muckenhoupt and Virginia Jordan

The Bradford development in Cushing Square disrupted Belmont's streets, sidewalks, planning, and politics, and stressed local businesses over the last decade. Town Meeting adopted a new overlay district in 2006 to channel development and provide the Planning Board with tools to control the scale and look of Cushing Village, now the Bradford, a three-building project comprising 38,000 square feet of ground-floor retail space, 112 residential units on upper floors, and 201 parking spaces. In the past 14 years, the town has learned some lessons about managing

large construction projects—and how large construction projects affect us.

How the Bradford development began

Technically, the Bradford development began in 2004 when the Planning Board granted a special permit to build a three-story building at 495 Common Street, site of a former dry cleaners. The feature that makes the Bradford site different from other Belmont sites, though, is that it is part of a new overlay district for Cushing Square approved by Town Meeting in 2006.



A visualization of the maximum permitted build-out under the Cushing Square Overlay District's rules. Graphic by the Cushing Square Neighborhood Association.

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Belmont Citizens Forum Inc. is a not-for-profit organization that strives to maintain the small-town atmosphere of Belmont, Massachusetts, by preserving its natural and historical resources, limiting traffic growth, and enhancing pedestrian safety. We do this by keeping residents informed about planning and zoning issues, by participating actively in public hearings, and by organizing forums.

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An overlay district is an extra set of rules and options that apply to the site on top of the existing zoning. Overlay districts do not replace current zoning, but can give new privileges to builders and additional controls to the town. For example, developers can fulfill simpler permitting requirements if they follow design guidelines. **The Cushing Square Overlay District adopted by Belmont Town Meeting in 2006** relaxed building size and parking requirements and allowed three-story buildings by right, and up to four stories with a special permit.

Karl Haglund, Planning Board chair at the time, **described the intention of the proposed overlay district** in November 2006: “This overlay district will allow for more mixed use for the area. Under certain conditions developers could get higher density and different uses than is currently available in the zoning bylaw.”

Jay Szklut, Belmont’s town planner at the time, stated clearly that the bylaw was written to promote investment. “The purpose is to design a square that is aesthetically pleasing and to incentivize development. Business relationships are a focus and the overlay district and the bylaw streamlines the permitting process.” Commercial development was encouraged by allowing larger square foot areas.

In 2008, Town Meeting agreed to discontinue a short section of Horne Road, and to allow a sale of the municipal parking lot at the discretion of the Select Board—a sale which was not completed until 2016, when developer Chis Starr of Smith Legacy Partners finally persuaded the Select Board that he had a financially viable proposal, and purchased the lot. Starr sold the property to Toll Brothers a few months later.

The Belmont Economic Development Advisory Committee (a temporary committee convened in 2011 and disbanded in April 2018) thought Cushing Square would be a model for development elsewhere in town. **The committee’s 2012 meeting minutes** stated, “The learning from Cushing Square will help the Planning Board as it evaluates South Pleasant Street. Issues for Cushing Square include height, mass, square footage; adjacency to neighbors, economic impact data, and traffic data will also be considered.” **Candidates for the Select Board**



CSNA

A visualization of Cushing Square under maximum buildout allowed by the Cushing Square Overlay District, as viewed from Trapelo Road to the southeast.

expressed hopes for “Cushing Village as a trial run for larger development and the potential of Waverley Square, the Moraine Street property, and the Purecoat site.”

The Cushing Square “trial run”

It’s 2020, and time to review what that “trial run” has shown our town. The Belmont Citizens Forum (BCF) sent questionnaires about Cushing Square development to Planning Board members, local businesses, and residents, and interviewed a former Planning Board member about their experiences. Here is what they said.

Lessons about overlay districts

The first question BCF asked was, “What would we learn if the Planning Board reviewed the Cushing Square overlay district process in retrospect? What would they learn?”

Scale and appearance

Several said one of the challenges was visualizing the scale of the development. Doug Koplow, a Cushing Square resident and activist, commented:

“Overlay district creation should involve massing studies from the outset so residents

can visualize how the allowable scale, if actually built, would affect the look and feel of their neighborhood. These should show views from the street level looking in at the development from all directions.

“Had this exercise been done at the earliest stages of the debate on the proposed overlay district, it would likely have resulted in adjustments to the Cushing Square overlay bylaws prior to their approval. When CSNA [Cushing Square Neighborhood Association] hired somebody to develop this massing simulation about five years ago, the urban feel of a full build out was striking.”

Andres Rojas, a former member of both the Planning Board and the Select Board, agreed that Belmont residents were not ready for what they got:

“The corner building’s facade along Common Street is too long and massive, particularly at four stories tall. The exterior materials and colors of the corner building (too many discordant colors, textures, and materials) and the building at the corner of Common and Belmont Streets (blue and cream) are incongruous to everything else in Belmont and Cushing Square . . . The original concept of ‘Cushing Village’ was not intended

Jeanne Widmer's Ode to a Town's Village

Belmont resident Jeanne Widmer had two photography exhibitions featuring the Cushing Square development scheduled for this spring. The first, at the Griffin Museum of Photography in Winchester, was cut short due to the COVID-19 pandemic. The second, scheduled at Belmont's Beech Street Center, was cancelled outright.

Artist's Statement

Ode to a Town's Village was inspired almost three years ago when I first started taking pictures of a sprawling three- and four-story development in a relatively small, mostly single-story village in Belmont. While the demolished area was in serious need of upgrading, the massive scale, snail-like progress, and disruption of the construction over four years, still unfinished, has seriously hurt many small businesses struggling to stay afloat in the area.

The series was more difficult than I had originally anticipated. The construction is across the street from the stores, making the angle of contrasting sizes and architectural styles nearly impossible to capture without an aerial view. Finding the right lighting was another issue: the compelling photographic details of the small businesses were more visible in the evening, while the construction at the same hour was too hidden and appeared almost romantic, especially since it sat in near darkness. I settled on a single black-and-white photo of one of the three buildings taken at slightly after midday to capture the vivid lighting that revealed the details of the building. I made this photo significantly larger in size than the others in an effort to show how it overpowers the stores.

While development and change have been going on since the beginning of time, there is no question that some are steps forward and others less so. What I hope viewers can appreciate in this series is the simple dignity, warmth, and beauty that such small businesses bring to a community even while relentless "progress"—sometimes harsh and colorless—continues its resolute push forward despite the consequences.



Karenna Maraj at her Cushing Square store.

to produce the massive facade along Common Street or the lack of contextual integration noted above.”

Michael Smith, an architect, urban designer, and Cushing Square neighborhood resident, commented: “The architecture of the primary building façade lacks order in joint patterns and details, something that should have been picked up by the Planning Board.”

Jeanne Widmer, photographer and educator, said, “It [the Bradford] is massive (four stories high including the parking floor in the building on Trapelo Road) with almost no setback or interesting architectural features. It overpowers the mainly one-story buildings in the area.”

Asked about criticisms that the project was massive, Chris Starr, the initial developer, said:

“The CSOD [Cushing Square Overlay District] Bylaw was attempting to create a new and different developmental growth pattern of high-density development that is environmentally sustainable, socially inclusive, transit-oriented, provides the community with needed amenities (e.g., a small food store) and adds significantly to the tax base. These goals were central to Cushing Village’s design . . . Remember the CSOD allows for development to be almost twice as dense as the current Cushing Village project, so Belmont needs to be careful of what it asks for in the future.”

Starr offered advice on density that’s similar to Koplow’s recommendation:

“I believe that the town leadership should make sure that developers, abutters, and the broader community have clear expectations and understanding of what is going to result from a development. One way of doing this is by using more 3D renderings of potential designs.

“Further, I think clear, objective performance standards need to be developed and upheld throughout the permitting process so that everyone knows what the rules of the road are. For example, the CSOD bylaw allows developments that have up to 3.0 floor-to-area ratio (FAR) to be approved. After 5 years in the case of Cushing Village, a little more than half this maximum FAR was approved under its final design.

“Bylaws should not over-promise development rights that are unachievable or simply won’t be

approved. For future bylaws and permitting, maximum FAR should be lower and set at a realistically approvable level.”

Process

How should Belmont deal with a large-scale development in the future? Rojas suggested, “More specific zoning and design review requirements may be necessary as related to the actual percentage of fourth floor areas, length of facades, exterior material choices and colors, and relating to the specific context.”

Judie Feins, a Cushing Square neighbor, Town Meeting member, and long-time housing advocate, agreed that more specific zoning would be better. She wrote,

“They [the Planning Board] will learn that there is an enormous amount of wiggle room—and therefore oversight work—involved when so much depends on site plan review. Over the past several years, we have continued to move in the direction of more Planning Board responsibility for implementation. At the same time, our capacity for oversight has not grown at all. Indeed, it has shrunk. This would suggest the zoning needs to be written more tightly.”

Starr, who owned the site from 2004-2016, commented:

“Our team constantly was changing the design and scaling it back to please the neighbors, who literally had to sign off on the design before the Planning Board would approve it. The resulting design is as much the neighborhood’s as it is ours.

“It should be noted that the same members of the Horne Road neighborhood that supported the passage of the CSOD Bylaw at 2006 Town Meeting were some of the harshest critics of the project throughout the permitting of Cushing Village.

“I believe that these people agreed with the goals of the CSOD conceptually, but as the reality of the bylaw’s density set in, they got buyer’s remorse.”

Lessons about Cushing Square

Delays

The Cushing Square construction had its problems. Some of these issues are part of any large development; some are unique to Cushing

Square. Neighbors dealt with disruption from construction noise and debris, clogged traffic and road obstructions, growing populations of rodents, and some property damage. The loss of street parking and the municipal lot further hurt local businesses.

Chris Starr, when asked, “Was the process reasonable?” wrote:

“I am going to let your readers make their own opinion on this. It took: a) 5 years of meetings, hearings, discussions with town officials & abutters and planning, b) 3 town meetings, c) 27 Special Permit hearings, d) over 100 town staff meetings, e) 3 major design revisions at \$250,000 apiece and f) over \$1,000,000 in conceptual planning and drawings, to permit Cushing Village (a/k/a The Bradford).”

Town officials cite delays by the property owner, who received several deadline extensions.

After nine years, the 2004 plan had morphed in 2013 into the extended Cushing Village development. In 2018, the development was renamed the Bradford by the new owners, Toll Brothers, which bought the site in 2016.

The discovery in 2003 of hazardous materials leaking from the former Tops Cleaners site spurred a lengthy remediation process that was not completed until 2018. Remediation in and of itself isn’t unusual: former dry cleaning sites commonly require treatment for chemical leaks before the land is reused, though usually

completed sooner. Starr initially attempted to use a cheaper chemical process to reduce the soil’s toxicity on site, which did not resolve the contamination problems, and therefore delayed the beginning of construction. The soil was eventually shipped to hazardous waste facilities by a firm hired by Toll Brothers.

Another reason the Cushing Square development took so long to build was Starr’s difficulty getting financing, compounded by the 2008 recession. He paid more than \$600,000 in fines to the town for construction delays in 2015 and 2016, **according to The Belmontonian**. His company sold the site to Toll Brothers **for \$14 million in October 2016**. Only then was a building permit for the foundation issued, in May 2017, with a full building permit issued in **April 2018**.

The Bradford development includes 50 municipal parking spaces—mostly underground—to replace the lost municipal lot, plus an additional 51 commercial spaces and 101 resident parking spaces.

Smart growth

Some respondents felt that developing more and denser housing in Cushing Square is a good idea in general. Responding to the question, “Is Cushing Square a model for large developments elsewhere in town?” Feins wrote:

“Focusing development in our commercial squares and along transit lines is a good model for other areas in town. We need both housing and economic development. Combining retail, restaurant, and/or office space in buildings with apartments—buildings that include parking and are along major bus lines—supports local businesses and fosters walkable neighborhoods. The scale and design of buildings should vary depending on the location.”

Michael Smith agreed:



The Bradford under construction.



“The housing density of Cushing Village at the busy intersection of Common Street and Trapelo Road is appropriate. Trapelo Road is a bus route to Harvard and Waverley Squares providing public transportation access to major work centers in Cambridge, Boston, and other urban areas. Such access provides an opportunity to reduce traffic, lower pollution levels, and improve local businesses. Unfortunately, there are few opportunities along that route with sufficient land to provide such housing as Cushing Village. Accordingly, the density seems appropriate for this site.”

Jenny Fallon was a chair of the Planning Board when the board took the initiative to ask Chris Starr to propose an expanded development. She concurred in an interview: “How do you balance neighbors’ concerns with development rights to create a larger tax base and more housing to renew a commercial area like Cushing Square? It will always be controversial.”

What has not changed since 2004

One thing that has not changed since 2004 is Belmont’s ambivalence about “smart growth” projects which place dense housing near town centers and transportation corridors, according to Fallon. “The community has got to come to come to terms with whether or not smart growth—in terms of development rights in areas

that are already developed—is something the town wants,” said Fallon. “Is that supported by the community, and how do we figure that out?”

Sixteen disruptive years later, the Bradford has yet to open, and residents continue to question its benefits to the neighborhood, businesses, and town. In June 2019, 10 residents of Cushing Square asked the Planning Board for an in-depth review of the overlay district. **Former chair Charles Clark suggested** the Board look at smaller versions of the overlay district and reduce height and reduce FAR (floor-to-area ratio). He also suggested creating a new draft for the Cushing Square Overlay District and holding public hearings for input.

The Planning Board’s review has yet to take place, but the Planning Board will revisit the topic after this fall’s Special Town Meeting, according to Steven Pinkerton, current Planning Board chair. Pinkerton wrote, “Planning Board members noted that, in addition to aesthetic considerations, a full impact review should consider effects on housing, business, and traffic, beyond those experienced just during the construction period and beyond the immediate neighborhood.”

Meg Muckenhoupt is editor of the Belmont Citizens Forum Newsletter. Virginia Jordan is a member of the Belmont Citizens Forum Newsletter Committee.

Community Path Progress Continues

By John Dieckmann and Jarrod Goentzel

Progress on the Phase 1 design of the Belmont Community Path continued during the first half of 2020 despite coronavirus constraints. Nitsch Engineering, the design firm chosen by the town last fall, was able to hold a critical meeting in early March with Massachusetts Department of Transportation (MassDOT) and MBTA officials at which the MBTA clarified its requirements for access to the Fitchburg Line on the north side of the tracks.

The MBTA feedback from that meeting keeps the project on track for submission of 25%

layout 25% design also encompasses right-of-way and environmental permitting considerations.

Phase 1a entails building the railroad underpass between Alexander Avenue and Belmont High School and an extended path across the campus to Concord Avenue. Phase 1b is the portion of the Belmont Community Path path from the Clark Street pedestrian bridge to Brighton Street, where it meets the existing Fitchburg Cutoff Path to Alewife. **A conceptual design report, shared in February with the Community Path Project Committee (CPPC),** is available on the town web site.

The recommended path in the conceptual



Map of the proposed Phase 1 Belmont Community Path design.

design documents to MassDOT this summer, following a public meeting to collect comments on a draft version of the 25% design. MassDOT acceptance of 25% design is an important step in qualifying the Belmont path for Transportation Improvement Program (TIP) funding; in addition to a high level outline of the path

design report is 16 feet wide where space allows. The general route and design follow the north side of the Fitchburg commuter rail tracks. The path is set between 12 and 25 feet from the tracks. Between Belmont Center and Clark Street, the path climbs a 4.5% grade and runs on the MBTA-owned embankment between the tracks

and Pleasant Street, reaching street level at Clark Street.

Between Belmont Center and the 40 Brighton Street property the right of way is about 70 feet wide (distance from the tracks to the Channing Road backyards), and the path is about 25 feet from the tracks, leaving about 30 feet as a buffer between the path and the residential property lines. An existing easement provides for a path about 12 feet wide along the 40 Brighton Street property, assuming the MBTA allows a retaining wall 12 feet from the tracks.

On March 9, Nitsch Engineering and town officials held a critical meeting with the MBTA and MassDOT. The key outcome was that the MBTA and MassDOT approved the placement of the path proposed by Nitsch, and scheduled discussions to formalize easements with the town. The MBTA also stated a clear preference for tunnel construction via the jacking method, which is generally more expensive than the “cut and cover” method, but with some flexibility regarding the plan outlined in the conceptual design depending on final boring samples. Though many details have yet to be designed, a clear plan for the path now exists, based on extensive use of MBTA land.

At a CPPC meeting on May 14, John Michalak, senior project panager for Nitsch Engineering, reported that Nitsch is ready to finalize the 25% design to submit to MassDOT following public comment on a draft version scheduled to be posted on June 29, and a public meeting in mid-July at which the design will be presented and residents can further comment.

Michalak also highlighted how community input shaped the design. For example, the existing trees and bushes will be maintained, and potential flooding issues on properties along Channing Road will be addressed by designing a new 12” subdrain to capture stormwater runoff. Submitting the 25% design is a key milestone in the Massachusetts Transportation Improvement Program (TIP) process to request state and federal construction funds.

The TIP is a five-year budget plan developed by the Boston Region Metropolitan Planning Organization (MPO) through an annual process. Belmont already has a \$1.5 million project in the TIP: the Safe Routes to School Improvements at

Wellington Elementary School, planned for fiscal year 2021, which will reconstruct and widen sidewalks leading to the school and bring cross-walks up to current standards.

Phase 1 of the Belmont Community Path is already listed in the TIP Universe of Projects but with no timeline. The MPO process next year will determine if, and how soon, Belmont will be added to the list for a specific fiscal year based on a matrix of factors such as safety, mobility, sustainability, equity, and economic vitality, in comparison with competing projects from other towns.

The MPO recently completed its annual review of the 2021–25 TIP at a May 28 meeting at which public comments were reviewed and a set of projects spanning the next four years formally endorsed. In the final two days of the public comment period, which closed on May 21, nine letters submitted by Belmont residents were classified by the MPO as opposed to the Belmont Community Path, with one Belmont resident listed in support based on comments during a Virtual TIP Open House. This ratio is exactly opposite of the 90% support in a 2013 town survey with 1,500 responses. It also does not reflect the level of public engagement at a January 2014 public meeting with 303 attendees.

While town deliberation regarding the path has taken eight years (starting with the Community Path Advisory Committee, formed in 2012), it may only take one year for the MPO to determine if and when to budget the \$16.7 million to cover the full cost of Phase 1a and Phase 1b construction (staged funding is also possible). Clear support from town leaders and residents this next year could result in outside funding to build a major town amenity, and broad support could accelerate the timing.

The CPPC aims to post links to the 25% design along with a form for online feedback by June 29 and to schedule a public presentation by Nitsch the week of July 13-17.

John Dieckmann is vice president of the Belmont Citizens Forum. Jarrod Goentzel is chair of the Friends of the Belmont Community Path. He can be reached at belmontpath@gmail.com.

Pandemic Bicycle Sales Surge

By Sumner Brown

Ever since March 15, I have noticed fewer cars and more bicycles on Belmont’s roads. I also heard that bicycle stores have had unusual business activity. I called Peter Mooney, an owner of Wheelworks, the bicycle store in Waverley Square.

Peter, how is business?

Busy. That is Busy with a capital B. We are very busy. We are designated an essential business, for transportation. We have not missed a day.

To maintain physical separation, we do not

customer can see features and specifications. Our web site has sizing help. We avoid bringing bicycles to the sidewalk since there are so many bicycles available. This on-line sales route accounts for at least 95% of our sales.

The most popular bicycles are hybrid bicycles in the \$500 to \$700 range. We cannot get enough of these. Most of our products come from Asia, and Asian manufacturers have had disruptions from the pandemic.

This boom in bicycle sales is national. Bike shops everywhere can not get enough product. Bicycle usage is up. People see an opportunity



Peter Mooney (left) and Wheelworks customers.

allow customers into our store. For service, customers call to make an appointment. Currently there is a ten-day wait for the next available service appointment. Before the appointment day, the customer brings the bicycle to our shop and we collect the bicycle and get the customer’s wishes. Then, while the customer waits outside, we take the bicycle to the service area to take a closer look. Then it is back and forth to the customer on the sidewalk and service station until agreement is reached.

For sales, we have modified our web site so almost all our sales are done on line. A customer can see our real-time inventory, and there are links to the manufacturers’ web sites so the

to bicycle, something they have not done for years. We always have serviced old bicycles that have been collecting dust, rust, and spider webs. Now the percentage of the old bicycles in for service is way up.

With fewer cars this is a perfect time to ride. Many people are using the bike path, but it can be crowded. It is a great time to explore the country roads to the west. If you get to Concord, Weston, Lincoln, it seems like there are more bicycles than cars.

This is a perfect time to ride.

Sumner Brown is a director of the Belmont Citizens Forum.

New Rock Meadow Parking Plan Proposed

By Jeffrey North and Mary Trudeau

The Belmont Conservation Commission recently engaged a team of Northeastern University students to explore parking lot and stormwater drainage improvements for Rock Meadow. As visitors to Rock Meadow can attest, the parking lot is inefficient, rutted, partially paved, and often filled with pockets of standing water. Improvements have been called for since at least 1968, when the report, A Program for Renewing Rock Meadow, stated the obvious: “The entrance is not attractive and does not do justice to the beautiful area beyond.”

The arrival experience is incongruent with Rock Meadow’s value as a treasured public open space, especially given its unprecedented popularity in recent months. The COVID-19

crisis has brought many more residents outdoors, and open space for recreational use is suddenly in far greater demand by dog walkers, birders, family strollers, hikers, bikers, and the community gardeners who regularly tend the 140 plots at Rock Meadow. The current parking and site access conditions have created traffic conflicts for cars entering and exiting onto Mill Street, and the inefficient parking configuration has affected the ability of citizens to park safely.

Residents of Belmont and surrounding towns use Rock Meadow as a regional recreational facility. Rock Meadow is connected to other green spaces including Lone Tree Hill, Mass Audubon’s Habitat, and Beaver Brook and Beaver Brook North reservations. Rock Meadow Conservation Area also forms part of

the Western Greenway, a 1,200-acre interconnected open space that runs through Waltham, Lexington, and Belmont. There are few urban wilds of this size and ecological richness in the Greater Boston area.

Rock Meadow, A Conservation Master Plan, completed in the spring of 2018 by ecological design graduate students at the Conway School, noted a host of parking lot and driveway deficiencies, including erosion and poor drainage, and stated, “The parking lot is eroding and puddled, and the surrounding vegetation lacks intentional design.” The plan was made possible by a grant to the Belmont Conservation Commission from the Judy Record Conservation Fund.

The completed master plan provided the impetus for the commission to consider improvements to the parking and access roadway off Mill Street. The Belmont Conservation Commission engaged a team of five environmental engineering students from Northeastern University’s co-op program to produce a technical design for rebuilding the parking lot and entrance that incorporates best ecological practices. The goal of the design project was to produce a shovel-ready technical document that could be handed to town engineers and a contractor to construct a new parking lot.

The Northeastern students, known collectively as Evergreen Engineering, came to Town Hall on March 10, for a community meeting to present their initial work and to hear comments on the Rock Meadow parking lot design alternatives. **Their final report** is available on the town website.

Using the principles established in the master plan, Evergreen Engineering identified three principal criteria that would guide the design:

- Sustainability (green, educational)
- Adaptability (accounting for climate change, redundancy)
- Community satisfaction (aesthetics, meeting community needs)
- Sustainability

Evergreen’s mission was to provide design solutions with an emphasis on sustainable, low-impact development. The final design is one that utilizes green infrastructure while minimizing dependence on gray infrastructure,

Prize-Winning Design

Evergreen Engineering submitted the Rock Meadow Parking Lot project to the New England Water Environment Association Student Design Competition, which is intended to promote a real-world design experience for students interested in pursuing careers in water engineering and sciences. The team won the Water Environment division category, qualifying the team to move up to the national Water Environment Federation Student Design Competition in New Orleans this October.

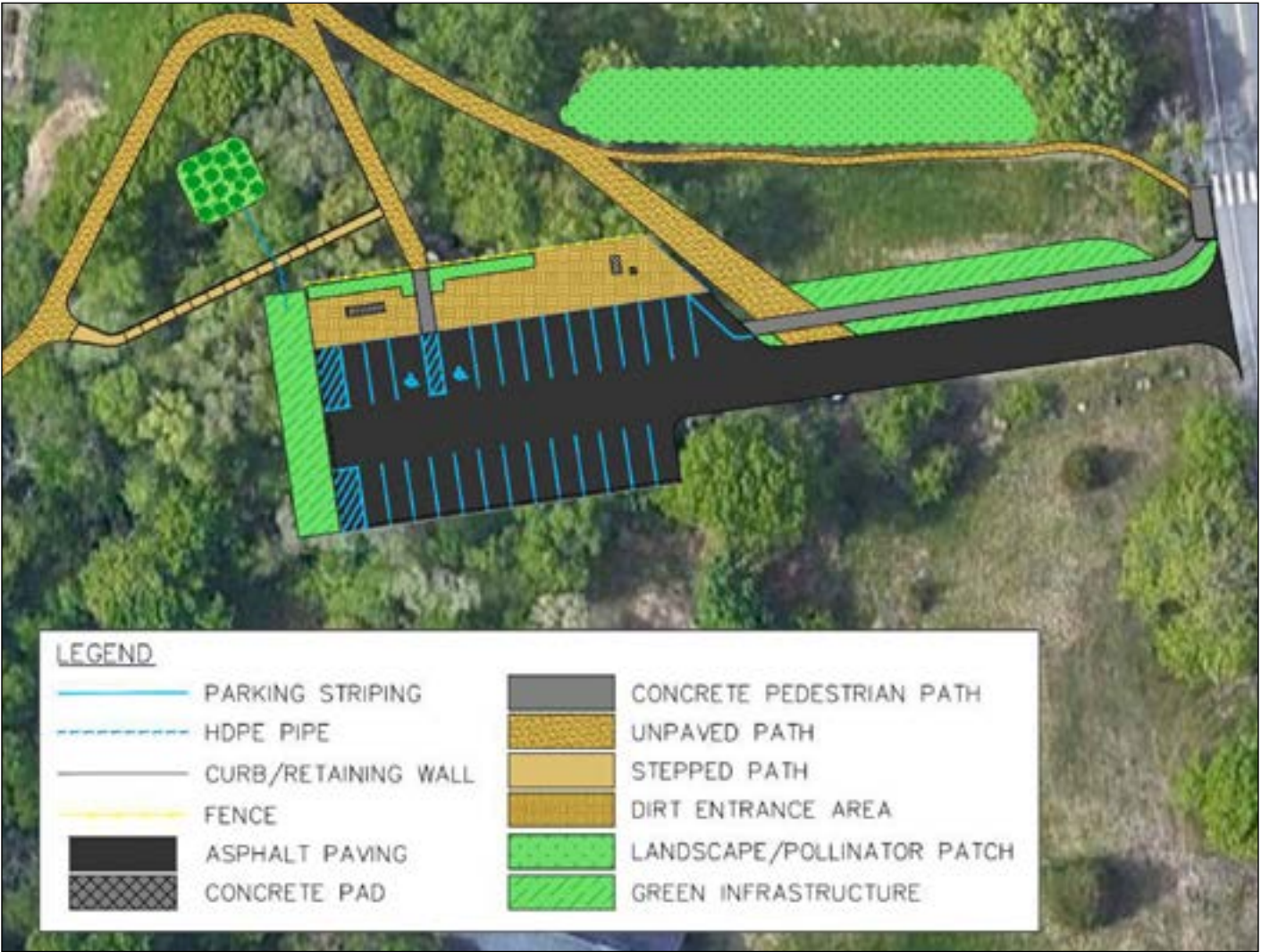
i.e., conventional storm drains, sewers, pipes, and culverts. The plan addressed sanitary needs, waste disposal, power demand, and invasive species intrusion. These sustainability goals align with the Belmont Conservation Commission’s desire to provide a space “where humans and nature meet.” Green design aspects are an opportunity to demonstrate Belmont’s commitment to sustainability for this and other public spaces. This environmentally conscious approach to the entrance and parking lot design will foster collective appreciation for Rock Meadow and shared responsibility for its conservation.

Adaptability

The proposed design should account for impending climate change and increasing precipitation. Green infrastructure will improve the stormwater infiltration rate, allowing water to pass through the ground quickly, avoiding overflow. Various alternatives for handling these flows were evaluated to ensure that the redeveloped site is adaptable to the ever-changing conditions and higher volumes of stormwater runoff. To this end, Evergreen evaluated multiple stormwater best management practices, all of which are described in the final report, and prepared a low-maintenance, high-impact system to manage runoff from the new infrastructure.

Community Satisfaction

Evergreen Engineering recognized that community satisfaction is critical to the project.



A plan for a new Rock Meadow parking lot and entrance paths by Evergreen Engineering.

Rock Meadow's parking area and entrance should provide an inviting experience. Residents have stated they would like the parking lot to change. Evergreen incorporated the values and priorities outlined in the master plan community vision statement, which states that visitors shall encounter "a refuge that supports both tranquil stillness and mindful movement through the experience of nature."

Maintaining as many natural features as possible in the design and adding green infrastructure for stormwater management supports this vision.

Evergreen incorporated the values and priorities outlined in the master plan community vision statement, which states that visitors shall encounter 'a refuge that supports both tranquil stillness and mindful movement through the experience of nature.'

The scope of Evergreen's design work included aligning new design features with the goals of the Conway School master plan and using the plant palettes outlined in the plan for the stormwater management green infrastructure and the pollinator patch. In other areas, Evergreen was able to build on the plan's conceptual ideas and supplement them with additional engineered systems. While the plan recommends an 18-space parking lot, Evergreen studied existing conditions and sized the lot for 28 spaces including two handicap van-accessible spaces and a concrete ramp from the lot to the meadow.

Where the plan suggests the use of green infrastructure, Evergreen has designed a vegetated filter strip, bioswale, and rain garden in accordance with state stormwater guidelines. Landscaping includes a scenic vista for reflection upon entering the meadow and a pollinator patch on the north side of the driveway to promote native wildlife.

Evergreen also evaluated various site improvements intended to enhance the site as an inviting community center. Their recom-

mendations include toilet facilities, signage, ADA compliance with handicapped parking, and increased security to make the parking experience comfortable and safe. A path will be added along the north edge of the driveway to provide pedestrian access to Rock Meadow from Mill Street and a new bike rack will be added on the north side of the parking lot.

Evergreen's plan includes strategic management of the stormwater onsite with a vegetated filter strip along the north edge of the driveway and a bioswale and rain garden system on the west side of the parking lot. All design was performed in accordance with the Massachusetts Stormwater Handbook for the maximum possible total suspended solids and phosphorus removal from the stormwater.

On April 15, despite the disruption of their campus closing due to the COVID-19 pandemic, Evergreen Engineering presented the final Rock Meadow Parking Lot Design report to their Northeastern University faculty advisors and the Belmont Conservation Commission via teleconference. The presentation was embraced by town and gown as an academic and professional triumph as well as a municipal infrastructure planning success. The 176-page final report and design document describes the existing conditions, design considerations, alternatives considered, final design and recommendations, technical diagrams, and cost estimates.

The Belmont Conservation Commission is commencing discussions with the conservators of neighboring conservation land, the Land Management Committee for Lone Tree Hill (much of the parking lot is on the Lone Tree Hill property), as well as the Historic District Commission, as both properties are part of the McLean Hospital Historic District. Both commissions hope to identify funding sources, and meet with Glenn Clancy, Belmont's director of community development, to gauge current capacity within the town to fund construction.

Jeffrey North is the ex-officio Belmont Conservation Commission representative on the Land Management Committee for Lone Tree Hill. Mary Trudeau is the staff member of the Belmont Conservation Commission, which oversees the Rock Meadow Conservation Lands and Victory Gardens.

Commission Plans Lone Tree Hill Restoration

By Jeffrey North

Belmont's 119-acre Lone Tree Hill conservation area, like many recreational lands in the region, is plagued by the insidious creep of invasive plant species. The ecological value of this forest and meadow conservation land is depreciating due to a host of invasive plants that act like predators, harming native plants from oak trees to ferns, forbs, and shrubs. Asiatic bittersweet, for example, has enveloped oak, hickory, and pine trees, covering, killing, and felling a number of these tall trees that define the edge of the meadow and the land's viewshed. Glossy buckthorn and honeysuckle are killing gray dogwoods. Garlic mustard displaces both native flora and fauna; it produces root exudates that inhibit the growth of important soil fungi, and leaf chemicals that kill native butterfly larvae which feed on it. Patches of Japanese knotweed, currently small and limited in their footprint on Lone Tree Hill, will expand unless treated, overtaking every other plant in their expanding vicinity. The ecological condition of this valuable regional conservation area will only deteriorate unless action is taken to preserve it.

With matching support from the Judy Record Conservation Fund, the Land Management Committee for Lone Tree Hill (LMC) agreed at its March 4 meeting to engage local firm Parterre Ecological to study the property and produce a plan for remediation and ongoing maintenance against invasive plant infestations. Ecological restoration professionals Ryan Corrigan and Miles Connors presented the Invasive Plant

Management and Native Plant Restoration Plan

to the LMC at its May 7 meeting. The plan includes a mapped, prioritized inventory of invasive plants at sites across the property, and creates over 25 projects for removal and replanting, each with recommendations for initial treatment and ongoing maintenance.

The map of the entire property was divided into three sections, further subdivided into zones, to illustrate specific invasive species



A map of Lone Tree Hill. Light green marks meadow areas: darker green indicates forests.



Garlic mustard.

populations and strategies for their control. For example, the top priority is the most visually prominent parcel on the property, between the parking lot on Mill Street and the wooded area to the west of the meadow, labeled Area A1. It is a dense invasive bramble that surrounds the western border of the Great Meadow. This area contains dead native vegetation and thick stands of invasive plants. The recommendation is that Area A1 should be cut by a forestry mower, seeded with meadow plants, and replanted with native shrubs further into the forested edge.

In some portions of Area A1, glossy buckthorn (*Frangula alnus*) has completely overwhelmed the native plant community. This monoculture lacks insect diversity which forms the basis of the food web.

The plan calls for contractor mowing within the 133,000 square foot area where dense invasive shrubs have overwhelmed the tree canopy. The remaining trees will be lost without professional intervention.

The LMC asked Parterre to identify areas requiring professional attention as well as sub-parcels that could be remediated by volunteers. The plan indicates the degree of treatment difficulty for each of the 25 project areas. The northern border with Concord Avenue, for example, contains a healthy pitch pine/oak forest with isolated patches of glossy buckthorn. These buckthorn patches can be managed by

cutting and herbicide treatment by licensed professionals and maintained by volunteers to prevent self-seeding.

Recommended habitat interventions include provision for bird and wildlife food, nesting cavities for birds, shelter for mammals, exposed bark for bats, nutrients for the soil, and even a moist forest floor for reptiles and amphibians. Cut and stacked invasive plants can be left on site to mimic the benefits of downed logs to offer shelter (“critter condos”) in areas where invasive species are being removed.

All is not dire on Lone Tree Hill. There is a stark contrast of ecological health on either side of the red maple wetland brook, with moderate stands of invasive buckthorn stands to the west and a diverse mix of summersweet, highbush blueberry, and black cherry to the east. The property is worthy of restoration to return more of the acreage to a similar healthy state.

The plan will enable stewards and stakeholders to decisively move forward on meadow, edge, and forest restoration work. The plan contains bid specifications for the larger projects, while allowing the LMC to assign the smaller projects to any of several qualified companies or volunteer efforts. Finally, the plan



Japanese knotweed.

is presented in terms of which tasks are best performed at certain times of the year, with a management calendar for treatment, mowing, and monitoring.

Without intervention, the area will continue its ecological decline until the meadow is overrun and the forest is decimated. Belmont residents may recall what the area looked like before its restoration in 1999: a mass of impenetrable vines and thorns (bittersweet, buckthorn, multiflora rose, poison ivy, tree of heaven, and more) in place of the inspiring meadow that we enjoy today. With this report, members of the LMC are pleased to have a working document that provides definitive steps for managing invasive species at Lone Tree Hill, and ultimately guiding the conservation area to a healthier, more diverse ecosystem for all visitors (and resident and itinerant fauna) to enjoy.

At its most recent meeting on June 24, the LMC, with matching financial support from the Judy Record Conservation Fund, agreed to engage a team of professionals to begin the prescribed restoration strategy in the shrub layer of the Area A1 woodland, including cutting, mowing, and plant-specific herbicide application. Additional projects will be undertaken as resources allow.



Multiflora roses.

The complete plan is available on the Belmont town website.

The Land Management Committee for Lone Tree Hill is deeply grateful to the trustees of the Judy Record Conservation Fund for their continuing support of the maintenance and improvement of this valuable and treasured conservation land.

Jeffrey North is the ex-officio Belmont Conservation Commission representative on the Land Management Committee for Lone Tree Hill.

Invasive Plants at Lone Tree Hill

The Invasive Plant Management and Native Plant Restoration Plan identified 12 invasive plant species growing on Lone Tree Hill along with 5 more “likely invasive species.”

Invasive plant species identified:

Ailanthus altissima, tree of heaven
Alliaria petiolata, garlic mustard
Berberis thunbergii, Japanese barberry
Celastrus orbiculatus, Asiatic bittersweet
Cynanchum louiseae, black swallow-wort
Euonymus alatus, burning bush
Fallopia japonica, Japanese knotweed
Frangula alnus, glossy buckthorn
Lonicera morrowii, Morrow’s honeysuckle
Lythrum salicaria, purple loosestrife
Rhamnus cathartica, common buckthorn
Rosa multiflora, multiflora rose

Likely invasive plant species* identified:

Ligustrum, privet
Malus sylvestris, wild crab apple
Vitis spp., wild grapes
Rhodotypos scandens, black jetbead
Philadelphus coronarius, sweet mock orange

* While not listed as an invasive species by MIPAG (Massachusetts Invasive Plant Advisory Group), these species can dominate the shrub layer and crowd out native trees and shrubs. We recommend removing non-native crab apple along with listed invasive plant species in wetland buffers and replacing them with native shrubs and trees.

Leaf Blowers Damage Environment, Health

By Ian L. Todreas

Each spring and fall, dozens of landscaping companies dispatch teams to yards throughout Belmont to cut, trim, mow, rake, and blow hedges, bushes, lawns, and beds into coffee-table-magazine standard perfection. But at what cost? These services are not inexpensive. Moreover, their hidden costs are significant.

Gasoline-powered lawn equipment, such as leaf blowers, lawnmowers, weed whackers, and hedge trimmers, are notorious for emitting proportionally vast amounts of pollution—and making a heck of a lot of noise. Leaf blowers, in particular, deserve a close look. Unlike many other gasoline-powered lawn tools, for the amount of time they are used and the labor they save, they are especially bad for local air quality, plantings, human health, and any unprotected ears.

Air quality impacts of leaf blowers

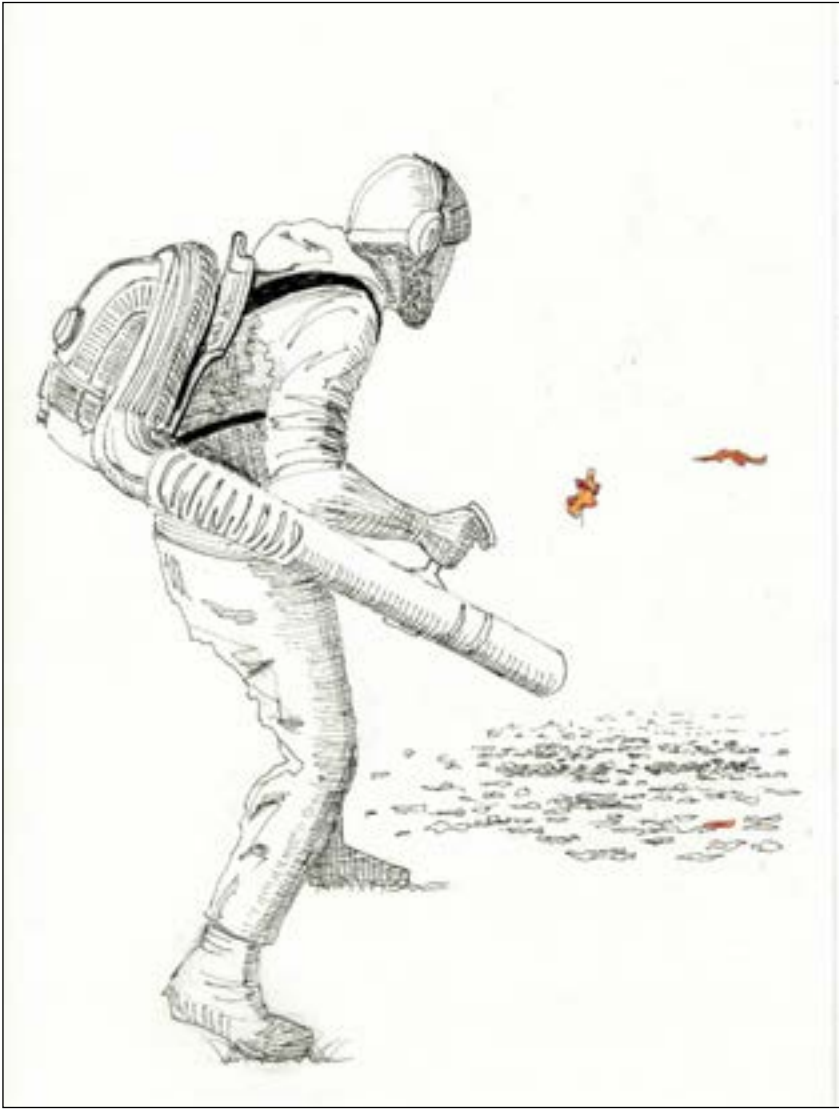
The engines of gas-powered blowers come in two varieties: two-stroke and four-stroke. Two-stroke engines are in lighter, cheaper blowers. By design, the engines mix fuel with oil, and roughly 30 percent of fuel doesn't fully combust. This means that the engines emit

large amounts of air pollutants—carbon monoxide, nitrous oxides and hydrocarbons—all toxic to human health. Four-stroke engines are larger, heavier, and more powerful. While they emit less air pollution per unit of fuel, they are still quite polluting.

Almost all these engines operate without air quality controls or filters. Studies have measured a two-stroke leaf blower emitting 299 times the amount of hydrocarbons (HCs) of a pickup truck and 93 times those of a sedan. Using one for 30 minutes generates the same amount of HCs as driving a pickup 3,900 miles.

The age and model of leaf blowers matter, but only a little. Ultrafine particle levels in the air near an 11-year-old leaf blower were 50 times higher than at a nearby clogged intersection at rush hour. With a current-model leaf

blower, in the same round of tests, the ultrafine particle level was still more than 40 times higher than at the busy intersection. The best-selling commercial leaf blower, according to a California Air Resources Board fact sheet, when operated for one hour, emits smog-forming pollution comparable to driving a Toyota Camry for 1,100 miles, or approximately the distance from Los Angeles to Denver.



In addition to spewing large amounts of toxic, carcinogenic pollutants into our yards, leaf blowers introduce other air-quality problems. The hurricane-force winds they generate to push leaves around also launch all kinds of fine and coarse irritants into the air, not only dirt and dust (including fine particles from other sources that have already settled on the ground), but also pollen, mold, animal feces, heavy metals, and chemicals from herbicides and pesticides. These particles can remain aloft for hours before resettling, posing problems for seniors, children and anyone nearby with compromised lungs.

Noise pollution and health of operators

The high-pitched whine of a leaf blower is presumably the origin of the nickname, “the Devil’s hairdryer.” This insidious feature is the result of housing the machine’s internal fan without insulation, making the leaf blower more irritating than an electric motor of equivalent loudness.

I don’t need a study to tell me that leaf blowers are loud (too loud!). But it is helpful to know exactly how leaf blowers compare to other noisemakers in our midst. Noise is measured in units of decibels (dB). A refrigerator operates at 50 decibels, whereas a table saw operates at 105 decibels. Decibels are not a linear scale; each increase of 10, say from 60 to 70, represents a noise 10 times more powerful. From 50 feet away, most leaf blowers measure in the 70-75 dB range—about the same noise you’d expect 50 feet from a freeway. (Most instrument-measured sound levels are now adjusted to reflect the ear’s response to different frequencies, known as A-weighting or dBA. Belmont by-law §60-615 states exterior noise standards as dBA.)

For the unfortunate souls operating the blowers, the noise is up to 95 dB, almost as loud as standing next to a motorcycle, according to the CDC. (Hopefully the operators are provided industrial strength ear protection, and wear it.) As for the rest of us, my observation is that most homes and schools in Belmont are within 50 feet of properties that could be subject to a leaf blower.

And in practice, the term “leaf blower” is almost a misnomer, since contractors employ them most of the year instead of hand tools, to

clear lawns, walkways, flower beds, stonework and streets. It’s common to see a landscape crew of three or four blow mixed debris into the public street, then move it again into a pile to be carted away. The town of Arlington acknowledged year-round use in its discussions of a seasonal leaf blower ban.

From 50 feet away, most leaf blowers measure in the 70-75dB range—about the same noise you’d expect 50 feet from a freeway.

Other concerns

Leaf blowers damage more than air quality and suburban tranquility. The force of their wind damages grasses, flowers, and shrubbery with shallow root systems. Oil spills from refueling and maintenance cause soil and groundwater pollution. Burning those fossil fuels is a local contribution to global climate change. The social justice implications of asking those less fortunate with fewer employment choices to inhale the fumes and endure the deafening noise are profoundly disturbing, just to move leaves around that, up until the 1970s, were either left in place to decompose or handled with a simple rake.

What can we do?

Leaf blowers are probably not going away anytime soon. But we shouldn’t have to live with their toxic outputs and ear-splitting whining. So what can we do to preserve the tranquility of our neighborhoods and the quality of the air we breathe? Plenty.



- Having the town set an example by retiring its leaf blowers and using alternatives.
- Establishing and promoting a preferred vendor list of quiet landscapers, and/or setting up a recognition component to bring positive publicity to landscapers who forgo leaf blowers.
- Setting up an educational campaign to raise awareness about leaf blowers and their hidden costs so homeowners are aware of the impacts of their choices.
- Educating and incentivizing residents and

landscapers to replace gas-powered leaf blowers with quieter models, such as electric battery-powered leaf blowers. The **quieter models produce 65 dB at the source**, not 85.

Lastly, Belmont as a town, or interested precincts or neighborhoods, could embark on becoming an American Green Zone Alliance-certified property or area. **According to Quiet Communities**, a nonprofit that runs this certification program, “an AGZA Green Zone is a defined area of land—a park, a campus, a shopping center, a neighborhood—maintained routinely without the use of gas-powered equipment, relying instead on a combination of advanced battery-powered equipment, sustainable landscaping, and manual methods.” There is no reason to continue to endure the mental and physical harm from leaf blowers.

Ian Todreas is an environmental consultant who has advised federal, state, and local agencies on mobile source emissions and climate issues for more than 20 years. He is a Belmont resident, Town Meeting member, former co-chair of the Belmont Energy Committee, and artist at updoggallery.com.

Regulatory solutions

Town government is empowered to enact bylaws that limit excess noise (noise ordinances), and **Belmont has some on the books**. Belmont could also pass a ban on leaf blower use. Some communities have done one or both, but these efforts are rarely successful in limiting leaf blower use. This is partly because regulations and bylaws like these are not enforced; towns tend to tread lightly on enforcing regulations that don’t have overwhelming public support or appear to be infringing on life, liberty, and perceptions of the pursuit of individual happiness. No law enforcement agency ever enforces the regulation against vehicle idling, for example, when a private citizen sits idling in their car.

Voluntary measures

An alternative to regulatory solutions is to adopt a voluntary campaign to limit leaf blowers. Belmont has a good track record of success with voluntary programs, including Better Homes Belmont, Belmont Goes Solar, and Belmont Drives Electric. Some elements of that campaign could include:

- Setting up a public pledge for homeowners to sign not to use leaf blowers, not to hire companies that use leaf blowers, and to only hire companies that use rakes.

Belmont Farmers’ Market Adapts to COVID-19

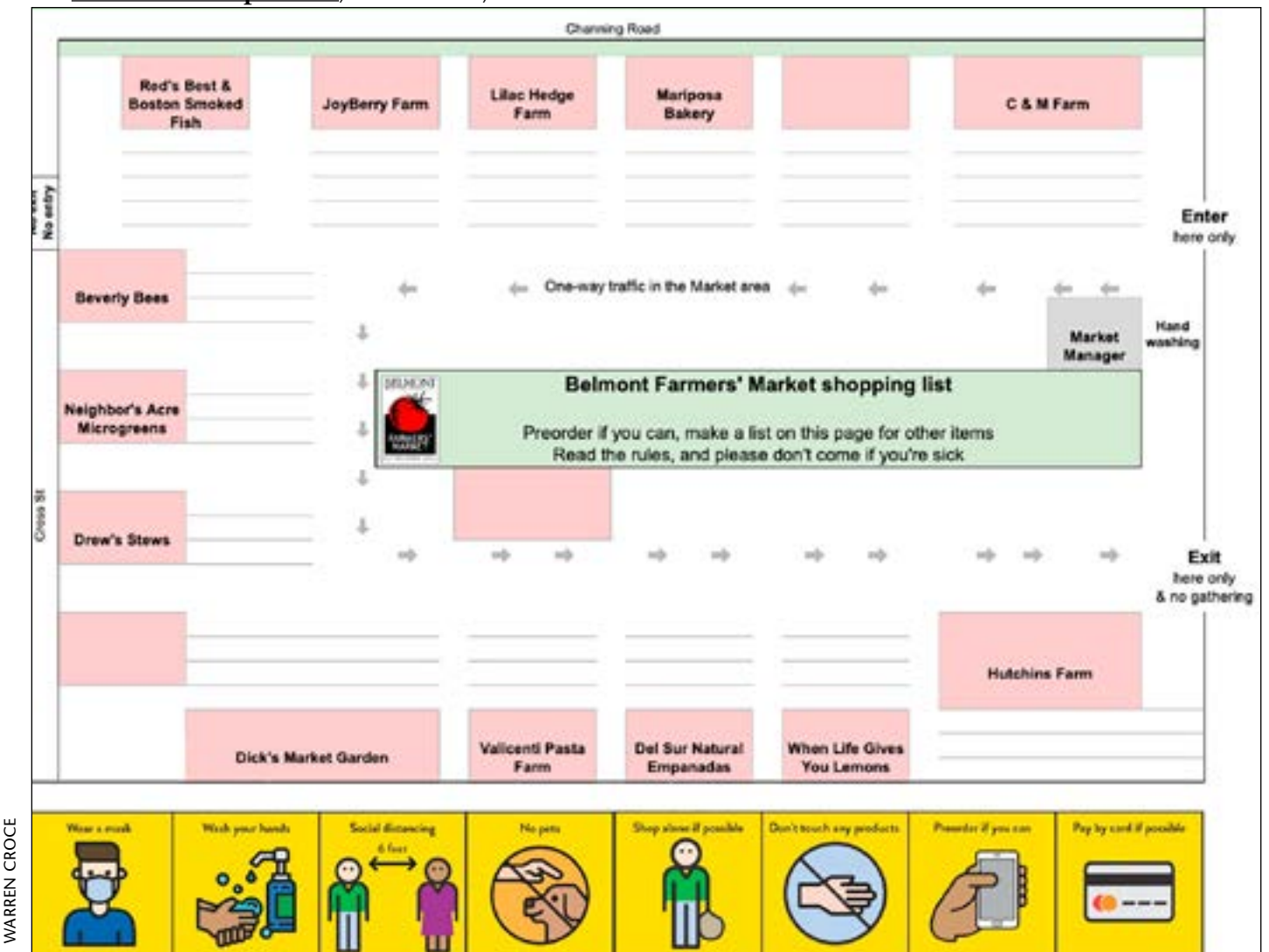
By Mary Bradley

The Belmont Farmers’ Market, located in the municipal lot behind Belmont Center, will be open from June 4 to October 29 this year. Market hours are Thursday afternoons from 2 to 6:30 PM. **The Belmont Food Collaborative** spent the months prior to the June 4 opening on zoom calls, in email discussions, and in webinars with other farmers’ market organizers and state officials. Their mission was to incorporate the **social distancing rules and regulations** mandated by the Massachusetts Department of Agriculture, the Massachusetts Department of Public Health, and Belmont’s Select Board and Board of Health into a model to ensure maximum safety for both patrons and vendors. The **new rules for patrons**, the market, and

vendors are on the **Belmont Farmers’ Market website**. The town can close the market if the rules are not followed.

The market is encouraging patrons to pre-order from their favorite vendors and pre-pay so that they can quickly and easily pick up their provisions on market day. For those who don’t want to go to the market, the recently formed Belmont Helps organization has stepped in to assist. Volunteers from Belmont Helps will pick up your provisions from market vendors and deliver them to you. Julie Wu of Belmont Helps asks that people contact belmonthelps@gmail.com with as much notice as possible.

Farmers’ Markets are a lynchpin in connecting local farms and vulnerable populations. Market committee chair Hal Shubin explains:



Map of the Belmont Farmers’ Market circulation for June 25, 2020.

“Farmers’ markets are on Governor Baker’s list of essential services. One reason for that is that markets are food sources, just as grocery stores are. But it’s more than that. Farmers’ markets provide assistance to people who are food insecure. Most farmers’ markets match SNAP benefits [food stamps]. At the Belmont Farmers’ Market, **we match up to \$20 for SNAP shoppers each week**. And most of our produce vendors participate in HIP [Healthy Incentives Program]. That’s a big part of our mission, and one of the reasons that farmers’ markets are important, especially as unemployment rises. SNAP shoppers can get between \$40 and \$80

Belmont

Roots

Environmental News, Notes, and Events

By Meg Muckenhoupt



This summer is an uncertain time. Although restrictions on movement and interpersonal contact are gradually lifting—Habitat reopened trails on June 8!—the risks

of attending group events are still too high for many readers. Once again, here is a list of ways to think about our environment, energy, and our world without putting yourself at risk.

Think you’ve seen everything around Belmont? I bet you haven’t. The Friends of Fresh Pond Reservation publish **lists of all the animals, birds, plants, algae, lichens, and fungi found at Fresh Pond**. Bulbochaete and spirogyra await algae fans! Dust off your hand lens, polish your binoculars, and go take a look.

If you’re too busy to get out, you can cut your travel time to nature by watching the Friends of the Middlesex Fells’ **“My Fells” one-minute challenge**, where Fells admirers post 1-minute videos and other art celebrating the Fells. The Friends of the Middlesex Fells are also posting slightly longer videos on **their Youtube channel every week**, including videos about **Jack in the pulpit**, **how to identify poison ivy**, and **vernal pools**.

per month of free produce, but only if they buy directly from a farmer. Supermarkets don’t offer SNAP matching, and HIP isn’t available there.

“As reported in many recent news stories, people have become more interested in local food during the pandemic. Farmers’ markets support those local businesses: farmers who raise and sell produce, meat and dairy; and people who make pasta, bread, prepared foods and more. And you can talk with the people who grow and make it!”

Mary Bradley is managing editor of the Belmont Citizens Forum Newsletter.

And how will you get around after the epidemic peaks? The Environmental League of Massachusetts has posted **a video on The Future of Public Transportation Post-COVID**, recorded on May 21 with Monica Tibbits-Nutt, who sits on the board of the Massachusetts Department of Transportation, is the vice chair of the MBTA’s Fiscal Management Control Board, and serves as the executive director of 128 Business Council. Addressing the inequities in public transit access and implementing programs like the Transportation and Climate Initiative are even more important now that the current public health crisis has exposed our vulnerabilities. She called on viewers to take this opportunity to rethink our commutes, transit routes, and the space we allocate for biking and walking throughout our cities and towns. As Tibbits-Nutt said, “This is an opportunity to allow humans to be central to the communities we’re living in.”

COVID-19 isn’t the only factor affecting our health. The Environmental League of Massachusetts has posted **an April 20 webinar titled Climate + Health**. Dr. Aaron Bernstein, interim director of the Center for Climate, Health, and the Global Environment at the Harvard T.H. Chan School of Public Health, discusses the interconnectedness of climate change and human health, parallels between the COVID-19 crisis and our climate risks, and how public policy can ameliorate or exacerbate these problems.

For an in-depth look at how climate change is affecting our health, check out Climate Exchange’s March 20 webinar, **Why Carbon**

Pricing is a Public Health Issue. New research shows that smart climate policy, particularly carbon pollution pricing, can have massive positive health impacts. Climate ExChange released a report in March that quantifies the public health benefits resulting from California’s cap-and-invest carbon pricing program, the Western Climate Initiative, which has been in place since 2012. This policy has created benefits that amount to five times the cost of the program. American Public Health Association’s Rachel McMonagle and Dr. Jonathan Buonocore discuss public health as it relates to the climate crisis and dive into the vast array of public health benefits that carbon pollution pricing can have on local communities.

Of course, human health depends on having a healthy planet. **Climate Resilience for Activists**, a video presentation from May 7, 2020, by the Charles River Watershed Association, talks about how to make our environment more resilient to climate change. Many of the most effective and inexpensive solutions to building climate resilience involve bringing nature back into our built environment. Nature-based solutions include



restoring urban tree canopy, restoring wetlands, and daylighting buried streams. “Green infrastructure” solutions include bioswales, rain gardens, and permeable pavers that absorb water, thereby reducing stormwater runoff and flooding and recharging aquifers. These options offer protection and the benefits of cleaner air, cleaner water, and the psychological uplift of living in and around green space.

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