



ABAC

To: Jack Hurd, Mass Ave Design Advisory Committee Chair
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From: Phil Goff, East Arlington Livable Streets Coalition (EALS)
Christopher Tonkin, Arlington Bicycle Advisory Committee (ABAC)
David Watson, Massachusetts Bicycle Coalition (MassBike)

Re: Bicycle Accommodation Recommendations for Mass Ave Project

Date: June 10, 2010

CC: Mass Ave Design Review Committee, Laura Wiener (Town Planner), Arlington Board of Selectmen (via Marie Krepelka), Brian Sullivan (Town Manager), Luisa Paiewonsky (MassDOT Highway Dept. Manager), Patricia Leavenworth (Director, MassDOT Dist. 4)

In recent media reports, those opposed to the current Mass Ave Corridor design have stated that the current plan's inclusion of bike lanes is not necessary, not warranted, not desired by cyclists and will lead to safety problems for cyclists and motorists alike. We are writing collectively to assure you and key decision makers on this project that East Arlington Livable Streets (EALS), the Arlington Bike Advisory Committee (ABAC) and the Massachusetts Bicycle Coalition (MassBike) stand united in our desire to see designated bike lanes on Mass Ave. Doing so would:

- Be consistent with federal and state policy
- Lead to increased ridership and safety
- Offer strong connections to other bike facilities
- Be popular with both individual cyclists and advocacy organizations
- Provide a far more comfortable and safe facility than a shared lane

Federal Policy

We no longer live in the age where the U.S. DOT's primary purpose is to fund highway expansion projects. Federal policy now promotes a multi-modal approach with more funding for multi-use paths and "complete" streets projects. In March of this year, U.S. DOT Secretary Ray LaHood signed the agency's Policy Statement that was written to "reflect the Department's support for the development of fully integrated active transportation networks" and that "transportation agencies should provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities".

The Policy Statement's first recommended action is to: "Considering walking and bicycling as equals with other transportation modes: the primary goal of a transportation system is to safely and efficiently move people and goods. Because of the benefits they provide, transportation agencies should give the same priority to walking and bicycling as is given to other transportation modes. Walking and bicycling should not be an afterthought in roadway design." (<http://www.dot.gov/affairs/2010/bicycle-ped.html>)

State Policy

State law clearly requires the accommodation of cyclists and pedestrians. Mass General Law Chapter 90E Section 2A states: “*The (transportation) commissioner shall make all reasonable provisions for the accommodation of bicycle and pedestrian traffic in the planning, design, and construction, reconstruction or maintenance of any project undertaken by the department.*” Some project opponents have argued that the existence of the Minuteman Bikeway provides this accommodation. While the Town has seen enormous benefits due to the success of the Minuteman Bikeway, this does not preclude the responsibility to provide on-road bicycling accommodations as clearly stated in the MassDOT’s Highway Design Guide (HDG) Chapter 5.3.2.4: “*The presence of a shared use path near a roadway does not eliminate the need to accommodate bicyclists within a roadway.*”

Again, from HDG, Chapter 5: “*Bicycle lanes should be incorporated into a roadway when it is desirable to delineate available road space for preferential use by bicyclists and motorists, and to provide for more predictable movements by each. Bicycle lane markings can increase a bicyclist’s confidence in motorists not straying into their path of travel. Likewise, passing motorists are less likely to swerve to the left out of their lane to avoid bicyclists on their right. **Bicycle lanes are generally considered the preferred treatment for bicycle accommodation** (emphasis ours). Five foot bicycle lanes are preferred for most conditions, especially when the lane is adjacent to curbside parking, curb or guardrail.*”

Finally, MassDOT’s newly-released “GreenDOT” Policy (June 2, 2010) clearly emphasizes the importance of bicycle transportation in creating a more sustainable transportation system. The Policy reiterates that “*all MassDOT projects must include accommodation of pedestrians and bicycles per the MassDOT Highway Division Project Development and Design Guide,*” and notes that Transportation improvement Program (TIP) project selection practices “*must balance highway expansion projects with others that support smart growth development and promote public transit, bicycling, and walking.*”

Other States’ and Cities’ Policies

MassDOT’s strong encouragement of separate bike lanes on state highway projects such as the Mass Ave Corridor is echoed by federal guidelines as well as from numerous states and cities as shown in Table 1 below. Federal Highway Administration (FHWA) guidelines recommend striped bike lanes as the preferred accommodation for bikes on all roadways posted for 25 mph or more. On roadways where cyclists are intended to be accommodated in New Jersey, bike lanes are recommended on all roadways that carry more than 10,000 vehicles per day. In Oregon, the bike lane threshold is for all roadways with more than 3000 vehicles per day and signed for 30 mph or more; in Wisconsin, the threshold is 2000 vehicles per day and signed for 25 mph or more. In the City of Cambridge, bike lanes are striped on reconstructed roadways carrying at least 3000 vehicles per day at 25 mph or more; in Portland, Oregon, the threshold is 3000 vehicles per day on roads with any speed limit. By contrast, Mass Ave in East Arlington carries between 14,000 – 17,000 vehicles trips per day and is signed for a 30 mph speed limit. Based on the criteria of the U.S. DOT and numerous bike-friendly states and cities (many of which are not listed here), it goes without saying that bike lanes are the appropriate facility for Mass Ave in East Arlington.

Table 1: Minimum thresholds for recommended bike lanes by location

Agency/State/City	Min. daily traffic volume	Min. signed speed limit
U.S. Dept. of Transportation	None	25 mph
New Jersey	10,000	none
Oregon	3,000	30 mph
Wisconsin	2,000	25 mph
Cambridge, MA	3,000	25 mph

Portland, OR	3,000	none
Local Conditions		
Mass Ave, East Arlington	14,000 – 17,000 (depending on count location)	30 mph

Source: Bike Facility Selection: Comparison of Approaches, published by University of North Carolina Pedestrian and Bicycle Research Center

Bike Ridership and Safety

Cities throughout the country that have striped bike lanes and built bike paths have seen tremendous increases in bicycle ridership along with decreased crash rates. This reinforces the theory that the best enhancement for bike safety is to encourage more bicycles on the road. In New York City, bike ridership has doubled since 2006 as the bike-network mileage has increased by 50%. Even with this increase, the number of crashes has remained steady. In Portland, Oregon, ridership has quadrupled in 15 years as the city has developed a 300-mile network of bike lanes, bike paths and “bike boulevards”. Total crashes have remained steady in Portland, a 75% reduction of the overall crash rate. Similar trends can be found in cities and towns throughout the United States and Canada. Locally, bike ridership in Cambridge doubled from 2002-2008 with its crash rate holding steady. In Boston—where Mayor Menino has recently stated that “the car is no longer king in Boston”—ridership has increased nearly 50% in the three years since the City began striping over 15 miles of bike lanes and initiated other bike education and encouragement programs. To our knowledge, there is not a single municipality in the U.S. that has seen its bike program “backfire”, i.e. where new bike lanes and paths decreased ridership, lead to more car-bike crashes or both.

There are numerous other safety benefits of striped bike lanes. Studies have shown that bike lanes:

- Reduce the swerving and crossing of the double yellow line by motorists passing cyclists
- Reduce the number of cyclists riding the wrong way and lead to far more predictable behavior
- Reduce the number of cyclists riding on sidewalks
- Increase the distance cyclists ride from parked cars (reducing the potential of being hit by a car door as it swings open)

Bike lanes on Mass Ave will also offer other non-safety benefits as well. They will provide additional space on the road for buses to pull over to avoid blocking a lane of traffic and will make it easier for motorists to parallel park.

Connectivity

Bike lanes on Mass Ave in East Arlington will offer cyclists connectivity enhancements to existing and future bike facilities in Arlington Center and Cambridge. West bound, bike lanes will carry cyclists from Cambridge and East Arlington directly to Arlington Center and the gateway to the Minuteman Bikeway. While there are currently no on-street bike facilities in the Center, Phase II of the larger Mass Ave Corridor planning process includes Arlington Center and some level of bicycle enhancements, including bike lanes, will likely be considered during this planning effort. East bound, the bike lanes will facilitate bicycle connectivity to Davis, Porter and Harvard Squares as well as parts of Cambridge that are far more difficult to reach via the Minuteman Bikeway and riding through the Alewife area. While Mass Ave in North Cambridge currently contains no bike lanes, it is quite likely that when the roadway is rehabbed in the next ten years, bike lanes will be included in the design. Beyond North Cambridge, bike lanes are currently striped along Mass Ave from Harvard Square to the Boston side of the Mass Ave bridge over the Charles River. In early May, the City of Boston and MassDOT announced its intention to stripe new bike lanes on Mass Ave in 2012. With new bike lanes in East Arlington, it is conceivable that in the next ten years, one may be able to ride from Arlington Center to the New England Medical Center in Boston’s South End entirely in a bike lane.

Support for Bike Lanes

Bicycle and sustainable-transportation advocacy organizations throughout the region and the U.S. are unwavering in their preference for separate bicycle facilities such as on-street bike lanes and off-street paths over shared roadways (except on local streets where traffic volumes and speeds are low). The same can be said for transportation planning and engineering professionals. One is hard-pressed to find a single non-profit or professional organization committed to transportation and mobility that does not recommend bike lanes on collector and arterial streets that are used by bicyclists. In lieu of multi-use paths which are typically very difficult to retrofit into existing urban contexts, a large percentage of cyclists prefer bike lanes over shared vehicle lanes. All three of our organizations have found that well-designed bike lanes are very popular with the vast majority of our members and supporters. On that note, however, it should be recognized that a fraction of cyclists support teaching all bicyclists to ride in traffic **rather** than building separate bike facilities. While our organizations strongly support education for both bicyclists and motorists, in conjunction with infrastructure improvements, the “education-only” approach ignores two key realities: (1) it is not possible to reach all or most bicyclists and potential bicyclists with an educational program; and (2) many people simply will not ride in traffic without some separation from motor vehicles. The “education-only” approach has little credibility with policy makers, planners, engineers and advocacy organizations, all of whom have seen the success of expansive bike networks in dozens of cities and towns throughout the country.

When studying different applications for bike-facility treatments along Hampshire Street in Cambridge, the City surveyed cyclists about which treatment they preferred: bike lanes, unmarked shoulder striping or a shared lane. Preference for striped bike lanes received 82% of the support. Additionally, motorists were surveyed before and after bike lanes were installed and were asked, “What made you aware of cyclists?” Prior to striping the bike lanes, 80% responded “nothing” while after the installation of bike lanes, 40% of motorists responded that they were aware of cyclist specifically because of the bike lanes. (*Transportation Research Record, Journal of the Transportation Research Board, No. 1939, 'Bicycles and Pedestrians', 2005*) Additionally, the Boston Bikes program conducted visual preference surveys of different bike facilities in preparation for the development of the city's bike master plan in 2009. The overwhelming majority of public-meeting attendees preferred bike lanes over shared lanes and since then, the city has been aggressively adding bike lanes on numerous two and four lane streets throughout Boston.

Shared Lanes as an Alternative?

Instead of bike lanes, those who prefer a four-lane plan for Mass Ave have advocated for the accommodation of cyclists on shared travel lanes throughout the one-mile corridor. Shared Lane Markings (SLM's or “sharrows”) are typically incorporated with “share the road” signs and give a visible



Photographic comparison showing potential bike lanes along Mass Ave in East Arlington (left) vs. 14' shared lanes along Mass Ave near Porter Square in Cambridge (right) where roadway width is constrained

sign that the lane is used by both cyclists and motorists alike. Sharrows can be a modest improvement over nothing when traffic speeds and volumes are relatively low or if curb-to-curb width is constrained. On Mass Ave, curb-to-curb space is not constrained and traffic speeds and volumes are quite high relative to other roadways in Arlington, with the exception of Rt. 2. According to HDG Chapter 5.3.2.3, travel lanes with sharrows should be constructed at a **minimum** of 14 feet to facilitate cars passing bicyclists without changing lanes. As Mass Ave narrows to 60' west of Linwood, the lane shared between cars and bicycles can only be 11', clearly not enough for a car to safely pass a bike without swerving into the adjacent lane. In addition, both the 14' and 11' shared lane will encourage most cyclists to ride closer to parked cars, in the potentially hazardous "door zone". The design guide also states: *"Before deciding to provide shared lanes as bicycle accommodation, the designer should be certain that the traffic volumes and motor vehicle speeds will be low enough so that all types of bicyclists can comfortably use the roadway."* We would argue that only the most experienced cyclists feel comfortable sharing a lane with cars, trucks and buses on Mass Ave and the increased use of the roadway by new or less-experienced cyclists will not occur without bike lanes. This would be contrary to town, state and national policy to mitigate dependence on the automobile and promote alternatives.

Some opponents to the current three-lane plan also argue that Mass Ave is too busy to be safe for cycling. There are many busy roads with bus and truck traffic in the region that contain bike lanes and none to our knowledge have resulted in increased bike-safety problems. Comparable two, three and four lane streets include Commonwealth Ave, Columbus Ave and Mass Ave (recently approved) in Boston, Beacon Street in Brookline, and Cambridge Street, Broadway, Main Street and Mass Ave in Cambridge. (The section of Mass Ave in Cambridge from Central Square to the river was previously four lanes and was converted to three lanes and bike lanes, yet still carries over 20,000 vehicles a day.)

Conclusion

Since the beginning of the Mass Ave Corridor planning process, our groups have appreciated the Town's overall support for well-designed bicycle accommodations. With this memo, we hope to reinforce the notion—already put forth by the town's consulting engineers—that striped bike lanes are, by far, the most appropriate facility for the safety and convenience of cyclists. This is especially the case given the volume, speeds and available road width on Mass Ave in East Arlington.

We stand ready to advise the Town on any other bicycle-related questions you may have, so please do not hesitate to contact any of our groups.

Thank you,

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