

Brookline Bicycle Advisory Committee (BAC)

Meeting Minutes for Wednesday, September 4, 2019, Town Hall 408, 7 PM

Members present: John Bowman, Elena Huisman, Jacob Meunier, Kristin Schreiber Cynthia Snow, Len Wholey, Brian Sutherland (police liaison)

Members absent: Mark Lowenstein

Others present: Jules Milner-Brage, Daniel Martelly, David Kroop, Mitch Heineman

Minutes: August 2019 meeting minutes were approved as circulated.

Updates:

- **Police Report:** Sgt Sutherland reported six bike accidents in August, five involving motor vehicles, one a cyclist alone; three of the cyclists were transported to the hospital. A Police Department tweet reminded motorists not to park in bike lanes and said the police would be ticketing violators.
- **Livable Streets:** The Tour de Streets will be held on Saturday, September 7 in the South Boston area, followed by a bar-b-que.
- **Safe Routes to School:** Sharon Abramowitz is the new School Committee liaison to SRTS. An educational cycling program for children was held at the Coolidge Corner Library on August 23rd. Dr. Schreiber noted that the best way for cyclists to travel between the High School and Old Lincoln is to park at Emerson Park and walk across the footbridge and crosswalk. October 2 is Walk and Bike to School Day.
- **Sustainability Transportation Working Team:** The group met almost weekly throughout the summer to prepare and submit a warrant article to the fall Town Meeting, "Resolution to Respond to Climate Change by Prioritizing Health, Access and Equity on Brookline's Public Ways." Mr. Bowman summarized several of the key points relevant to cycling. (Copy attached to these minutes.) Anyone interested in seeing this passed can attend hearings by the Advisory Committee, the Select Board and others.

Bicycle Education Brochure: A final draft of the bicycling brochure was circulated; it has been approved by the Town. Mr. Martelly will be contacting the Chamber of Commerce for support and arranging for printing.

Green Routes Plan: At this point, the focus is on major changes/additions to the plan, such as identifying high traffic volume streets that need protected bike lanes. Any comments or suggestions should be sent to Ms. Snow. Ms. Huisman will prepare a survey to ask committee members for help with specific items that need to be researched/written for the plan. Among the suggestions made during the discussion:

- Put the plan on Google Docs for final review.
- Highlight streets/areas where pilot/trial projects might be most useful.
- Develop new map(s) to show existing bicycle accommodations (not yet a network) as well as identifying streets with various traffic levels warranting various levels of bicycle accommodations.
- Include accommodations on Open Streets (a collaborative map similar to Wikipedia).

Annual Brookline Bike Counts: The counts will be conducted during the week of September 16th (with the following week as back up in the event of bad weather). An initial request for help has been sent and generated several volunteers; 3-5 more are needed. Information will be sent to counting volunteers the week before the counts.

Brookline High School Transportation Plan: The preliminary plan was distributed, along with written comments by Mr. Lowenstein, Mr. Bowman and Ms. Huisman. Comments on the plan or the written responses should be sent to Mr. Bowman by Sunday evening, September 8th. He will draft a statement to

the Transportation Board, with review by Mr. Meunier and Dr. Schreiber. During the discussion of the proposal, the following points were made:

- Adequate bicycle parking should be provided, along with safe access for students and others.
- Cycle tracks or two-way bike lanes along Cypress Field would be desirable
 - moving parking on Davis from the park side to the residence side of the street
 - providing for bike contraflow on Greenough
- Back-in angled parking is safer for everyone than front-in parking and should be considered.
- A careful analysis of bicycle access and parking for BHS students and staff and MBTA users should be completed. (It was suggested that a by-law that would make such studies mandatory in the consultant procurement process would be the best way to insure such studies in the future.)
- Raised crosswalks on Tappan Street could help slow traffic.

- The bicycle approach to Cypress St. is poorly designed and would be difficult for cyclists to navigate.
- Safer bicycle accommodations on Cypress in both directions are needed.
- Contraflow lane on Tappan for the approach from the east would be helpful.

Follow-Up:

- Mr. Bowman distributed the open items list and called attention to those that are in process, have been completed and are proposed for CIP 2021 funding.
- Mr. Milner-Brage reported that Mr. Kirrane is receptive to a Beacon Bridleway event in the fall, from Tappan St. to Englewood. He will work with other volunteers to determine whether another more streamlined event might be planned given the short time available before October.

Adjournment: 9:02 PM

RESOLUTION TO RESPOND TO CLIMATE CHANGE BY PRIORITIZING
HEALTH, ACCESS AND EQUITY ON BROOKLINE'S PUBLIC WAYS

ARTICLE 31

XXTH ARTICLE

Submitted by: Jules Milner-Brage*, TMM Pct. 12; Susan Helms Daley*; Scott Englander*, TMM Pct. 6; Heather Hamilton, Select Board Member; Blake Cady; C. Scott Ananian, TMM Pct. 10; Eileen Berger, TMM Pct. 15; John Bowman; John Harris, TMM Pct. 8; Linda Olson Pehlke, TMM Pct. 2; Willy Osborn.

**Co-petitioners' point-of-contact.*

To see if the Town will adopt the following resolution:

WHEREAS climate change is a major existential threat to humanity and other life on our planet, with impacts felt especially by the poor and powerless;

WHEREAS greenhouse gas emissions are causing climate change, and transportation contributes 43% of these emissions in Massachusetts;

WHEREAS there are many negative health impacts from automobile use, such as serious injuries, air pollution and physical inactivity;

WHEREAS low-occupancy travel via automobile and parking of private automobiles require a disproportionate quantity of space relative to the quantity of people and goods moved;

WHEREAS Brookline public ways currently provide only limited accessibility to non-automobile uses;

WHEREAS traffic congestion and a lack of safe, accessible, reliable alternatives to automobile transportation impose substantial time burdens and costs on individuals;

WHEREAS the Town of Brookline has adopted a Climate Action Plan to prioritize planning to achieve zero greenhouse gas emissions by 2050, Town- and community-wide;

WHEREAS the Town of Brookline has adopted a Complete Streets Policy that seeks to shift use to more healthful and sustainable transportation modes by accommodating them equitably in public ways;

WHEREAS replacement of internal combustion-powered transportation with human- and/or electric-powered transportation (and supporting electric charging infrastructure) stands to reduce greenhouse gas emissions, especially when supplied with energy produced via non-fossil-fuel-combustion means; and

WHEREAS Brookline historically developed with a pattern of land use and public ways that are amenable to the use of public transit, walking, biking and other space- and energy-efficient modes of transportation and has limited space for personal vehicle use and parking.

NOW, THEREFORE, BE IT RESOLVED that Town Meeting calls upon the Town of Brookline to *leverage its preexisting strengths*, to:

- 1) **Prioritize** safe, space-efficient, and energy-efficient movement of people and goods over the movement and parking of private vehicles when designing and improving our public ways, with particular focus on high-traffic routes, connectivity and directness. This should be accomplished in a manner that gives particular consideration to equity of access and safety for (i) people of a broad range of ages, abilities and financial means, and (ii) use of healthful and sustainable transportation modes.
- 2) **Demonstrate, pilot, and evaluate** new public way configurations that improve travel conditions to enable everyone to use healthful and sustainable transportation modes. Reconfigure street usage for temporary events (such as “open streets” and “Park(ing) Day”) to demonstrate the community benefits of utilizing road space for people.
- 3) **Align** our planning and zoning regulations with our historical streetcar-, biking-, and walking-centric (less automobile-dependent) development pattern. Implement “transportation demand management” policies to realign incentives towards utilization of healthful and sustainable transportation modes.
- 4) **Encourage transition** of motorized travel to electric vehicles and operating behaviors that eliminate local greenhouse gas emissions, including support for increased electric vehicle charging. This should be accomplished with particular consideration for avoiding any conflicts or interference with healthful and sustainable transportation modes, or with improved travel facilities for these modes.

AND BE IT FURTHER RESOLVED that Town Meeting calls upon the Select Board, in consultation with the Advisory Committee and any other appropriate Boards, Commissions and Committees, to determine a course of action, applying the aforementioned four strategies, to:

- 5) Work towards a 2050 goal of a “75/25” sustainable transportation mode split, where approximately:
 - 75% of trips are by human power (e.g. foot, bike, wheelchair), electric micro-mobility (e.g. e-scooters, e-bikes, e-wheelchairs), or electric shared rides (e.g. electric public transit, electric car-pools), and
 - 25% of trips are by single-occupant or single-passenger electric cars or trucks;

Work towards a 2030 “30 + 30” interim goal, where approximately:

- 30% of the progress needed to meet our 2050 mode split goal is achieved, and
- 30% of motor vehicles registered in Brookline are electric;

For the 2050 goal, ‘electric’ excludes vehicles that can use internal combustion engines, but for the 2030 goal ‘electric’ includes plug-in hybrids.

- 6) Develop and implement a strategic infrastructure network to realize these goals (e.g. safe routes to schools; inclusive, protected bike lanes for a diversity of users; electric vehicle charging facilities);
- 7) Measure and report progress towards these goals; and

- 8) Establish a Sustainable Transportation Engineer or Planner position to support the advancement of these goals.

AND BE IT FURTHER RESOLVED that Town Meeting calls upon the Select Board, et al., to report the details of this course of action no later than the 2020 Annual (May) Town Meeting.

Or act on anything relative thereto.

PETITIONER'S ARTICLE DESCRIPTION

Warrant Article contributors: Jules Milner-Brage*, TMM Pct. 12; Susan Helms Daley*; Scott Englander*, TMM Pct. 6; Heather Hamilton, Select Board Member; Anne Lusk; Blake Cady; C. Scott Ananian, TMM Pct. 10; David Kroop; David Trevvett; Eileen Berger, TMM Pct. 15; Jan Preheim; John Bowman; John Harris, TMM Pct. 8; Linda Olson Pehlke, TMM Pct. 2; Willy Osborn.

**Co-petitioners' point-of-contact.*

*“What we have is no longer a technological or economic problem,
but a status quo bias problem.”*

- Speaker at Asilomar Conference on Energy and Transportation (Dutzik, 2019)

Introduction

The goal of this Warrant Article is both to raise awareness in our Town regarding the immediacy of the climate problem and the outsized role that transportation plays in it, as well as to set forth specific suggestions we can follow to reduce our reliance on gas-powered vehicles by (1) providing appealing alternatives to individual car trips and (2) electrifying the remaining car trips.

Transportation emissions constitute not only the greatest component of Massachusetts' greenhouse gas footprint, but also the fastest growing (Commission, 2018). The vast majority of these emissions—and associated toxic pollutants—are from automobiles. At the same time, this year, the Greater Boston Area recently earned the dubious distinction of having the worst gridlock in the country (*Boston Globe*, 2019). Furthermore, the population of Massachusetts is projected to increase by another 600,000 people, predominantly in the eastern part of the state, by 2040 (Commission, 2018).

We believe this Warrant Article is timely in addressing these critical issues, and also in keeping with other states and municipalities demonstrating climate leadership at this critical time, a partial list of which appears in Table 1:

Table 1. Sample of Carbon Emissions Reduction Targets in US

Boston Green Ribbon Commission	Aims to make City of Boston carbon-free by 2050
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Massachusetts Global Warming Solutions Act	Mandate to reduce greenhouse gas emissions to 80% of 1990 levels by 2050
Connecticut	Mandate to reduce greenhouse gas emissions to 45% below 2001 levels by 2030
California	Goal to reduce the state's greenhouse gas emissions to 1990 levels by 2020 and to 80 percent below 1990 levels by 2050
Hawaii	Commitment to becoming carbon neutral by 2045
US Climate Alliance (includes 25 states and growing)	Implement policies that advance the goals of the Paris Agreement, aiming to reduce greenhouse gas emissions by at least 26-28% below 2005 levels by 2025

There was wide consensus among the authors that Brookline historically was designed around public transit and walkable neighborhoods, and that those historical roots are in large part what makes the town so appealing *and* what gives us ample opportunities to reduce our greenhouse gas emissions from transportation. By the early 20th century, Brookline had electrified trolley lines on Beacon St., Harvard St., Washington St., Boylston St. / Huntington Ave., Commonwealth Ave., and more, plus multi-modal path systems with distinct bridledways for riding (then on horseback) on Beacon St., the Riverway, the Fenway, and western Commonwealth Ave. This kind of reasonably compact development pattern – these good urban “bones” – stand to become the envy of cities and towns around the country trying to decarbonize. We have it already! We need to recognize this inheritance for the gift that it is and decide to better reveal and reinvest in it.

Trends in Travel Modes and Vehicle Ownership

A look at current and recent trends in Brookline’s journey-to-work and vehicle ownership data shows promising movement towards more active transportation and lower vehicle ownership rates. While these trends reveal somewhat modest change, they do speak to the potential that, with continued efforts, the Town could sufficiently reduce greenhouse gas emissions and achieve the ambitious target reductions proposed in this Warrant Article through the adoption of healthier, more sustainable personal travel choices. During this time frame, the Town has begun to add bicycling infrastructure and has started to focus on improving travel conditions for pedestrians and public transportation riders.

As Table 2 below illustrates, Brookline’s workers, between 2000 and 2017 are walking, biking and taking public transportation to work more and driving single-occupancy vehicles less. The percentage of SOV work trips has declined from 45.3% in 2000 to 35.3% in 2017. Additionally, over the same time period, the number of households that do not own a car has grown from 20% to 26% town-wide. The percentage of car free households is much higher for particular geographies and sub-populations; for instance an estimated 60% of renter households in Census Tract 4002 (Coolidge Corner) do not own a vehicle, as reported in the 2012-2017 American Community Survey.

Table 2. Means of Transportation for work trips by Brookline workers 2000 – 2017*

	2017	%		2010	%		2000	%
Total Workers	32,410			31,878			32,173	
Single-Occupancy Vehicle	11,441	35.3%		12,858	40.3%		14,571	45.3%
Carpool	1,483	4.6%		1,841	5.8%		2,310	7.2%
Public Transportation	9,942	30.7%		9,307	29.2%		9,242	28.7%
Walked	5,284	16.3%		4,290	13.5%		3,073	9.6%
Other (incl. biking)	2,077	6.4%		1,418	4.4%		770	2.4%
Worked at Home	2,183	6.7%		2,164	6.8%		2,207	6.9%

*Source: DPO3-Selected Economic Characteristics: Census Bureau and American Community Survey

Demonstration and Pilot Programs

Given that so much of the existing development in Brookline is at a walkable and bikeable scale around those old trolley routes (and boulevards with bridle paths) and given that we have sizable existing populations taking trains and busses, riding bikes, and walking for transportation, we could relatively inexpensively demonstrate and pilot installation of substantial public way improvements to the safety and quality of service for these naturally space- and energy-efficient travel modes as a means of finding the best practices for Brookline. We have recently begun to try this approach to exploring change and some of our counterparts in neighboring cities and towns have successfully taken it even further, as shown in Table 3. When combined with robust gathering of community feedback and (as needed) iterative design, these agile, limited programs have a reasonable chance of building support for more comprehensive planning of more systematic and durable change in the future.

Table 3. Some Recent Transportation Pilot Programs in Greater Boston

Back Bay	Massachusetts Ave. protected bike lane; Beacon St. protected bike lane
Cambridge	Cambridge St. protected bike lane; Massachusetts Ave. protected bike and distinct dedicated bus lane; Mt. Auburn St. dedicated bus/bike lane. (Also, The Cycling Safety Ordinance requires streets undergoing significant roadwork to include protected bike lanes in their design if they are part of the city's priority bicycle route network.)

Brookline	<ol style="list-style-type: none"> 1. Beacon Street Buffered Bike Lane 2. Greenline TSP on the C-line at Carlton Street 3. Electric Scooter Pilot Program
Concord and Cambridge	Electric school busses to transport students (demonstration of viability)
Everett	Broadway dedicated bus/bike lane
Roslindale	Washington St. dedicated bus/bike lane
Arlington	Massachusetts Ave. dedicated bus/bike lane
Allston	Brighton Ave. dedicated bus/bike lane

Economic, Health and Social Equity Benefits

“MassDOT, municipalities, and other roadway owners should redesign them to prioritize person-throughput rather than vehicle-throughput, so that limited corridor capacity is allocated to moving as many people as possible, while accommodating mobility alternatives.”

- Massachusetts Governor’s Commission on the Future of Transportation in the Commonwealth (2018)

This greater people-moving efficiency referenced by the Governor’s Commission stands to provide profound benefits beyond the reduction of greenhouse gas emissions, especially when leveraged to provide “complete” (and perhaps efficient-mode “priority”) travel facilities on streets, including:

- Increased accessibility for people of varied ages and abilities
- Increased individual affordability through reduced need for personal ownership of expensive vehicles
- Increased local retail and service business and sales tax revenue to local communities through increased access to commercial districts via travel modes where it is easier to stop and where people are more likely to frequent multiple establishments (foot, wheelchair, cycle and similar)¹
- Increased capacity for people to work in town, which stands to provide customers to local businesses at a broader array of times of day and stands to increase commercial real-estate tax revenue to the Town (a higher rate than residential tax, and a type which we have rather little of currently, especially compared to peer communities)

¹ “Economic benefits of walking and cycling: Reports, studies and evidence to present the economic benefits of investment in walking and cycling” collected by Transport for London (November 2018): <<https://tfl.gov.uk/corporate/publications-and-reports/economic-benefits-of-walking-and-cycling>>. Also: “Economic Impact Study of Bike Lanes in Toronto’s Bloor Annex and Korea Town Neighbourhoods” by the Toronto Centre for Active Transportation (October 2017): <<https://www.tcat.ca/resources/bloor-street-economic-impact-studies/>>.

- Increased social equity, as public transportation, walking, and bicycling disproportionately serve the poor and minorities
- Reduced costs associated with policing, ambulances, hospitals, and time wasted in traffic
- Less money spent by residents on health care associated with diabetes, coronary disease, hypertension, and other diseases
- Reduced traffic injuries and fatalities, which diminish with greater walkability, and disproportionately affect the poor, elderly, and non-white pedestrians²
- Reduced premature deaths due to air pollution, the leading cause of which is vehicle emissions³

Electric Vehicles

In the hierarchy of sustainable transportation alternatives, the highest priority is to reduce the number of individual car trips taken. But for those car trips that still must be taken, the priority is to enable and encourage those trips to be taken in electric vehicles (EVs).

The automobile market in the US is on the threshold of a major shift away from internal combustion engine (ICE) vehicles to electric vehicles (EV – includes battery electric vehicle, fuel cell electric vehicle and plug-in hybrid electric vehicle). The world's largest carmakers now sell over 40 EV models, many with long electric-only range (>200 miles) and fast-charge capability, and they plan to double these offerings over the next 5 years. The fastest growing segment is the battery electric vehicle. Industry experts anticipate rapid increases in market share for EVs over the next 10-20 years. For example, Bloomberg New Energy Finance forecasts that by 2040 over 50% of new global passenger vehicle sales will be EVs. A major challenge for the rapid growth of EVs and the climate benefits they bring is the lack of charging infrastructure. Most communities committed to EVs are now focused on the accelerated installation of chargers in order to relieve the EV user of range anxiety and encourage accelerated vehicle turn over.

As part of their plans to reduce transportation emissions, many states have set targets for EVs in next two decades to help spur policies to accelerate EV adoption. The targets include both percentage of new car sales and share of overall registrations. The nine states that have adopted California's Zero Emission Vehicle (ZEV) program and EV sales mandate have all set mid-term targets for EV sales in their states (included in the ZEV program are Massachusetts, Connecticut, New York and New Jersey) based on the requirement under the program that 15% of sales in 2025 must be ZEV sales. In addition, many states have established targets for overall registration of EVs. The targets typically start relatively low – reflecting current low penetration rates – but then quickly climb to large numbers. California wants to see 5 million EVs on the road and 250,000 EV charging stations installed by 2030. New York is planning to achieve targets of 850,000 EVs in 2025 and 2 million in 2030. Massachusetts has a goal of 300,000 EV registrations by 2025.

² Speck, Jeff, 2018, Walkable City Rules. Washington, DC: Island Press. Part I.

³ Fabio Caiazzo, et. al., "Air Pollution and Early Deaths in the United States. Part 1: Quantifying the Impact of Major Sectors in 2005," (MIT 2013).

Here is a snapshot of EV targets for several states in the ZEV Mandate group:

Near-Term State EV Targets (CA ZEV Mandate NE states)

	Current Vehicle Registrations (000's)	Current EV Registrations (000's)	Current EV %	New Car Yearly Sales (000's)	2025 15% mandate Vehicle sales Target (000's)	State Target EV Registrations ('000s) Target	Date
California	31,500	480	1.5	2,000	300	5,000	2030
New York	11,700	41	0.35	1,000	150	850 2,000	2025 2030
New Jersey	7,200	23	0.32	580	87	330	2025
Mass	5,400	21	0.39	360	54	300	2025
Conn	3,200	9.8	0.33	170	26		

For Brookline, we are proposing a 2030 registration target of 30% EVs, equivalent to approximately 6,400 vehicles (extrapolating from statewide vehicle registration forecasts). This target requires higher growth in Brookline's EV share of registrations than is projected for Massachusetts as a whole, and is expected to be met in part through a rapid acceleration in EV sales in Brookline, as projected in the table below.

Near-Term Brookline EV Registration Target (2030) with EV Forecast Model Results

	2020	2025	2030
Total EV Registrations			30%

EV Forecast Model Results

Total vehicle Registrations	30,000	29,159	21,400
EV Registrations	780	2,563	6,360
EV % of total	1.2%	8.8%	29.7%
Annual vehicle sales	3,042	2,890	2,745
EV Annual Sales	230	463	1,014
EV % of Annual Sales	2.4%	16.0%	36.9%

Assumptions

1. Total vehicle registrations decline due to multi-modal shift from cars: 6% per year starting in 2023
2. 2020 EV registrations from Brookline population % of state adjusted upwards by local estimates
3. New car sales based on Brookline population % of state (might be higher due to faster turnover)
4. New car sales drop 5% over first 5 years and again in second 5 year period to reflect multi-modal shift
5. EV sales growth escalated at 15% per year in years 1-5 (exceeding our proportional share of the state's 15% sales goal 2025) and 18% per year in years 6-10

We believe the higher EV registration target number is achievable in Brookline for several reasons:

- 1) There are another 5 years in the target period (2025-2030) which can be used to accelerate the market.
- 2) The Town has a long history of leadership in climate advocacy and can continue this path by stepping up to promote higher numbers of EVs.
- 3) The EV market and technology are rapidly improving and yesterday's targets are becoming less relevant as rapid market acceleration appears realistic. Some governments – like California and Norway (a cold country where over 50% of new car sales are now EVs) – are increasing their targets and seeing success with policies designed to stimulate the market.
- 4) Brookline is a highly educated community and its citizens are well-informed about global warming and solutions. They also likely to turn over their vehicles at a faster rate than in other places (the average age of vehicles in Massachusetts is 9.8 years vs. 11.6 years for the nation as a whole). In addition, 27% of households have more than one car and relatively short commutes. All of this stands to support high rates of adoption of EVs and shift of some trips to car-alternative transportation options.
- 5) An ambitious target will galvanize the community and advocates into developing and supporting innovative pilots and demonstrations for EVs and chargers that will contribute to faster adoption. It will also tend to attract the attention of grant makers and other financial supporters outside the community that might be interested in underwriting projects that fast-track EV adoption.

One final note, in addition to encouraging the transition to EVs, we also reference “operating behaviors.” The term refers primarily to idling (which should be avoided) and to timely, regular charging of plug-in hybrids (necessary to maximize operation in electric-only mode).

Sources

“The Etymology of Parking” in “Arnoldia” (the quarterly magazine of the Arnold Arboretum) by Michele Richmond (October 2015): <<http://arnoldia.arboretum.harvard.edu/pdf/articles/2015-73-2-the-etymology-of-parking.pdf>>.

“Designing to Move People” in the “Transit Street Design Guide” by National Association of City Transportation Officials (April 2016): <<https://nacto.org/publication/transit-street-design-guide/introduction/why/designing-move-people/>>.

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“The Worst Gridlock in the US is Right Here in Boston” by Adam Vaccaro (Boston Globe), (February 12, 2019): <<https://www.bostonglobe.com/metro/2019/02/12/bragging-rights-boston-now-has-worst-rush-hour-traffic-country-report-says/wMNdRAIrEV7svwShY80NaJ/story.html>>.