Massachusetts Bicycle Transportation Plan
Public Engagement Results

The Massachusetts Department of Transportation (MassDOT) executed a robust public outreach process as part of the Massachusetts Bicycle Transportation Plan (the Plan). This process was designed to help identify investments, programs, and policies that advance the Plan's vision and goals. This document summarizes the results of the outreach process, which will be analyzed as part of the gap and barrier identification process.

Plan vision:

Biking in Massachusetts will a be safe, comfortable, and convenient option for everyday travel.

Plan goals:

- Create high-comfort connected bike networks for people of all ages and abilities.
- Increase the convenience and attractiveness of everyday biking.

The outreach process incorporated a variety of strategies to understand the knowledge, concerns, and ideas of Massachusetts's diverse population. Rather than host typical public meetings, MassDOT approached targeted audiences directly at listening sessions and open streets events, and supplemented in-person interactions with online tools to reach the widest possible audience.

MassDOT also created a downloadable partner toolkit with flyers and activities to leverage the broad reach of existing stakeholder organizations. These activities allowed partner organizations with existing audiences to solicit and submit Plan input on behalf of MassDOT.

Listening Sessions

Listening sessions solicited pointed, detail-rich information from diverse audiences. Audiences were identified with support from MassDOT's Office of Civil Rights and the Plan's steering committee, the Massachusetts Bicycle and Pedestrian Advisory Board (MABPAB).

MassDOT conducted 9 listening sessions between June and October 2017, as shown in Figure 1. Attendees generally had high tolerances for traffic stress, with a majority reporting that they would ride in some mixed traffic and a third reporting they would ride in mixed on almost any street (Figure 2).

Figure 1: Listening Session Audiences and Locations

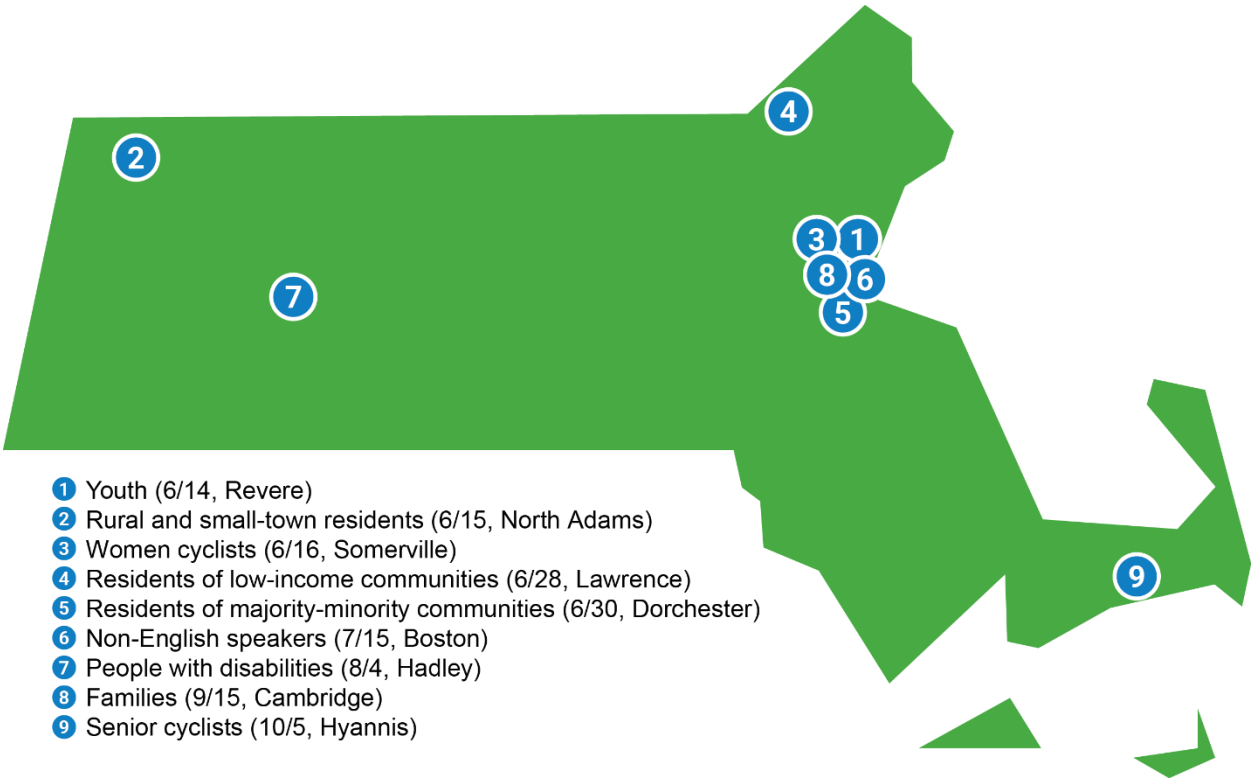
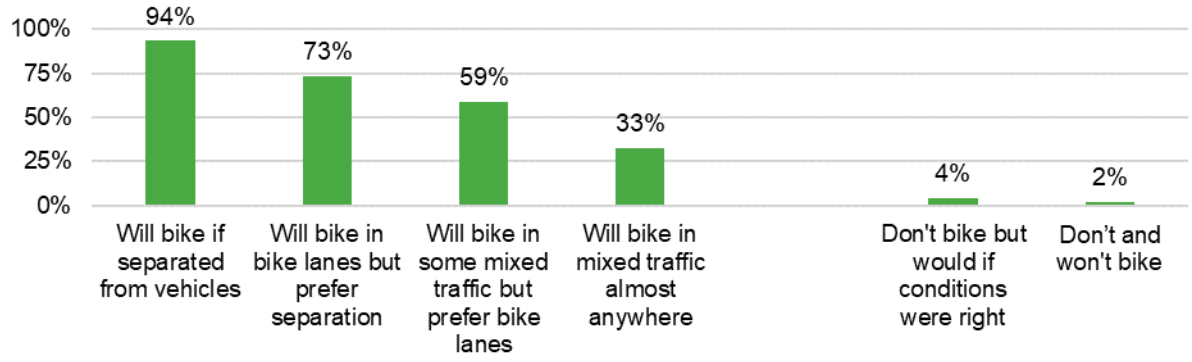


Figure 2: Listening Session Attendees' Traffic Stress Tolerance

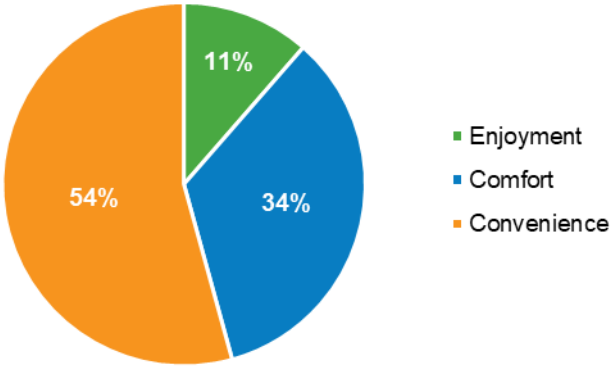


Results

Listening sessions helped collect anecdotal information about biking based on the personal experiences of diverse perspectives. While results from listening sessions are not intended to represent specific populations or speak for all existing and potential bicyclists, several common themes did emerge:

- Proximity to high motor vehicle speeds and volumes is the primary barrier to everyday biking.
- Bike networks must be low-stress and facilities must connect to feel safe and comfortable. Only then will people consider biking for everyday trips.
- Convenience is the primary motivator when deciding to bike for everyday travel (e.g., errands, shopping, etc.), as shown in Figure 3.
- Users of all transportation modes need more education.
- Aside from safety and comfort, weather, topography, and distance/time are the most common barriers to biking.

Figure 3: Listening Session Attendees' Primary Motivator When Deciding to Bike for Everyday Travel



The top five key themes and takeaways from each listening session are summarized below:

- Attendees of the "youth" listening session reported that:
    - They are concerned about personal safety (e.g., crime, theft, and stranger danger).
    - They are concerned about traffic safety.
    - They want recreational biking facilities (e.g., paths, trails, BMX park, etc.).
    - They weigh the enjoyment and independence aspect heavily when deciding to bike.
    - Riding to school is a main reason they ride—biking is their transportation.
- Attendees of the "rural and small-town residents" listening session reported that:

  - They bike for enjoyment but convenience primarily determines whether they bike or not for everyday travel.
  - Positive biking experiences mostly occur on shared use paths that are separated from motor vehicle traffic.
  - Few of the main roads feel safe for biking. Many issues relating to passing and sight distance are the result of no or narrow shoulders and topography. Rumble strips in shoulders are a biking hazard.
  - People would bike more if there as an interconnected, low stress network of on-street facilities that connect to off-street trails and town centers, and if people had knowledge how to ride and how to maintain bikes.
  - Seasonality (e.g., summer heat and winter snow) and lack of time resulting from longer trip distances are the biggest barriers to biking more.

- Attendees of the ”women cyclists” listening session reported that:
  - Flexibility, control, and convenience are the biggest driving factors when making the decision to bike.
  - Driver education is a big missing component of our current transportation system. Not everyone understands how to use the infrastructure that exists.
  - People don’t enjoy having to figure out work arounds for getting from point A to point B on a low-stress biking route. More wayfinding for bikes is needed.
  - They will ride in places that are uncomfortable because it is the most convenient way, however this does not mean they enjoy it. They also make different travel choices around using these routes based on weather, time of day, and whether or not they are traveling with kids or family.
  - None of the bicycle transportation system is useful without a connected network. If getting to good infrastructure means going through bad intersections or segments, none of it is useful.
- Attendees of the “residents of low-income communities” listening session reported that:
  - Proximity to and volume of cars creates a perceived lack of safety that prevents people from riding. They want more separation and dedicated paths.
  - Destinations need bike racks. There are none at destinations today and this prevents people from biking for everyday errands.
  - Drivers have a culture of disrespect. Drivers verbally harass people biking, routinely do not yield at crossings, and often open doors without first checking for people biking.
  - There is a lack of education of drivers, cyclists, and enforcement officers. Few seem to understand where bikes should be or what the laws are to enforce.

  - There is a lack of awareness that biking is feasible for everyday trips and people need to be encouraged to bike because they don't realize how short many of their trips actually are.

- Attendees of the "residents of majority-minority communities" listening session reported that:
  - There are a lot of perceptions and cultural subtleties around biking that affect the experience of riding or identifying as someone who rides. Some are positive, some are negative.
  - Infrastructure investment is unequal between neighborhoods. Some places are neglected until people become vocal.
  - Education and enforcement for all modes is a missing element and motor vehicle speed is a major reason biking feels so unsafe.
  - Safe, comfortable infrastructure is a prerequisite for everyday biking. Until then, it's shared use paths and parks on the weekend for fun.
  - Biking has the potential to unlock significant health and prosperity opportunities for people but not until it is safe.
- Attendees of the "non-English speakers" listening session reported that:
  - Having a safe bike facility is the biggest barrier.
  - A lack of bike shops is an impediment to many communities moving toward bicycle travel.
  - Clear, universally understood signage and wayfinding is needed for non-English speaking populations.
  - Additional education for biking in the street and more general awareness about the benefits and accessibility of biking are needed.
- Attendees of the "people with disabilities" listening session reported that:
  - Proximity cars creates a perceived lack of safety that prevents people from biking. More separation and dedicated paths are needed, as is a connected network of safe on-street bike facilities that lead to paths.
  - Traffic safety is particularly an issue because of personal histories with traumatic events leading to their current condition. Many are unwilling to risk further injury by riding bikes on street to reach shared use paths.
  - Recumbent bikes or tricycles are popular choices but their lower profiles present challenges. For example, they are less visible to drivers and may prevent users from reaching push buttons to activate crossing signals.
  - Biking provides independence and control, opportunity for physical activity and therapy, and a sense of exhilaration for those with physical disabilities.

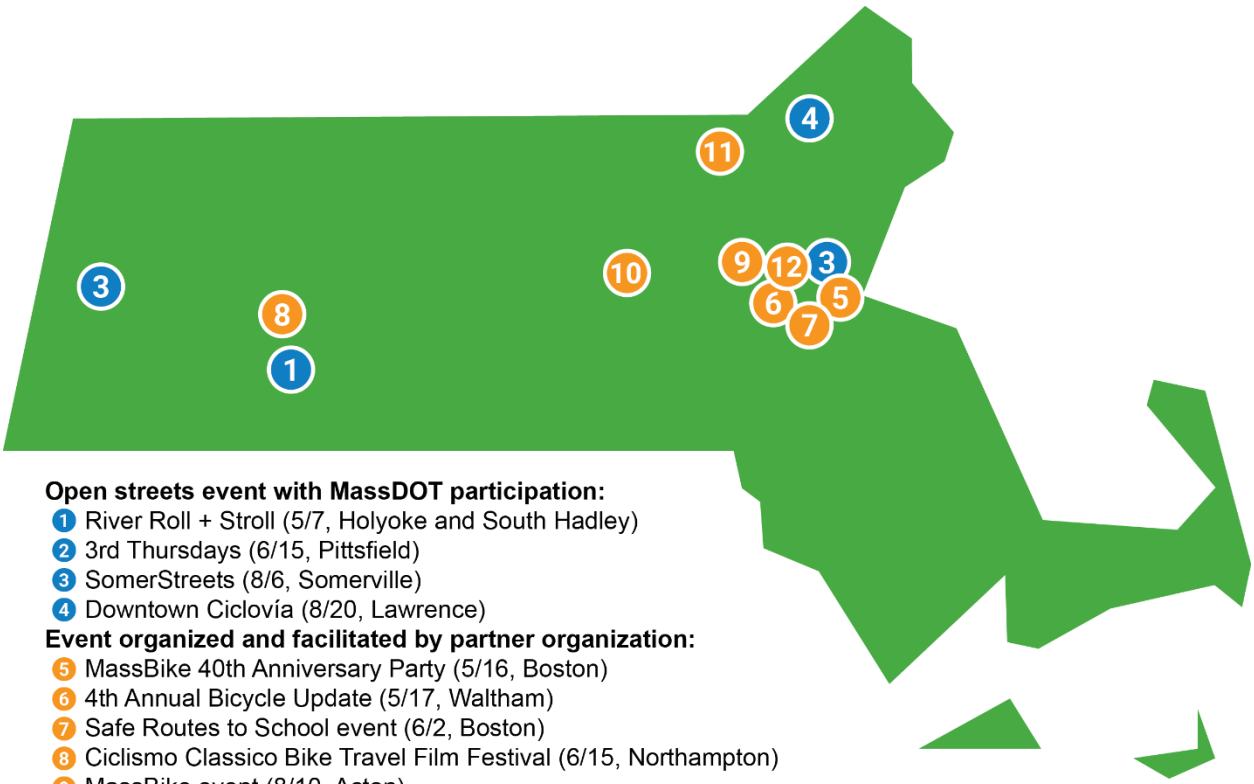
  - Drivers and cyclists alike are confused at path crossings of streets. Bicyclists and pedestrians should have priority.

- Attendees of the "families" listening session reported that:
  - There are too many missing connections in the biking network and these interruptions make it more difficult to use the existing bicycle facilities, even if the existing facilities are pleasant and safe enough for a wide range of people to use.
  - A lack of wayfinding makes it difficult to bike in unfamiliar areas, while existing bike network routes can be circuitous and unintuitive. Navigating gaps in the network is particularly intimidating as you can end up on a dangerous road.
  - On-road biking infrastructure provides space for people to bike but also reminds motorists to remain alert for cyclists.
  - Vehicular cycling is uncomfortable and unappealing for a variety of reasons—in particular, the noise from vehicles following closely behind and the pressure to go fast when taking the lane.
  - Kids and less confident cyclists are out there riding already and the infrastructure has not kept pace with keeping them safe.
- Attendees of the "senior cyclists" listening session reported that:
  - Safety is the number one issue. More people don't bike because they feel unsafe, particularly through rotaries. Those who ride tend to do so only on shared use paths
  - Cape Cod's investment in the on-street bike network has not kept pace with the ongoing and successful shared use path investment.
  - Seniors overwhelmingly view cycling as a social networking tool.
  - Many seniors bike for the health benefits. It's a mostly low-impact way to maintain or even improve sensory and physical functions.
  - Political reluctance to implement on-road infrastructure discourages biking.

Events

In-person events solicited public input via activities and to directed participants to online outreach opportunities. MassDOT participated in four open streets events between May and August 2017, as shown in Figure 4. At these events MassDOT also educated the public on the benefits of low-stress biking with a separated bike lane demonstration. Figure 4 also highlights events planned and facilitated by other organizations that recorded Plan input.

Figure 4: Event Locations



Open streets event with MassDOT participation:
1. River Roll + Stroll (5/7, Holyoke and South Hadley)
2. 3rd Thursdays (6/15, Pittsfield)
3. SomerStreets (8/6, Somerville)
4. Downtown Ciclovía (8/20, Lawrence)

Event organized and facilitated by partner organization:
5. MassBike 40th Anniversary Party (5/16, Boston)
6. 4th Annual Bicycle Update (5/17, Waltham)
7. Safe Routes to School event (6/2, Boston)
8. Ciclismo Classico Bike Travel Film Festival (6/15, Northampton)
9. MassBike event (8/10, Acton)
10. MassBike event (8/17, Hudson)
11. MassBike event (9/21, Lowell)
12. MassBike event (10/26, Belmont)

Results

Because event activities were identical to the online survey questions, event activity results are summarized in “Online Survey and In-Person Activities” on page 12. Photos from the following open streets events are available through MassDOT’s flickr account:

- River Roll + Stroll in Holyoke and South Hadley: https://www.flickr.com/photos/massdot/sets/72157681549778621
- SomerStreets in Somerville: https://www.flickr.com/photos/massdot/sets/72157684896605723
- Downtown Ciclovía in Lawrence: https://www.flickr.com/photos/massdot/sets/72157685423390434

Online Interactive Map

The online interactive map solicited geographically-specific input about issues affecting bicycle travel within the Commonwealth. Map users could identify great streets for bicycle travel, streets or intersections that need improvement, or barriers and gaps in the bike network.

Results

Before providing comments, the online map first asked users to provide basic demographic information. Figure 5 and Figure 6 summarize these data. Based on a comparison to US Census data,[i] online map users between the ages of 25 and 64 are overrepresented while younger users (under 24) and older users (65 and over) are underrepresented. Men are also overrepresented as a share of map users and bike commuters compared to the Massachusetts population.[ii]

Figure 5: Online Map Users' Age

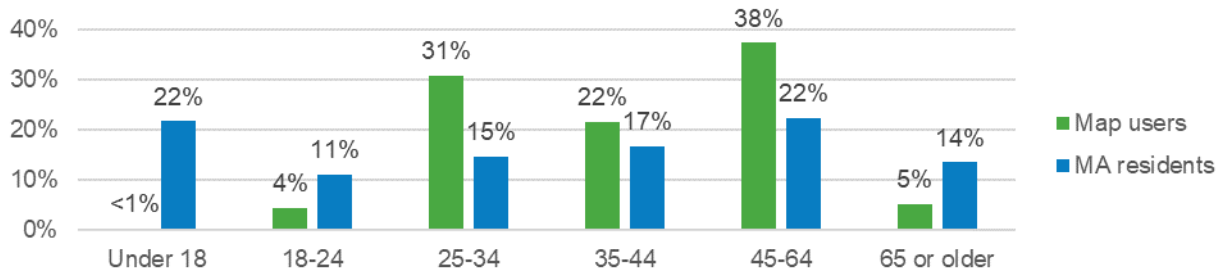
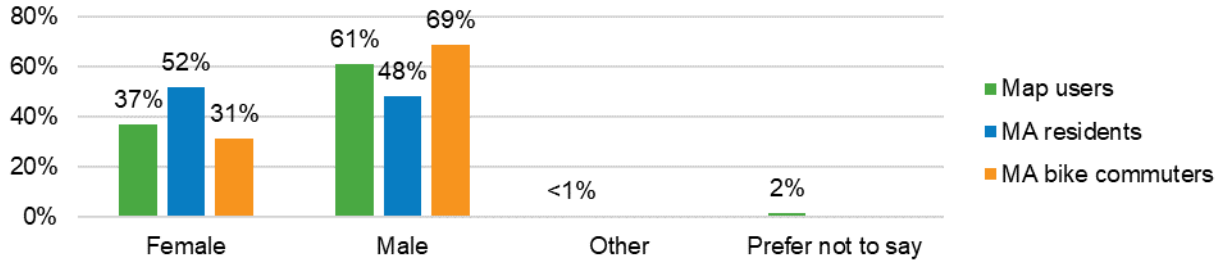
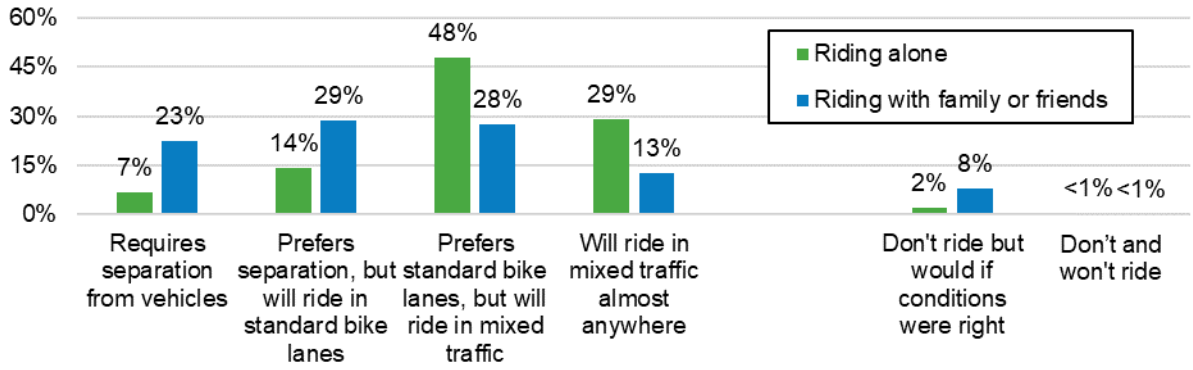


Figure 6: Online Map Users' Gender Identity



The online map survey also asked users about their level of comfort when biking alone and when biking in a group with friends or family. As shown in Figure 7, nearly all map users ride a bike. The results indicate that map users are more traffic tolerant when biking alone and, correspondingly, that tolerance for traffic stress decreases when in a group. While 77% of users said they would bike in mixed traffic on busy streets for at least a portion of their trip, only 41% said they would do so when biking in a group. Map users who require physical separation from vehicles when biking (i.e., shared use paths and separated bike lanes) increased from 7% when riding alone to 23% when riding with a group. Finally, when in a group, map users were four times likelier to say they do not bike but would if conditions were right (8% compared to 2% when biking alone).

Figure 7: Online Map Users' Comfort Level When Biking



In all, 951 users provided 3,181 comments, for an average of 3.3 comments per user:

- 318 comments (10%) for great streets or paths (see Figure 8)
- 919 comments (29%) for needs improvement for spot location and 1,179 comments (37%) for needs improvement for street or path (see Figure 9)
- 765 comments (24%) for bike network gaps or barriers (see Figure 10)

Generally, online map comments are concentrated in urban areas, in particular greater Boston and Pioneer Valley, reinforcing the everyday biking potential of population centers. Well-used pathways throughout the Commonwealth are illuminated as well, both as "great streets or paths" and, where paths end, as "bike network gaps or barriers."

Figure 8: Frequency of "Great Streets or Paths" Comments by Online Map Users

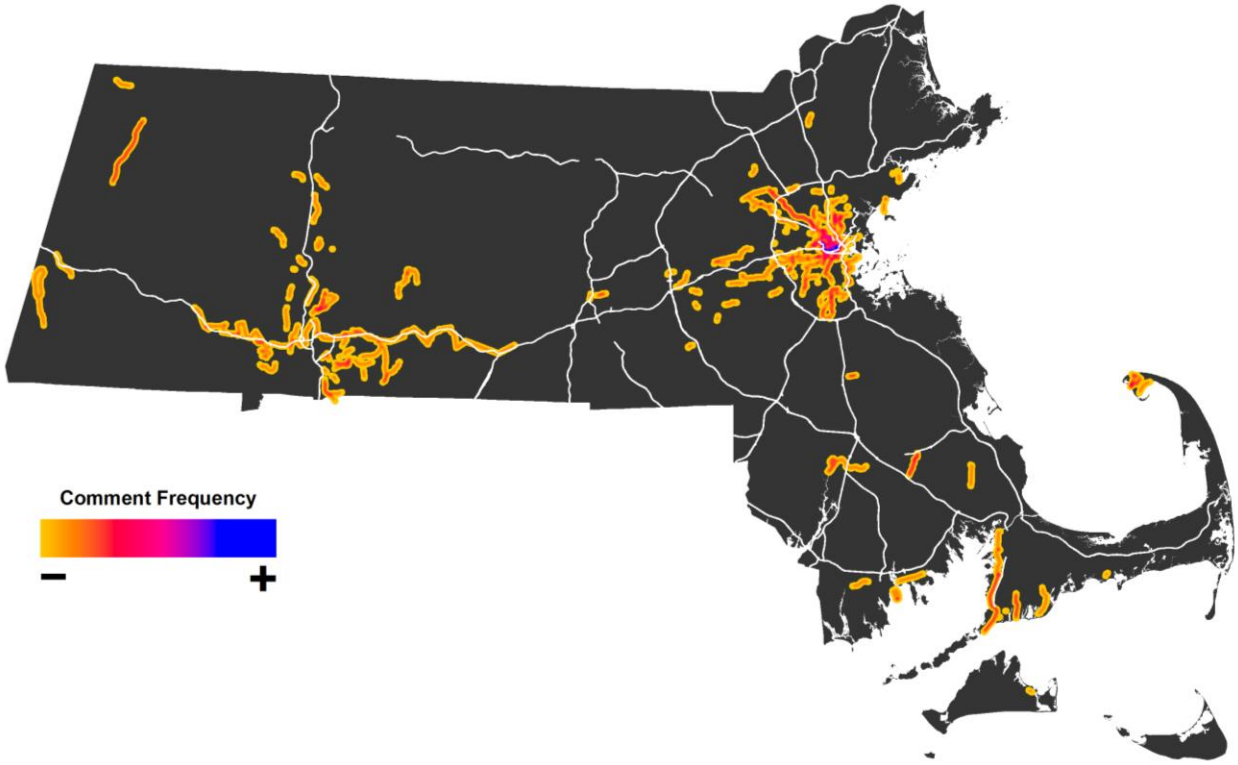


Figure 9: Frequency of "Needs Improvement" Comments by Online Map Users

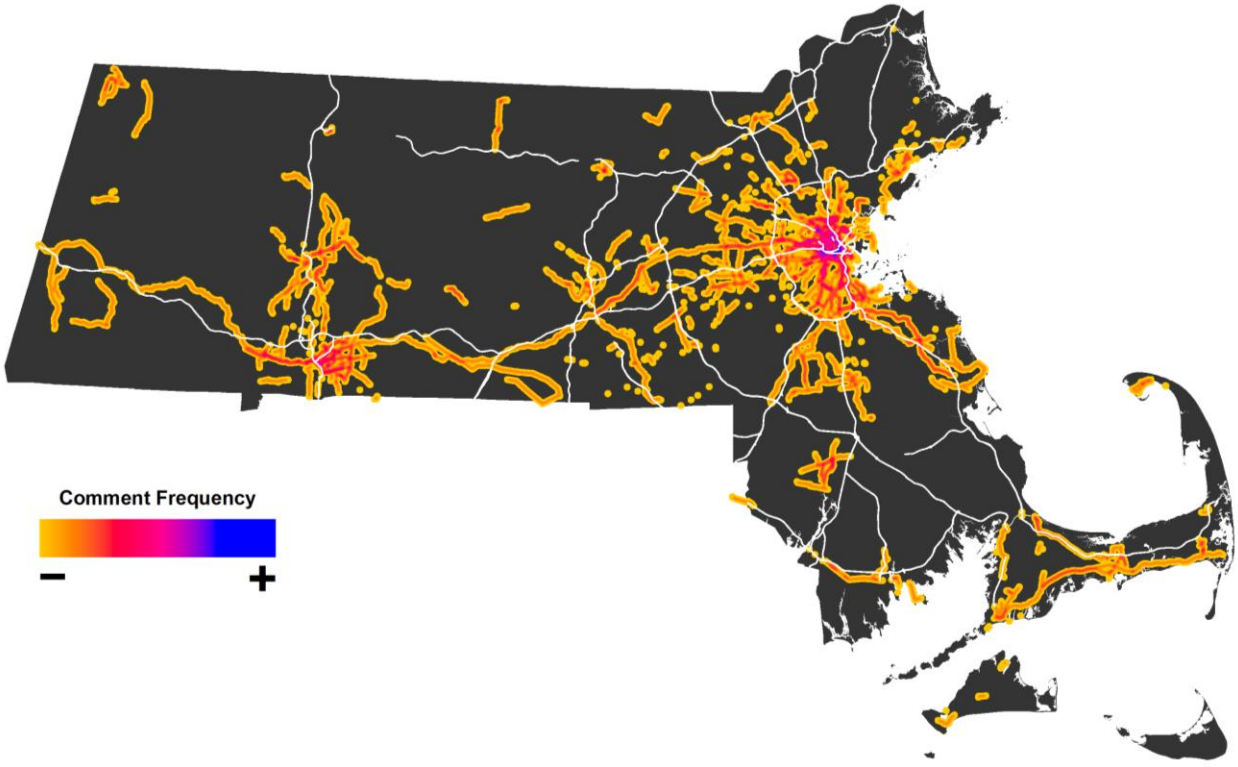
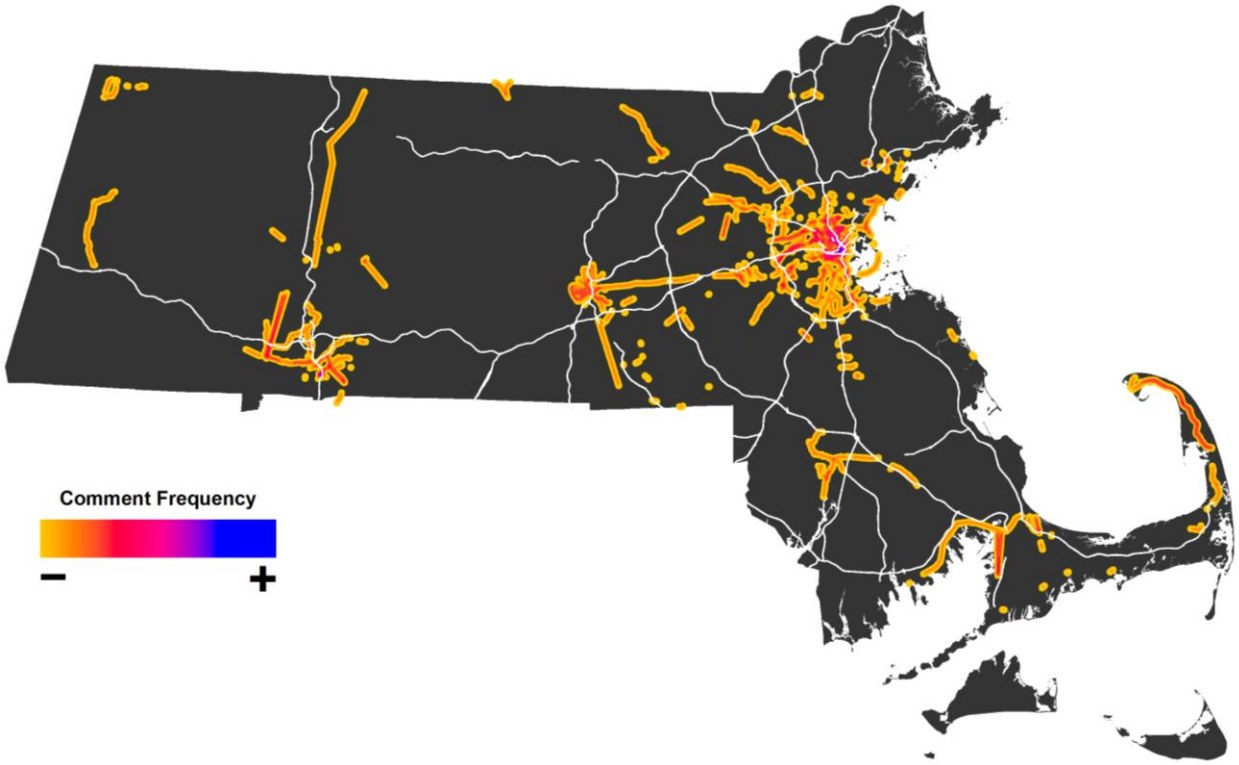


Figure 10: Frequency of "Bike Network Gaps or Barriers" Comments by Online Map Users



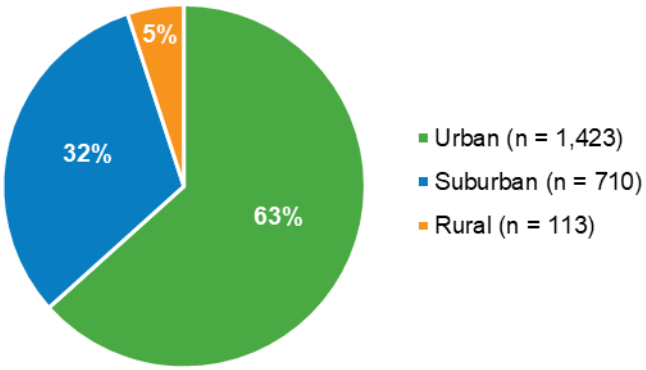
Online Survey & In-Person Activities

The online survey solicited input about priority destinations and biking barriers for urban, suburban, and rural communities. An in-person version of the online survey was created to solicit input during open streets events. Results from the online survey and in-person activities are combined in this section.[1]

Results

In all, an estimated 2,246 participants completed an online survey or in-person activity. MassDOT and partner organizations facilitated in-person activities in at least 12 events. Figure 11 summarizes online survey participation by self-reported community type: urban, suburban, or rural. Most participants reported that they reside in urban communities.

Figure 11: Community Type of Online Survey and In-Person Activity Participants



Survey/Activity 1: Which Bike Connections are Most Important to You?

Participants voted for destinations that they most want to reach by bike. To require participants to prioritize their votes, participants could only vote for up to three of the five categories: parks, schools, shopping/dining, transit, work. Participants also noted whether they live in an urban, suburban, or rural community.

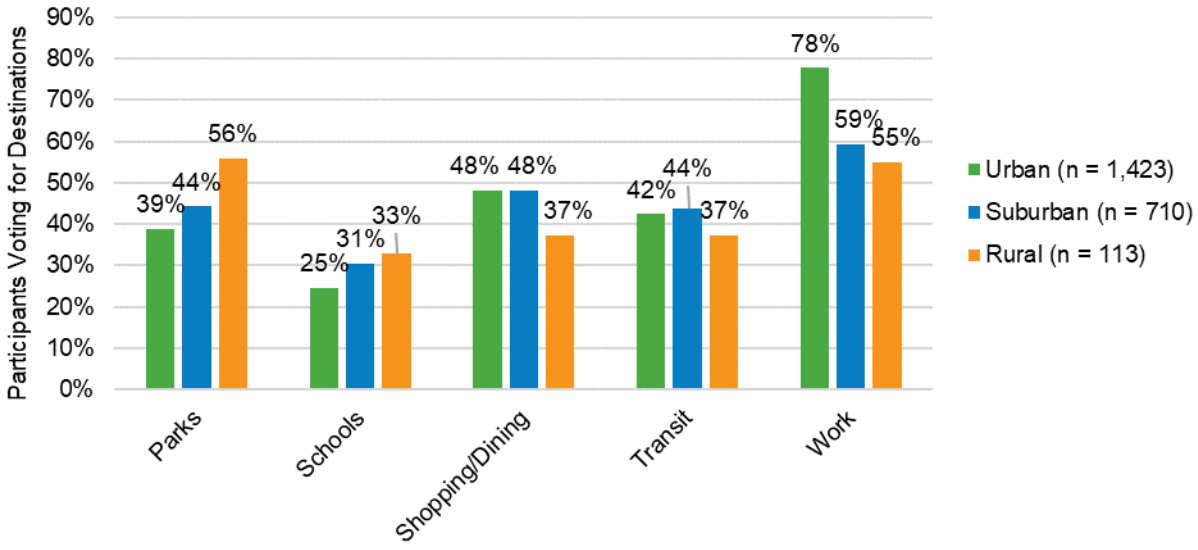
Based on the total number of votes, Table 1 orders destinations from most to least preferred for each community type. While the percentages vary, the ranking of destinations is similar between participants from urban and suburban communities: commutes to work are most important followed by shopping and dining. Rural participants voted more frequently for parks than urban and suburban participants, though bike connections to work is a very close second place. Bike connections to school received the fewest votes from all participants. Figure 12 reveals the percent of participants that voted for each destination.

[1] The exact number of people participating in the in-person activities was not tracked and is, therefore, unknown. However, to fully analyze the data, an estimate of in-person activity participants is needed so that the results can be combined with data from the online survey (the number of online survey users is known). Estimating the number of in-person activity participants is complicated because each respondent could have completed one or both activities and each activity allowed for a varying number of votes. An estimate of the number of urban, suburban, and rural in-person activity respondents was derived by dividing the number of in-person responses by the average number of comments observed from the online survey. For example, 1,008 online survey respondents noted that they live in urban communities. Those 1,008 urban respondents voted 2,337 times for an average rate of 2.32 comments per urban respondent. The number of urban in-person activity responses were divided by this average value to estimate the number of in-person activity urban respondents. This process was repeated for suburban and rural comments.

Table 1: Preferences of Bike Connection Survey Participants

Rank	Urban (n = 1,423)	Suburban (n = 710)	Rural (n = 113)
1	Work	Work	Parks
2	Shopping/dining	Shopping/dining	Work
3	Transit	Parks (tied) Transit (tied)	Shopping/dining (tied) Transit (tied)
4	Parks		
5	Schools	Schools	Schools

Figure 12: Bike Connection Survey Results



Survey/Activity 2: I Would Bike There If…

Participants were also asked to vote for statements that would help make biking a viable transportation option for everyday trips (i.e., "I would bike there if…"). Participants could vote for none or all 15 statements. This survey was designed specifically to understand biking-related concerns *other than* a lack of safe and comfortable bike lanes and paths.

Figure 13 summarizes the results of this survey and orders statements by voting total. The results show that the top three "I would bike there if…" statements apply to urban, suburban, and rural participants:

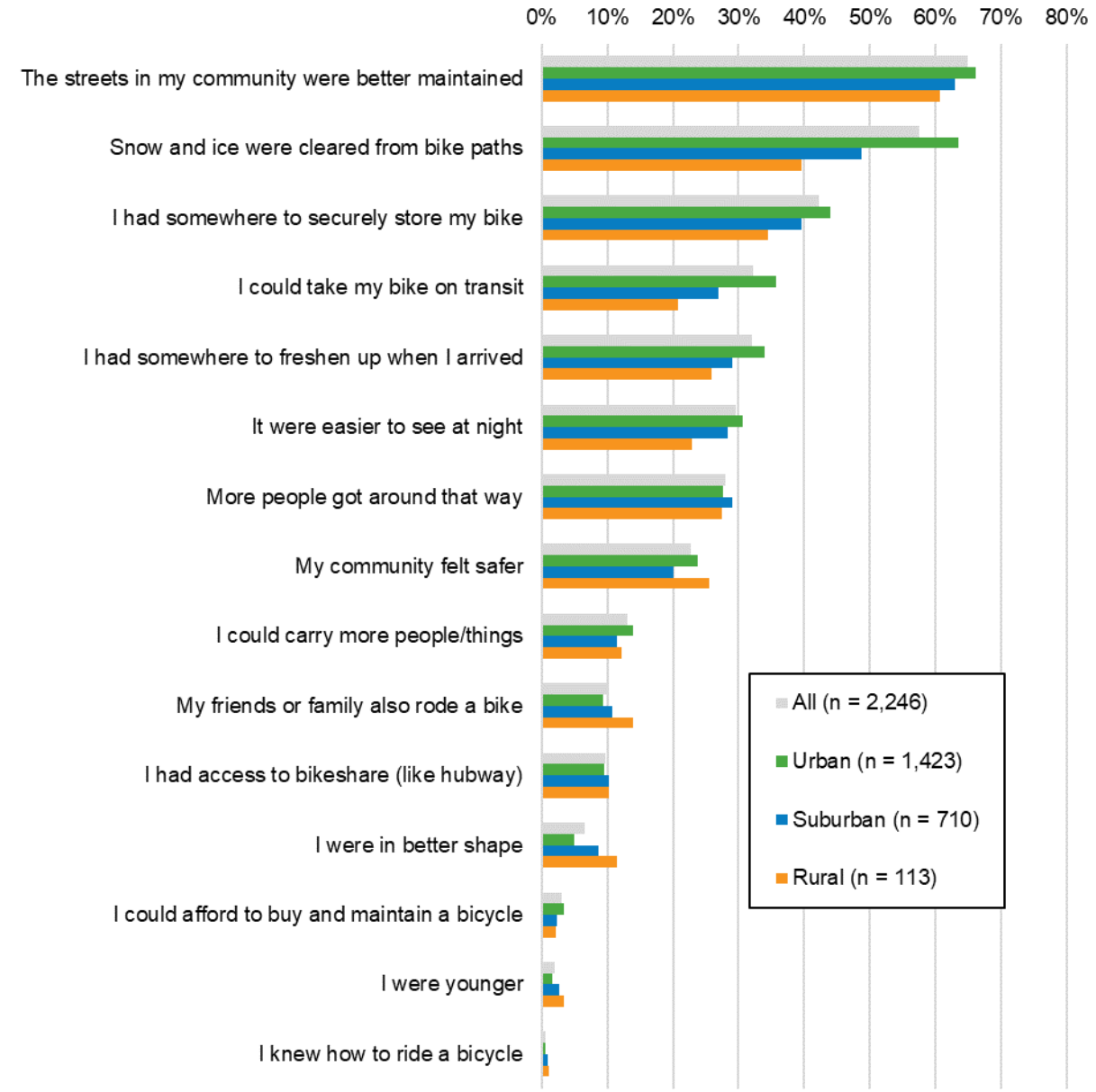
1. I would bike there if the streets in my community were better maintained.
2. I would bike there if snow and ice were cleared from bike paths.
3. I would bike there if I had somewhere to securely store my bike.

Some noteworthy results include:

- The majority of all participants (i.e., urban, suburban, and rural) noted that street maintenance is their biggest barrier.

- The majority of urban participants noted that snow and ice clearance is a barrier to biking. Urban participants were particularly concerned about snow and ice clearance (63%) compared to suburban and rural participants (49% and 40%).
- Participants in rural and suburban communities voted that they desire bikeshare at similar rates to urban participants (10% across all community types).
- Rural and suburban participants were more likely to report their physical fitness as a barrier to biking (12% and 9%, respectively) compared to urban participants (5%).
- Participants consistently demonstrated that a lack of people biking is a barrier to their own decision to bike (27% – 28% across all community types).

Figure 13: "I Would Bike There If…" Survey Results (ordered by vote total)



Social Media

Social media educated the public about the Plan and directed participants to online resources and in-person events. Online content was posted to the following platforms: MassDOT Blog, Twitter, Flickr, Instagram, and Facebook.

Results

MassDOT produced and published the following blog posts to encourage public participation the Plan:

- 4/20/2017: *Holyoke, South Hadley: "Roll and Stroll" Festival May 7* (https://blog.mass.gov/transportation/uncategorized/holyoke-south-hadley-roll-and-stroll-festival-may-7/)
- 5/2/2017: *MassDOT Focus: Accessibility for Bicyclists, Pedestrians* (https://blog.mass.gov/transportation/uncategorized/massdot-focus-accessibility-for-bicyclists-pedestrians/)
- 5/11/2017: *Bay State Bike Week May 13-May 21: Free Events* (https://blog.mass.gov/transportation/uncategorized/bay-state-bike-week-may-13-may-21-free-events/)
- 8/4/2017: *MassDOT Participates in SomerStreets* (https://blog.mass.gov/transportation/uncategorized/massdot-participates-in-somerstreets/)
- 8/18/2017: *Bike Plan: MassDOT to Join Lawrence Ciclovía* (https://blog.mass.gov/transportation/uncategorized/bike-plan-massdot-to-join-lawrence-ciclovia/)

Online content was posted to Twitter and, in some cases, this content was cross-posted to other social media platforms. Plan tweets were tagged with the hashtag #MABikePlan and, through information provided in the partner toolkit, other organizations were encouraged to promote the Plan via social media. Note that this memorandum only summarizes results from MassDOT's Twitter account.

As of 10/11/2017, Plan tweets resulted in 441,900 impressions and 4,258 engagements, for a total engagement rate of approximately 1.0%, which is relatively high for Twitter.[iii] Impressions are the number of times the tweets were seen by users and do not require the user to interact with the tweet. Engagements represent the number of times users interacted with tweets in some way. Twitter users engaged with #MABikePlan tweets in the following ways:

- 39.8% viewed a photo, image, or other media within the tweet
- 20.3% clicked on a URL within the tweet
- 17.4% expanded the tweet to view more detail
- 10.1% liked the tweet
- 6.3% retweeted the tweet

- 2.8% clicked on a hashtag within the tweet
- 2.6% clicked on MassDOT's profile
- 0.7% replied to the tweet

In all, 58 #MABikePlan tweets were posted between April 27 and October 6, 2017. Figure 14 shows that most tweets were posted during May, which corresponds to Bay State Bike Week and the launch of the Plan outreach. Additional tweets were posted throughout the summer primarily to promote open streets events and share event photos. Table 2 highlights the tweets with the most impressions, engagements, and highest engagement rate.

Figure 14: #MABikePlan Twitter Activity

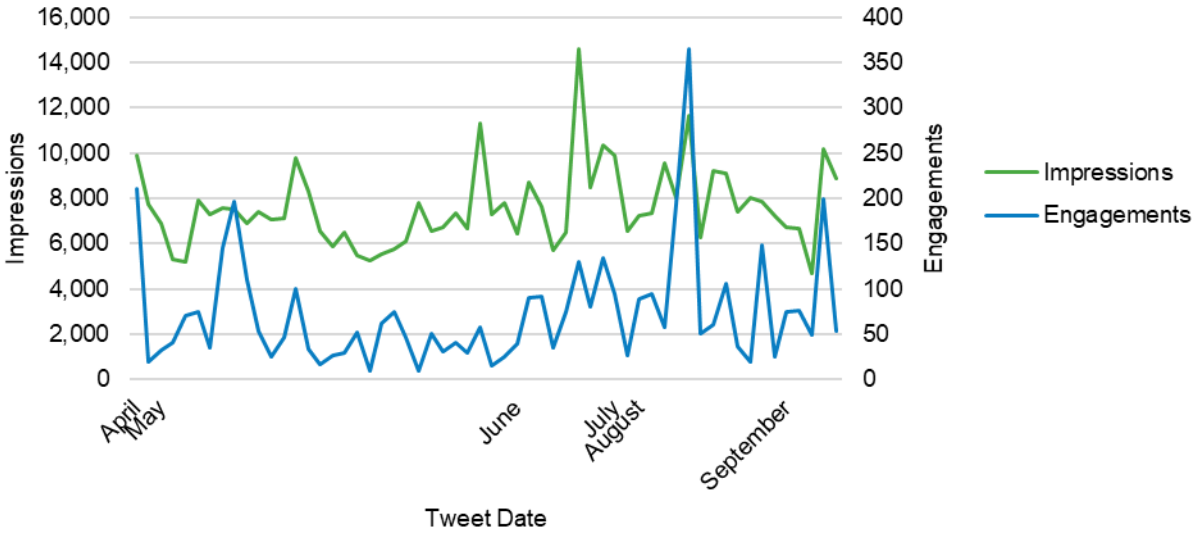


Table 2: #MABikePlan Tweet Highlights

Impressions	**Engagement**
The June 16 tweet received 14,621 impressions, the highest total for a single #MABikePlan tweet.	The August 6 tweet received 365 engagements and resulted in a 3.1% engagement rate, the highest total for a single #MABikePlan tweet.
	

Endnotes

[i] Massachusetts Demographic Statistics (US Census 2010). https://www.infoplease.com/us/comprehensive-census-data-state/demographic-statistics-149

[ii] Commuting Characteristics by Sex (2011-2015 American Community Survey 5-Year Estimates). https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_5YR_S0801&prodType=table

[iii] FanBridge Blog. *What is a Good Engagement Rate?* (https://www.fanbridge.com/blog/what-is-a-good-engagement-rate)