



## Memorandum

**Date:** July 2, 2018

**To:** Cara Seiderman, Transportation Program Manager

**Organization:** City of Cambridge, Community Development Department

**From:** Jeff Brubaker, AICP

**Project:** Brattle Street – Mason Street to Eliot Street (6085.03B)

**Re:** Brattle Street Intercept Survey Summary

This memorandum summarizes the findings from an intercept survey conducted along Brattle Street on May 2 and May 5, 2018. The intent of the survey was to document opinions and feedback associated with the two-way separated bike lane recently installed on Brattle Street between Eliot Street and Mason Street.

### Objective of the Intercept Survey

The separated bike lane was installed on Brattle Street during the fall of 2017, after being chosen as a priority project through the City's Participatory Budgeting process. Before the installation, the Brattle Street cross section consisted of two westbound general travel lanes and curbside parking on both sides of the street. There were no bike lanes. The new cross section establishes physical separation between motorists and bicyclists using painted buffers and flex posts to delineate the two-way bike lane on the north side of the street. The number of general travel lanes has been reduced from two to one. Parking lanes are retained on both sides of the street, with parking on the north side physically separating the two-way bike facility from the flow of motor vehicle traffic.

Adjacent land uses include Harvard University, other educational institutions, and retail businesses. There are three Bluebikes bikeshare stations within two blocks. One of the Bluebikes stations is on the corner of Brattle and Eliot Streets. This intersection also features underground access to the Harvard Square MBTA station, which is served by the Red Line and multiple bus routes using the Harvard Bus Tunnel.

The intercept survey was undertaken to understand better the community's perspectives on the changes. Input was sought from all street users, including those arriving on foot, by bicycle, by transit, in a private car or ride hail service (Lyft, Uber, or taxi), and with a delivery vehicle.

## Survey Procedure

A survey was devised through coordination with City of Cambridge staff. The survey was designed to be short and easy for respondents to answer quickly, while still soliciting useful feedback. TDG staff approached respondents and entered their answers manually on survey forms that were taken to the site. The survey results were then tabulated in a spreadsheet and summarized.

The survey form is shown in Figure 1 and Appendix A. Questions included:

- How did you get here today?
- Why are you on Brattle Street today?
- What is your overall opinion about the current design and function of Brattle Street?
  - Delivery persons only
  - All other responses
- How have the changes on Brattle Street affected how frequently you visit?
- What is your overall level of comfort and ability to access destinations along the street when driving, cycling, or walking?

SECTION A	
1. Time _____	2. What is your ZIP code? _____
3. What is your age group?	4. How did you get here today?
a. 0-17	a. Walk
b. 18-24	b. Bike
c. 25-34	c. Transit
d. 35-44	d. Private Vehicle
e. 45-54	e. Commercial Vehicle (e.g., delivery vehicle) <i>[If delivery person, skip to Section C]</i>
f. 55-64	f. Lyft/Uber/Taxi
g. 65-74	g. Other: _____
h. 75+	
i. Prefer not to answer	
5. Why are you on Brattle Street today? (can check more than one)	6. What is your overall opinion about the current design and function of Brattle Street?
a. I live nearby	a. Very Satisfied
b. I work nearby	b. Satisfied
c. I'm at/going to school	c. Neutral/No Opinion
d. I'm shopping/running errands/dining	d. Dissatisfied
e. I bring a child/children/other family members to activities	e. Very Dissatisfied
f. I'm on my way to somewhere else (e.g., commuting)	Why? _____
g. I'm visiting from out of town (i.e., outside of the Boston metro area)	_____
h. I was looking for parking	_____
i. I'm making deliveries	
j. Other (fill in) _____	
7. Are you familiar with the changes made last fall to Brattle Street?	
If so, how have the changes on Brattle Street affected how frequently you visit?	
a. I come to Brattle Street <b>more often</b> than before	
b. I come to Brattle Street <b>less often</b> than before	
c. I come to Brattle Street <b>about the same frequency</b> as before	
d. N/A (e.g., I have not come here before, or am not familiar with the changes)	

Figure 1. Excerpt from the survey form

Four staff from TDG administered the survey on Wednesday, May 2, and Saturday, May 5, 2018, at various locations along the route. On Wednesday, May 2, they surveyed street users from 2:00 PM to 4:30 PM. On Saturday, May 5, 2018, they surveyed street users from 11:00 AM to 1:00 PM. Overall, 87 responses were received.

Since a small number of respondents did not answer certain questions, total counts by question vary. Two respondents did not answer Questions 5 through 10, which make up a large part of the survey’s opinion-gauging questions. None of the survey respondents were delivery drivers.

### Mode Choice

The majority of respondents arrived on foot, followed by transit and private vehicle. More than three-fourths of those surveyed arrived on foot, by transit, or by bike.

*Table 1. Respondents’ mode choice on the day of the intercept survey*

<b>4. How did you get here today?</b>		
<b>Mode</b>	<b>Count</b>	<b>%</b>
<b>Walk</b>	40	41.7
<b>Bike</b>	14	13.5
<b>Transit</b>	23	24.0
<b>Private Vehicle</b>	16	16.7
<b>Commercial Vehicle (e.g., delivery vehicle)</b>	0	0.0
<b>Lyft/Uber/Taxi</b>	3	3.1
<b>Other</b>	0	1.0
<b>Total</b>	<b>96</b>	

Notes: Nine responses included walking paired with another mode. One response included transit paired with Lyft/Uber/Taxi. One response was coded as Other with “steel steed” written in; based on the rest of the survey, this response was recoded as “Bike.” One survey did not record a response to this question.

The significant transit arrival mode share is indicative of the street’s proximity to the Harvard Square station, which has one of the highest ridership totals of any station in the MBTA heavy rail system.

### Trip purpose

There was a plurality of trip purposes among respondents, as no one trip purpose exceeded one-third of the total. The most common trip purpose was shopping, running errands, or dining (33%). Another third of respondents were on the street because they either lived or worked nearby.

Table 2. Reason for visiting Brattle Street on the day of the intercept survey

5. Why are you on Brattle Street today? (can check more than one)		
Answer	Total	%
I live nearby	20	19.2
I work nearby	15	14.4
I'm at/going to school	9	8.7
I'm shopping/running errands/dining	34	32.7
I bring a child/children/other family member to activities	2	1.9
I'm on my way to somewhere else (e.g., commuting)	3	2.9
I'm visiting from out of town (i.e., outside of the Boston metro area)	2	1.9
I was looking for parking	0	0.0
I'm making deliveries	0	0.0
Other (fill in)	19	18.3
<b>Total</b>	<b>104</b>	

Although “dining” was part of another response option, by far the most common of the other/write-in responses was “lunch,” especially for the Saturday mid-day survey round. This suggests that a major reason why people come to this part of Brattle Street is to dine. Other responses included visiting family, appointments, accessing transit, walking dogs, and just walking around.

#### Overall opinion about the new street designs

As Table 3 shows, the majority (63%) of the respondents indicated they were satisfied or very satisfied with the new street design. This total is more than triple the percentage of respondents who indicated they were dissatisfied or very dissatisfied (20%).

Table 3. Overall opinion of the street design

6. What is your overall opinion about the current design and function of Brattle Street?		
Answer	Total	%
Very Satisfied	15	18.8
Satisfied	35	43.8
Neutral/No Opinion	14	17.5
Dissatisfied	10	12.5
Very Dissatisfied	6	7.5
<b>Total</b>	<b>80</b>	

Table 4 provides counts and percentages for respondents’ opinions on the street design stratified by mode. The results show that, for each mode, the number and proportion of people either very satisfied or satisfied with the current design and function of the street exceeds the number who are either dissatisfied or very dissatisfied. However, sample sizes are small when stratifying by mode.

Table 4. Overall opinion of the street design, by arrival mode.

6. What is your overall opinion about the current design and function of Brattle Street?										
	Answer by arrival mode									
	Walk		Bike		Transit		Private Vehicle		Lyft/Uber/Taxi	
Answer	#	%	#	%	#	%	#	%	#	%
Very Satisfied	7	18.9	4	40.0	2	11.8	1	7.1	1	50.0
Satisfied	15	40.5	4	40.0	8	47.1	7	50.0	1	50.0
Neutral/No Opinion	9	24.3	0	0.0	4	23.5	1	7.1	0	0.0
Dissatisfied	6	16.2	1	10.0	1	5.9	2	14.3	0	0.0
Very Dissatisfied	0	0.0	1	10.0	2	11.8	3	21.4	0	0.0
<b>Total</b>	<b>37</b>		<b>10</b>		<b>17</b>		<b>14</b>		<b>2</b>	

Responses to the verbal explanation portion of this question are included in Appendix B.

#### Effect of the street design on frequency of visiting the street

As Table 5 shows, 78 people provided a response to the question regarding whether and how the new street design affected how frequently they visit the street. Of the responses, nearly two-thirds stated that they come to the street with about the same frequency as before the design changes were made. Only 11 respondents indicated that the new design affected their visiting frequency. Notably, nine respondents stated they now visit the street more frequently, compared to two who now visit less frequently.

Table 5. Effect of the street design on frequency of visiting the street

7. Are you familiar with the changes made last fall to Brattle Street? If so, how have the changes on Brattle Street affected how frequently you visit?		
Answer	Total	%
I come to Brattle Street more often than before	9	11.5
I come to Brattle Street less often than before	2	2.6
I come to Brattle Street about the same frequency as before	50	64.1
N/A (e.g., I have not come here before, or am not familiar with changes)	17	21.8
<b>Total</b>	<b>78</b>	

When the responses are stratified by arrival mode:

- Of the nine respondents who reported that they visit the street *more often*, three arrived on foot, five by bike, and one by private vehicle.
- Both of the respondents who reported that they visit the street *less often* arrived by private vehicle.
- The most common response for all reported arrival modes was “I come to Brattle Street about the same frequency as before.” This includes:

- 27 of 37 who arrived on foot
- 3 of 10 who arrived by bike
- 11 of 17 who arrived by transit
- 8 of 13 who arrived in a private vehicle
- The one respondent who arrived via a TNC vehicle who responded to this question

A caveat to this question is that, other things equal, those who may visit the street less often may be less likely to have participated in the intercept survey. The City has also administered an online survey, and the results of the same question in the online survey supplements these results to provide an enhanced understanding of how the street design may affect visit frequency.

### Comfort and access

Respondents were asked about their *overall level of comfort and ability to access destinations along the street* for the modes they used on Brattle Street (not necessarily just the mode they reported in Question 4).

The surveyors provided the following preface to these questions:

We would like to get a sense of your experience of Brattle Street’s new design. Understanding that this may vary depending on how you happen to be getting around, we are providing the opportunity for you to select different responses as relevant.

Respondents then reported their level of satisfaction with these two aspects of their travel experience.

Highlights from Table 6 and Table 7 include:

#### *Overall level of comfort*

- There is a slightly higher level of satisfaction than dissatisfaction for respondents when driving along the street (39% very satisfied or satisfied; 33% very dissatisfied or dissatisfied). The most common responses for driving were neutral and dissatisfied (11 each). However, there were eight respondents who said they were very satisfied compared to two who were very dissatisfied.
- The vast majority of respondents who walk or bike along the street expressed satisfaction with their overall level of comfort while using each mode: 79% for bicycling and 76% for walking.

#### *Ability to access destinations along the street*

- Half the respondents who reported they drive down the street indicated they are satisfied with their ability to access destinations along the street when driving, compared to 32% who indicated they were dissatisfied or very dissatisfied.
- The vast majority of respondents who walk or bike along the street expressed satisfaction with their ability to access destinations along the street when using each mode: very

satisfied/satisfied outnumbers dissatisfied/very dissatisfied by a margin of 25 to 1 for biking and 58 to 4 for walking.

Table 6. Overall level of comfort, by mode

8a.-10a. Overall level of comfort when I am...	Driving		Biking		Walking	
	#	%	#	%	#	%
<b>Very Satisfied</b>	8	20.5	16	55.2	28	37.3
<b>Satisfied</b>	7	17.9	7	24.1	29	38.7
<b>Neutral/No Opinion</b>	11	28.2	3	10.3	8	10.7
<b>Dissatisfied</b>	11	28.2	2	6.9	10	13.3
<b>Very Dissatisfied</b>	2	5.1	1	3.4	0	0.0
<b>Not Sure</b>	0	0.0	0	0.0	0	0.0
<b>Total</b>	<b>39</b>		<b>29</b>		<b>75</b>	

Table 7. Ability to access destinations along the street, by mode

8b.-10b. Ability to access destinations along the street when I am...	Driving		Biking		Walking	
	#	%	#	%	#	%
<b>Very Satisfied</b>	7	18.4	18	64.3	32	45.1
<b>Satisfied</b>	12	31.6	7	25.0	26	36.6
<b>Neutral/No Opinion</b>	7	18.4	2	7.1	9	12.7
<b>Dissatisfied</b>	9	23.7	1	3.6	4	5.6
<b>Very Dissatisfied</b>	3	7.9	0	0.0	0	0.0
<b>Not Sure</b>	0	0.0	0	0.0	0	0.0
<b>Total</b>	<b>38</b>		<b>28</b>		<b>71</b>	

### Other comments

Respondents were given the opportunity to voice general comments at the end of the survey. These comments are logged in the Appendix.

### Deliveries

No respondents reported that they arrived at the street by commercial vehicle.

### Conclusions and Recommendations

The results of the intercept survey suggest that the street design changes have a high level of favorability for people walking or bicycling. They have a moderate margin of favorability for people driving along the street, although those using this mode expressed higher levels of dissatisfaction compared to those

walking or bicycling. The survey responses also suggest that the street design has a mostly neutral-to-positive effect on frequency of visiting the street.

Recommendations include analyzing these results in conjunction with the online survey, which allows for a comparison of opinions between people using the street and people who may or may not use the street, and continuing to seek feedback from delivery drivers, who were not part of the respondents.

# Appendix A – Survey Instrument

**BRATTLE STREET INTERCEPT SURVEY**

Date \_\_\_\_\_

Surveyor Name \_\_\_\_\_

Weather \_\_\_\_\_

<b>SECTION A</b>		
1. Time _____	2. What is your ZIP code? _____	
3. What is your age group? a. 0-17 b. 18-24 c. 25-34 d. 35-44 e. 45-54 f. 55-64 g. 65-74 h. 75+ i. Prefer not to answer	4. How did you get here today? a. Walk b. Bike c. Transit d. Private Vehicle e. Commercial Vehicle (e.g., delivery vehicle) <i>[If delivery person, skip to Section C]</i> f. Lyft/Uber/Taxi g. Other: _____	
5. Why are you on Brattle Street today? (can check more than one) a. I live nearby b. I work nearby c. I'm at/going to school d. I'm shopping/running errands/dining e. I bring a child/children/other family members to activities f. I'm on my way to somewhere else (e.g., commuting) g. I'm visiting from out of town (i.e., outside of the Boston metro area) h. I was looking for parking i. I'm making deliveries j. Other (fill in) _____	6. What is your overall opinion about the current design and function of Brattle Street? a. Very Satisfied b. Satisfied c. Neutral/No Opinion d. Dissatisfied e. Very Dissatisfied  Why? _____ _____ _____	
7. Are you familiar with the changes made last fall to Brattle Street? If so, how have the changes on Brattle Street affected how frequently you visit? a. I come to Brattle Street <u>more often</u> than before b. I come to Brattle Street <u>less often</u> than before c. I come to Brattle Street <u>about the same frequency</u> as before d. N/A (e.g., I have not come here before, or am not familiar with the changes)		
<b>SECTION B</b> We would like to get a sense of your experience of Brattle Street's new design. Understanding that this may vary depending on how you happen to be getting around, we are providing the opportunity for you to select difference responses as relevant. <i>[Only ask about modes that respondent indicated they use.]</i>		
8. When I am DRIVING	9. When I am BIKING	10. When I am WALKING
a. Overall level of comfort i. Very Satisfied ii. Satisfied iii. Neutral/No impact iv. Dissatisfied v. Very Dissatisfied vi. Not sure	a. Overall level of comfort i. Very Satisfied ii. Satisfied iii. Neutral/No impact iv. Dissatisfied v. Very Dissatisfied vi. Not sure	a. Overall level of comfort i. Very Satisfied ii. Satisfied iii. Neutral/No impact iv. Dissatisfied v. Very Dissatisfied vi. Not sure
b. Ability to access destinations along the street i. Very Satisfied ii. Satisfied iii. Neutral/No impact iv. Dissatisfied v. Very Dissatisfied vi. Not sure	b. Ability to access destinations along the street i. Very Satisfied ii. Satisfied iii. Neutral/No impact iv. Dissatisfied v. Very Dissatisfied vi. Not sure	b. Ability to access destinations along the street i. Very Satisfied ii. Satisfied iii. Neutral/No impact iv. Dissatisfied v. Very Dissatisfied vi. Not sure
11. Other comments? _____ _____ _____		
<b>SECTION C (FOR DELIVERY PERSONS ONLY)</b>		
12. What is your overall opinion about the current design and function of Brattle Street? a. Very Satisfied b. Satisfied c. Neutral/No Opinion d. Dissatisfied e. Very Dissatisfied		
Can you comment on why you chose that response? _____ _____		
13. Compared to before Brattle Street was redesigned, I find it: a. Easier to park b. Parking ease/difficulty is about the same as before c. More difficult to park d. N/A, did not make deliveries to Brattle Street prior to the changes		
Can you comment on why you chose that response? _____ _____		
Person is using an assistive mobility device: a. Wheelchair or mobility scooter b. Walker, support cane, crutches/forearm crutches, or similar c. Service dog for visual assistance d. Service dog for hearing assistance e. Service dog for mobility assistance f. Sighted guide g. White cane or similar h. Other: _____		

## Appendix B – Write-in/Descriptive Responses

### Q6. What is your overall opinion about the current design and function of Brattle Street? Why?

Write-in explanations provided, sorted by Q6 multiple-choice response

<b>Very satisfied</b>
Good safety. Better than Mass Ave. Quiet street.
It's great.
Ride my bike on it, love it!
Like BL, parking protection of bikes.
Good, biker friendly.
Protected BL.
Safe for bikes and therefore safe for pedestrians.
It can be improved.
Easier connectivity.
More non-motorized space. More education for motorists.

<b>Satisfied</b>
Like bike lanes, signs, no (Illegible).
Encouraged by attempt to keep cyclists safe.
Pavement on BL should be raised at crossing. Crosswalk as well.
Doesn't drive. BLs are good.
A little confusing, legit BL are nice (especially for roommate who bikes to work here).
Variety of stores/friendly atmosphere.
Safer.
Weird with bikes in 2-way vs. Cambridge 1 & 1, nice to be protected (best BL in cities).
Once you learn to use its an improvement.
Didn't mind before, understands risks as biker (need to be defensive rider, a "no rules" anti-social rider) - fun and transportation.
Confusing.
Fine for biking.
Makes it safer with BL.
New design doesn't interfere.
Don't drive or bike, traffic runs smoothly.
Good idea worth a try, like protection from parked cars, safer.
Bike good. Hard for parking.
Need more loading.
Hates parking.
Need to be careful about bicycles.
Like walking.
People jaywalk.

Like the area. Reluctant to park because confusing.
Seems to work. Little confusing, but fine.

<b>Neutral</b>
Seems a little slow.
I'm agnostic to it.
Foot traffic, not too affected.
New painting will take a while to get used to.
I don't drive, haven't heard complaint with one ways.
It looks funny/confusing especially near Brattle Square. 2-way BL unsure.
Parking confusing.
Unhappy with BL. Bad sight lines for everyone. 2-way on 1-way street is dangerous, confusing.
No different.
A little weird, but fine.
Not sure. Like bike lanes.

<b>Dissatisfied</b>
Parking & traffic.
Manager of shop. Bad for deliveries. Cars drive in bike lane.
A lot of cars parked in middle of street, reduced visibility.
Don't know how to bike/drive on this street, confusing.
Biking P.O.V.
Pedestrians [need] to be a lot more attentive...a lot more going on/more demanding.
Typically Cambridge motorists at risk by being struck by bikes to traverse after parking.
Sight line dangerous.
Hard to see crossing with parked cars.
Can't drive through easy.

<b>Very dissatisfied</b>
It got messed up, cars can't clear for emergency vehicles.
Confusing to tourists in car (cars enter BL from side streets). Meters on SW vs. parking, signage is unclear - ticketed, crossing need to look both ways.
"Tail is wagging the dog"...retail on street isn't served by design of 2-way bikes, truck turns are almost impossible, not thought through. Brattle people not consulted (key constituent).
No fire access. Bike right to Mason unsafe.
Very confused.

<b>Did not provide a multiple-choice response to Q6</b>
Too many coffee shops.

Like the formalization of 2-way riding.
Like bike accessibility, near accidents: cars turning right from church need to look right for bikes, trucks block signs for 2 -way bikes.
Not another bank.

### Q11. Other comments

Better job informing people. Please don't look for bikes. More signage on approaches.
Need signage to tell pedestrians crossing Brattle to look both ways. Need to prevent illegal parking near interactions, which restricts fire truck turns.
As driver, worried about visibility in narrow lane. People out across, no room to swerve/avoid.
Too many banks. More places to buy style items. Grocery store.
In favor of bike lanes, but only walk through area. Hasn't affected me a lot.
Bike lanes are great. Wish they were "European" (read: permanent/raised) style, but realizes that's \$\$.
I drive less on Brattle since changes. If it encourages less people to drive then that's ok.
Suppose that the changes are progress. It's a start.
Overall more 2 hour parking instead of no parking. Bike lanes should be in middle.
Like the Brattle bike lane. Don't like the Cambridge lanes - they make buses late. Hard to catch a bus.
Good to formalize 2-way riding. Need more signage to raise awareness of drivers and pedestrians to 2-way bike traffic.
Affected some customers. Gotta be more aware of surroundings. Tough for unloading.
Even with a bike lane, I'm scared I'll get hit. Agnostic to changes as a pedestrian.
Cars in the way, but I can live with it.
Need to be careful crossing getting hit by bikes. Near ART - older people not familiar with it and danger of bikes while crossing.
Age - pavement quality becomes a hazard.
Parking causes backups with 1 lane, no big deal - quiet street.
Having bikes from both sides and cars parked in middle of street (moving or not) is confusing, mixing in this fashion may not be the right way.
Even though not a bike rider, better for bikers, motorists, and pedestrians. Need to learn to give space. Easier to park (not sure why) in central line.
Worst idea, lack of meter is losing money for town. Most vehicles (i.e.: The Ride) lets out on right side. Can't align without getting hit by bikers. Bikers can be rude.
Really happy regardless of mode of transport.
Getting used to looking out for different modes.
Less parking, more loading, congestion with parked vehicles pulling in/out and 1 lane.
More biking parking, it's good!
Love this street, old building (e.g.: Longfellow House).
Harder to find parking, crowding with cars and biking.
Very cautious while driving. Less parking - harder to access, take people time to get used to, nice bikes not on SW and feel safe.
Less jaywalking.

Hard to step off curb and see cars, not looking for bikes in both directions, much more unsafe for pedestrians worse for cars.
Cambridge is doing the right thing by trying new things.
Wish they would have told residents. Line of sights don't... ..need public outreach. It can still be fixed.
Need to make sure sight lines are good for [right-turning] cars.
Need more parking.
Distinct smell of marijuana.
Safer.
As a visitor, 2-way BL is confusing.
Confusing with opposite way bikes. Could close down for just pedestrians in the Summer. Need for dog friendly places.
Foolish, dumbest thing he's ever seen.
Very wide.
It's great!
Why another bank?
A little confusing, but fine overall.
Like to walk on bike lane because easier on feet because of cobblestone streets.
Fine.
Parking is weird.
Overpriced.
Not enough bikes riders. Peace love and ride bikes.