



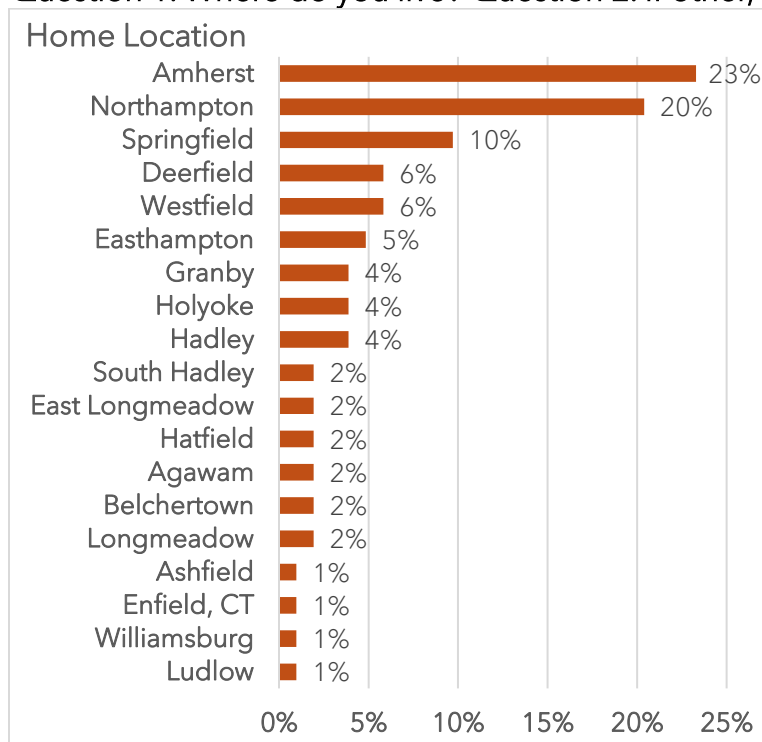
APPENDIX H: BICYCLE AND PEDESTRIAN TRAVEL SURVEY ANALYSIS

Bicycle And Pedestrian Travel Survey Analysis

PVPC conducted a Bicycle and Pedestrian Survey to assess the active travel habits and needs of residents of the Pioneer Valley region. This survey was made available in paper format at community public outreach events as well as in digital form online on the website page dedicated to the plan. An image copy of the survey is included at the end of this Appendix. The following is a listing of the questions asked in this survey questionnaire and a summary of the answers received. A total of 103 completed survey were received. This appendix includes further analysis of data gathered from the survey. It delves deeper to complement what was shared in Chapter 4.

The first two questions were about home location. A respondent was able to select any of the 43 communities in the region or write in an answer for another community outside the Pioneer region that is comprised of Hampshire and Hampden counties. Three respondents did not indicate their home location.

Question 1. Where do you live? Question 2. If other, where do you live?



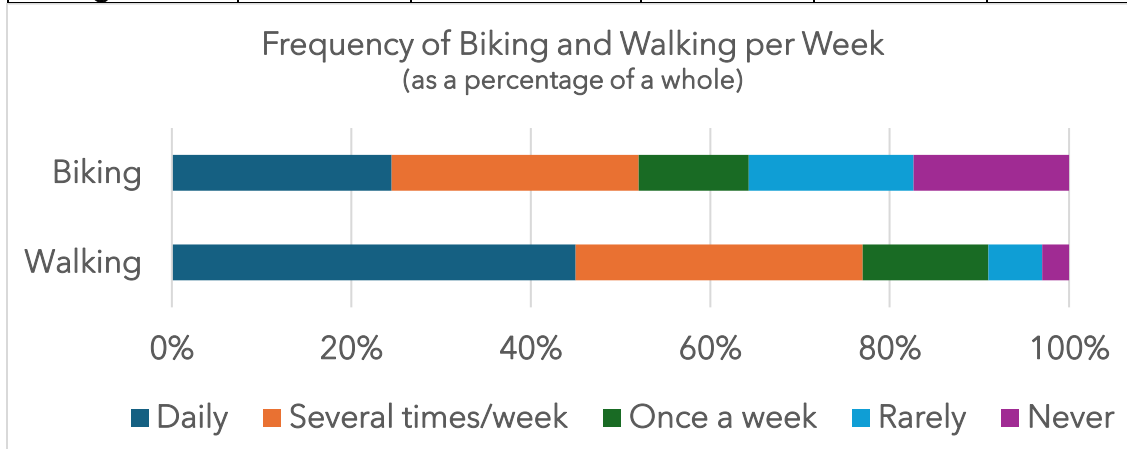
The chart figure above shows the percentage of respondents from different communities around the Pioneer Valley and surrounding areas. The greatest number of respondents to this survey resided in the communities of Amherst and Northampton, 43% combined. The largest community in the valley, Springfield, had only 10% respondents. The majority of respondents were from Hampshire County in



the upper valley at 63%, whereas 26% came from Hampden County in the lower valley. It is interesting to note that 7% were from Franklin County to the north.

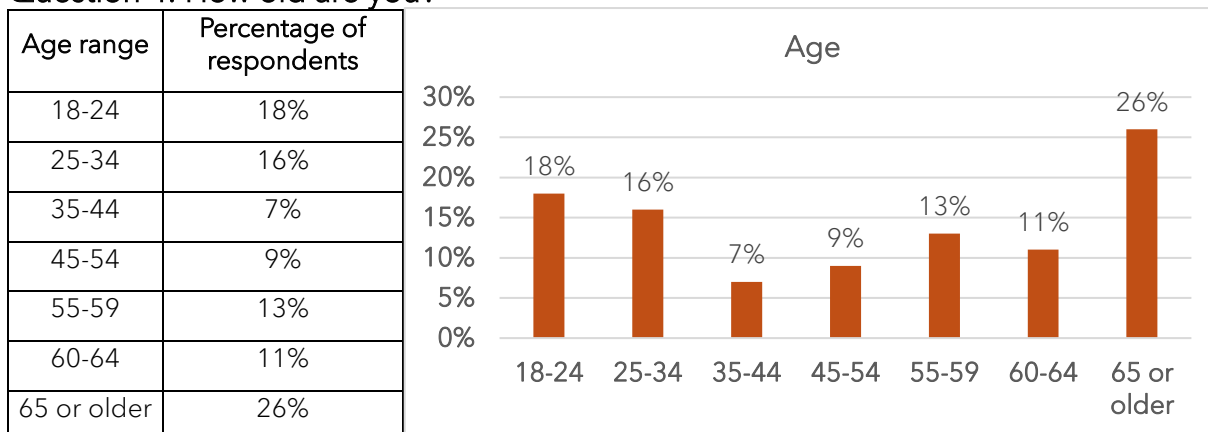
Question 3: How often do you travel by each mode?

	Daily	Several times per week	Once a week	Rarely	Never
Walking 	45%	32%	14%	6%	3%
Biking 	24%	28%	12%	18%	17%



When asked how often respondents traveled by foot and by bike, the results showed a trend of more trips being made by walking than by cycling. Almost half of respondents walked daily, 45%, whereas a quarter of respondents biked daily at 24%. About a third of all respondents either biked or walked several times per week. The survey data shows that most respondents had active travel habits. This is to be expected as many of the in-person outreach events were conducted at bike-friendly and outdoor pedestrian zone events. Furthermore, respondents are much less likely to report that they never walk at 3%, compared to the 17% of respondents said they never biked.

Question 4: How old are you?





A quarter of respondents, 26%, were 65 years or older. Those under the age of 35 capture a third of the sample, at 34%. Those between 35 and 65 years of age make up the remaining 40% of the sample.

Question 5: How do you identify?

Male	49%
Female	44%
Non-Binary/Third Gender	5%
Prefer not to say	3%

There were slightly more male respondents than female respondents in the sample.

Question 6: What is your race and/or ethnicity?

Race	Percentage of respondents
White	90%
Asian	9%
Black or African American	2%
Middle Eastern or North African	1%
Hispanic or Latino	1%
Another Race	1%
American Indian or Alaskan Native	0%
Native Hawaiian or Other Pacific Islander	0%

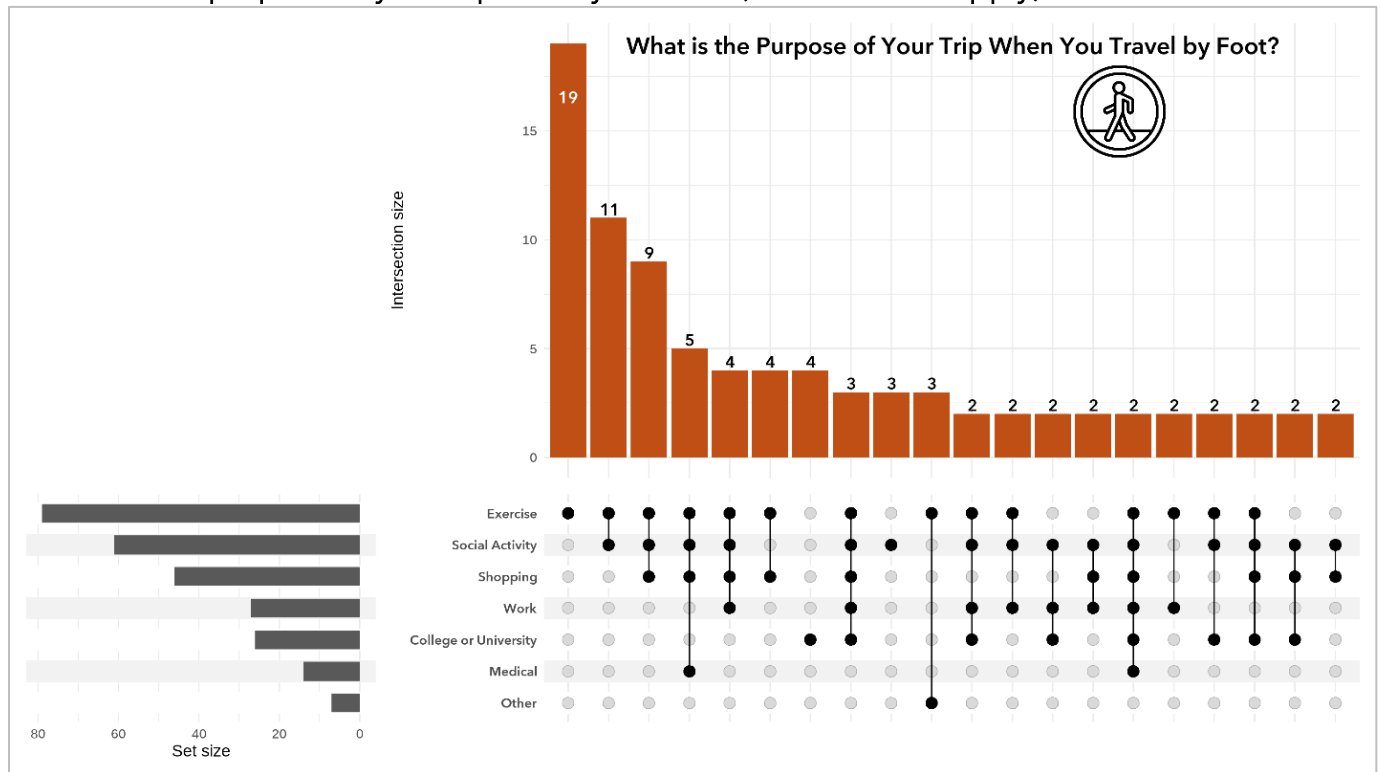
Most respondents identified as white, at 90%. Out of those who identify as white, 4.3% also identify as another race. Note: respondents could select more than one race, therefore percentages sum up to over 100 percent. The non-white categories combined total 14% and thus represent the percentage of participating people of color.



Respondents were also asked about their purposes for taking trips by foot and by bike. They were able to select more than one destination. The choices were work, shopping, medical appointments, social activity, exercise, grade school, and college or university. Respondents were also given an “other” option where they could write in another destination.

A form of a cross tabulated data chart called UpSet plot were used to analyze the survey data further. The UpSet plots offer an intuitive way to visualize multiple answers to the same question by each respondent. This offers interesting insight into travel behaviors and attitudes where respondents may have chosen more than one answer to a question. They are effective in showing the responses of each individual option, known as sets, and the specific combinations of responses that were found; these are known as intersections. The following UpSet plots show the various combinations of responses that were received. The dots in the lower panel correspond to the orange colored bars right above.

7. What is the purpose of your trip when you walk? (Check all that apply)

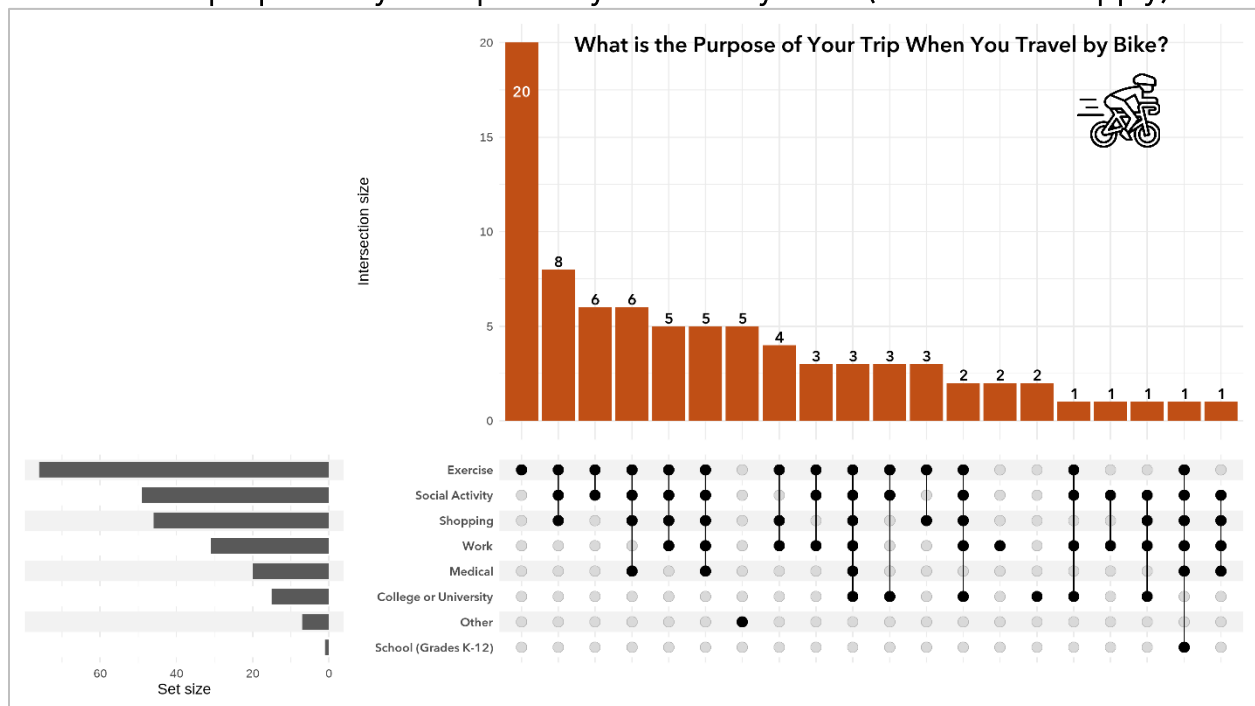




When asked about the purpose of their walking trips some respondents chose multiple types of activities. The preceding chart Figure shows that 19 respondents chose exercise alone as their reason for traveling by foot; this was the most popular response. However, 11 respondents chose a combination of exercise and social activity, while another 9 respondents added shopping to their response. In the bottom-left side of the chart the horizontal bars show that exercise was the most common response to this question, followed by social activity and shopping. For clarity, only the first 20 combinations are shown.

The next chart Figure below shows the combination of answers for the question about trip purpose of travel by bike. Just as in the walking chart, the three most frequent responses are exercise, social activity, and shopping. Here, 20 respondents responded with exercise only; another 8 responded with the combination of exercise, social activity, and shopping. Whereas 6 respondents chose a combination of exercise and social activity. Only the first 20 combinations of trip purposes are shown.

8. What is the purpose of your trip when you travel by bike? (Check all that apply)



The preceding two plot charts show that the greatest number of non-motorized trips are being made for pleasure and entertainment. In almost every set, exercise is included. This shows the significance of walking and biking in the respondents' everyday lives for their overall wellbeing. The main finding of the plots is that most users mentioned exercise and recreation in their responses, indicating that leisure

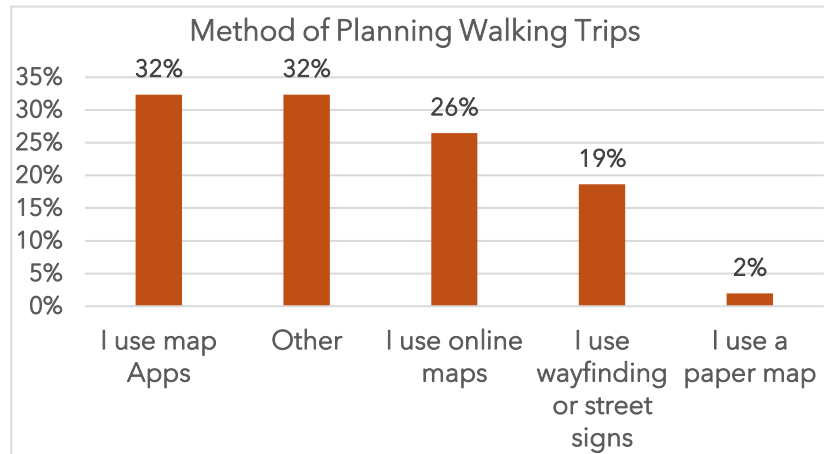


activity is the most common reason for walking and biking, while work and school were less common responses.

The most frequent write-in responses to the question “what is the purpose of your trip when you travel by foot?” were dog-walking and exposure to nature. Write-ins for the same question pertaining to cycling received responses like ‘enjoyment’, ‘unwinding’, and ‘fun’.

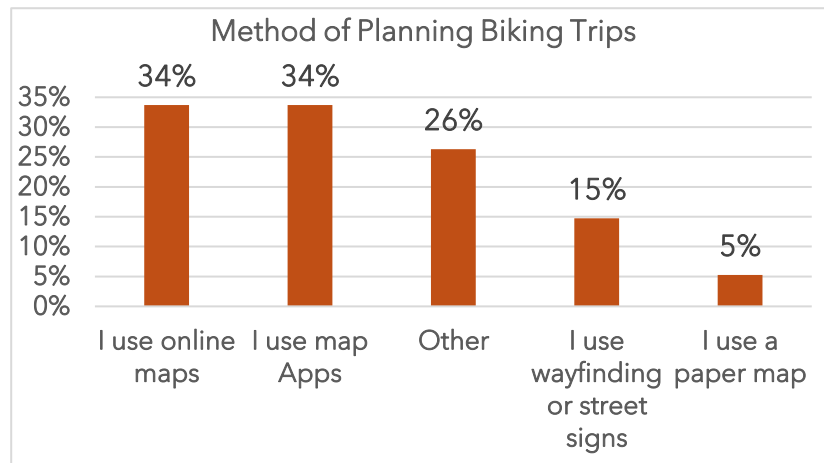
Question 9. How do you usually plan your walking trips?

I use map Apps	32%
Other	32%
I use online maps	26%
I use wayfinding or street signs	19%
I use a paper map	2%



Question 10. How do you usually plan your biking trips?

I use online maps	34%
I use map Apps	34%
Other	26%
I use wayfinding or street signs	15%
I use a paper map	5%



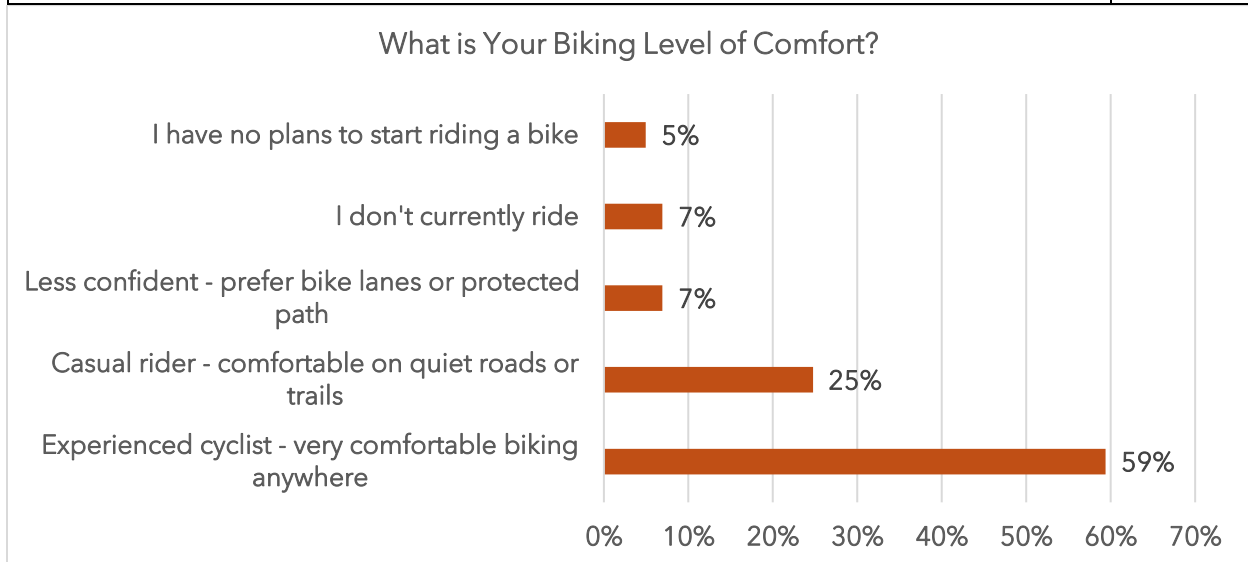
Respondents were then asked about their usual methods for planning their walking and biking trips. Respondents had the opportunity to choose more than one answer for this question. A third of responses to the question about how they planned their walking trips were “I use map apps”. Another third chose the “Other” category. Most respondents who chose “Other” said that they did not plan, or that they knew their routes well enough so that they do not need to plan. When the same question was asked about how they planned their biking trips, respondents’ most frequent responses were a tie between “I use online maps” and “I use map Apps,” at 34% of



responses each. Combined, these two categories add up to 68%. Thus, two thirds of respondents rely on digital mapping tools to plan their biking trips

11. What is your biking level of comfort?

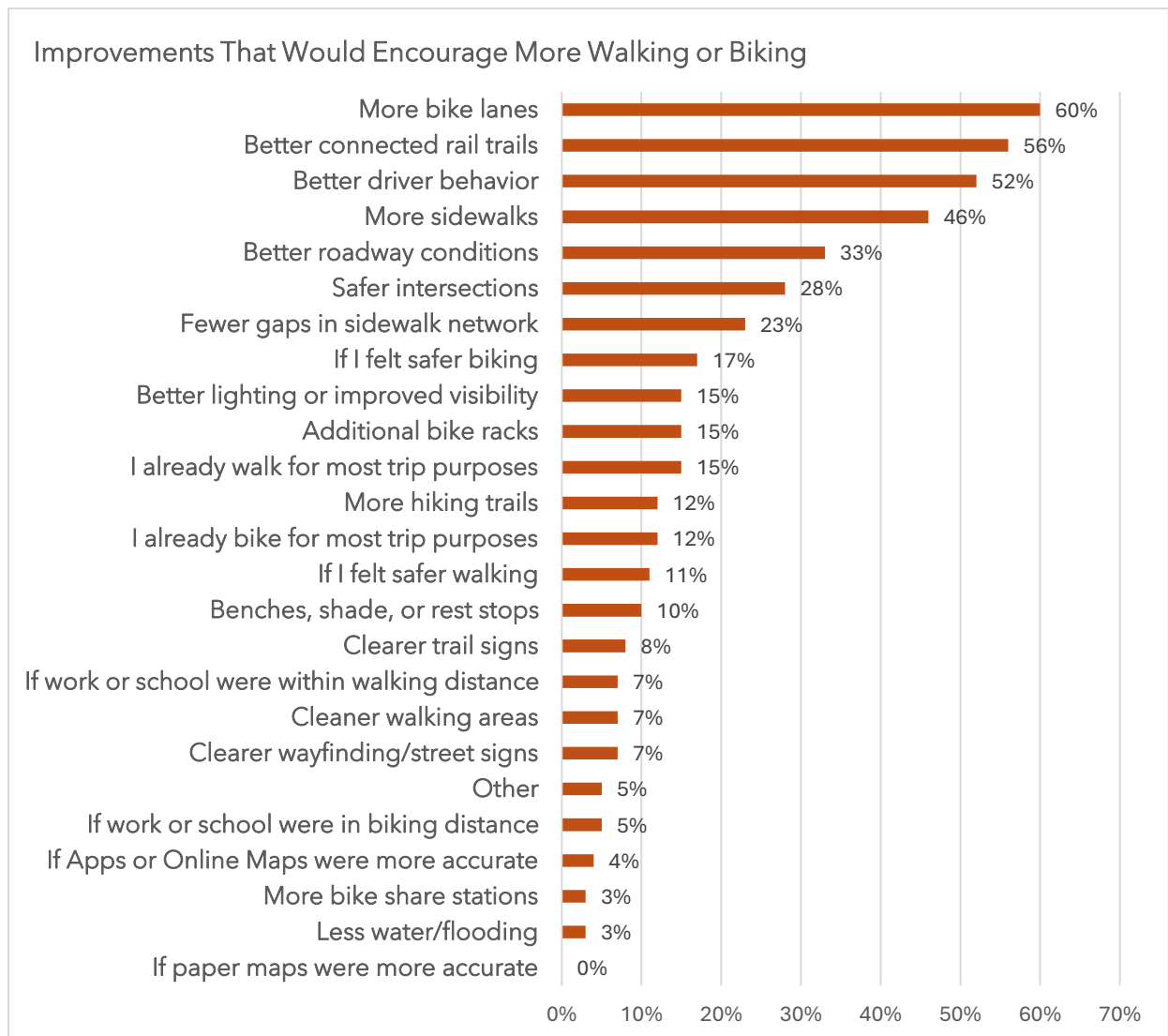
Experienced cyclist - very comfortable biking anywhere	59%
Casual rider - comfortable on quiet roads or trails	25%
Less confident - prefer bike lanes or protected path	7%
I don't currently ride	7%
I have no plans to start riding a bike	5%



Respondents were asked about their level of comfort while riding a bicycle. A total of 59 percent of respondents reported that they are experienced cyclists and feel very comfortable riding a bike in any setting. A quarter of respondents reported being a casual rider, while 12 percent do not ride at all.



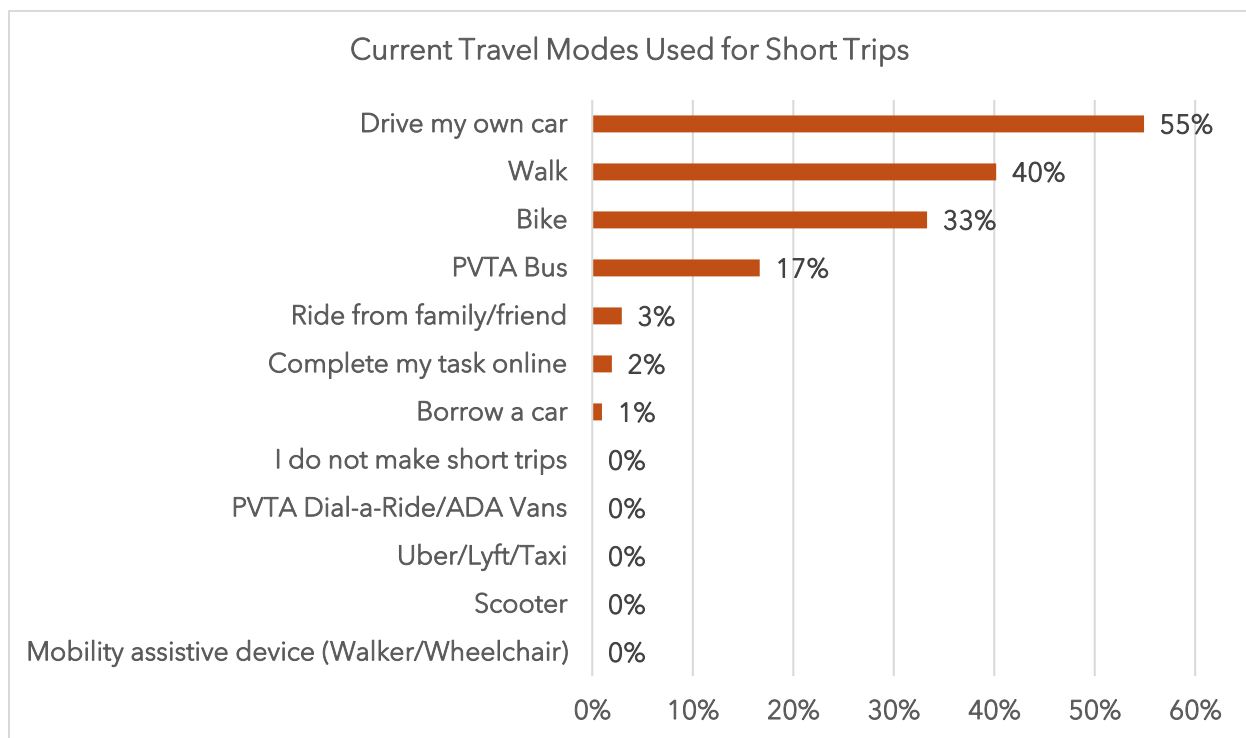
12. Would you walk or bike more often if any of the following were true?



When asked about improvements that would encourage the respondents to walk or bike more frequently, they were given 24 possible options to select from, with multiple selections being allowed. One of these options was an “Other” category. Based on the results of this question, it is seen that more bike lanes and better rail-trail connectivity are the most important factors to encourage more active trips by walking or biking for the surveyed population. Concerned about safety, many respondents also voiced that roadway conditions and driver behavior are reasons why they are not comfortable walking or biking more often. Pedestrians would like to see more sidewalk connectivity in their communities. The most popular write-in response was ‘more free time’. A full list of responses is shown in the chart above.

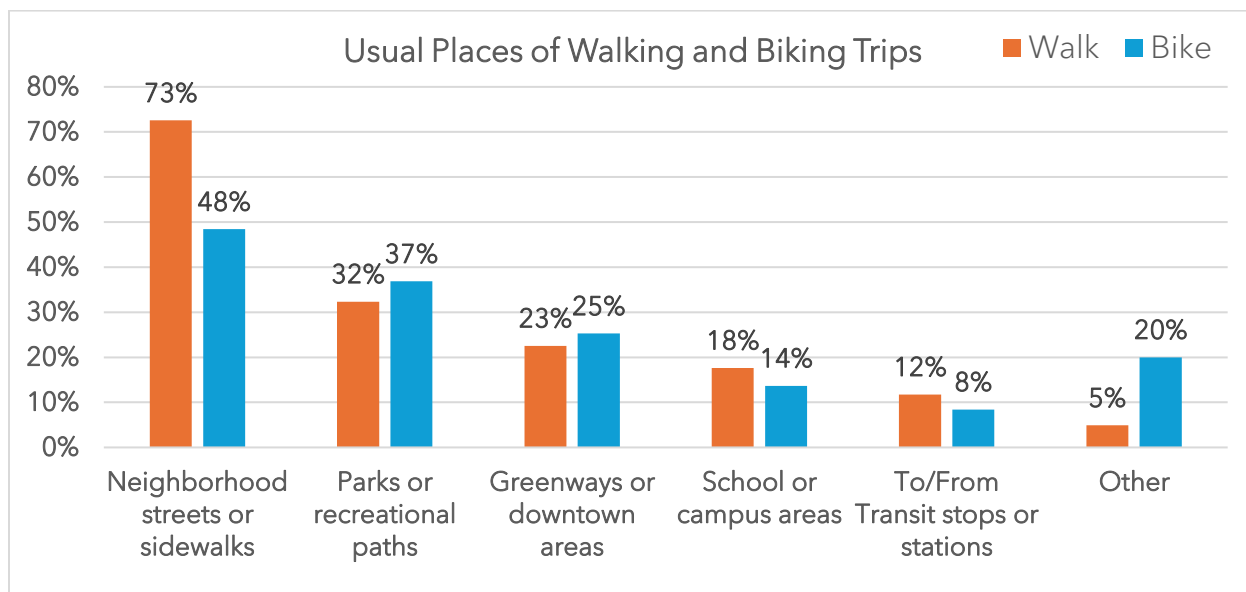


13. How do you currently get to nearby destinations?



The above question pertains to users' current mode of choice for most short trips. When asked 'How do you currently get to nearby destinations', over 50 percent mention driving their own car as one of the ways that they get around. Walking and biking are also popular modes among the respondents surveyed.

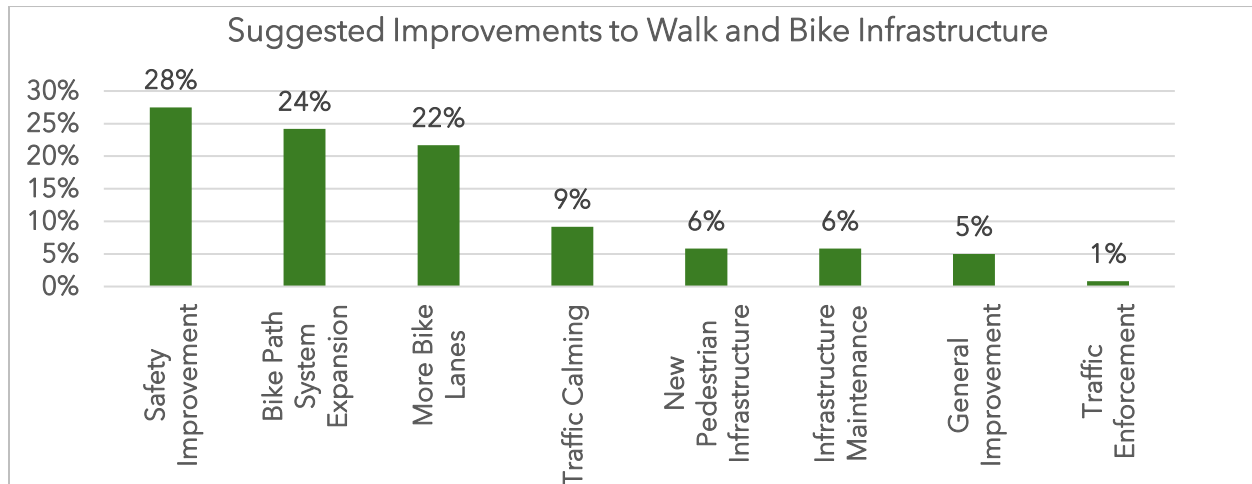
14. Where do you usually walk? 15. Where do you usually bike?





The preceding two questions aim to show the popular destinations of those walking or biking. Most respondents voiced that they walk on neighborhood streets or sidewalks. Most chose multiple selections for the walking question. However, respondents were less likely to select multiple options for the biking question. There was no write-in capability for these questions.

16. Where would you like to see improvements to the existing walk or bike infrastructure? (Please specify location and include city/town)



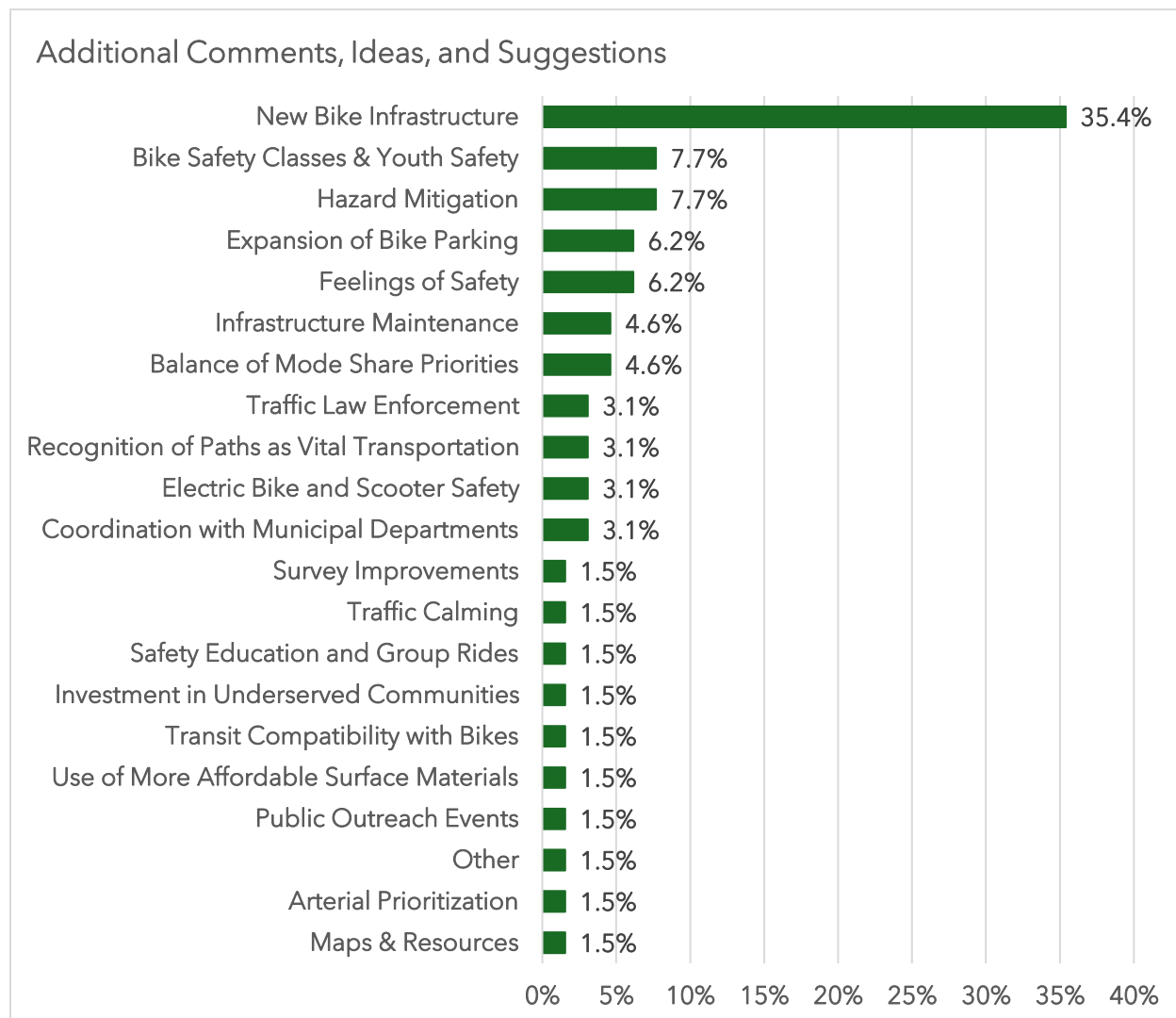
This was the first of two open-response questions that allowed respondents to comment on what specific improvements they would like to see in the Pioneer Valley pertaining to walking and biking. The greatest number of respondents mentioned specific areas where they would like to see general safety improvements, which might include features that make a street more comfortable to walk or bike on. Out of the 28 percent of responses related to Safety Improvements, Amherst had the most mentions, followed by Hadley and Springfield. Another combined 46 percent of responses related to bicycle infrastructure, including in the form of bike lanes, as well as expansion and connectivity of the bike paths in the region. Northampton, Westfield, Springfield, and Amherst were the most frequently mentioned communities by those who responded with bike infrastructure. This outcome is tied to the answers received to the first question about home location as it is expected that respondents from these communities would like to see improvements where they live. Other frequent responses included traffic calming measures, and sidewalk construction and maintenance. Overall, respondents noted their desire for increased bicycle and pedestrian infrastructure while emphasizing that connectivity issues persist throughout the region. Connecting existing facilities and adding new facilities would have a beneficial effect on their likelihood to walk or bike. The table on the next page contains the data gathered from answers to this question.



	Safety Improvement	Bike Path System Expansion	More bike lanes	Traffic Calming	New Pedestrian Infrastructure	Infrastructure Maintenance	General Improvement	Traffic Enforcement	Community Total
Agawam	1	1	0	0	0	0	0	0	2
Amherst	10	1	3	2	1	2	0	0	19
Brattleboro, VT	0	0	0	0	1	0	0	0	1
Chicopee	0	1	0	1	0	0	0	0	2
Deerfield	1	0	1	0	0	0	0	0	2
East Longmeadow	0	1	1	0	0	0	0	0	2
Easthampton	1	1	0	0	0	0	0	0	2
Enfield, CT	1	0	0	0	0	0	0	0	1
Feeding Hills	1	0	0	0	0	0	0	0	1
Florence	0	0	1	0	0	1	0	0	2
Goshen	0	0	1	0	0	0	0	0	1
Greenfield	1	0	1	0	0	0	0	0	2
Hadley	4	1	1	0	1	0	0	0	7
Hatfield	0	2	0	0	0	0	0	0	2
Holyoke	0	1	1	0	0	0	0	0	2
Leeds	0	0	0	0	0	1	0	0	1
Northampton	2	4	5	1	0	0	0	0	12
Not Specified	1	6	5	2	3	2	6	1	26
Pelham	1	0	0	0	0	0	0	0	1
Shelburne Falls	0	0	1	0	0	0	0	0	1
South Deerfield	0	0	1	0	1	0	0	0	2
South Hadley	0	1	0	0	0	0	0	0	1
Southampton	0	2	0	0	0	0	0	0	2
Springfield	4	3	1	3	0	0	0	0	11
Sunderland	1	0	0	0	0	0	0	0	1
UMass	4	0	2	1	0	1	0	0	8
Westfield	0	4	0	1	0	0	0	0	5
Williamsburg	0	0	1	0	0	0	0	0	1
TOTAL	33	29	26	11	7	7	6	1	120



17. Do you have any additional comments, ideas or suggestions to improve biking and walking in our region?



The final question in the survey was also open-ended. Respondents were given the opportunity to discuss any other comments related to the improvement of walking and biking that they did not yet mention. Responses were incredibly varied, with the largest number of responses relating to the construction of new bike infrastructure for improved connectivity and safety. Other common responses included hazard mitigation related to cyclists' interaction with drivers, safety courses and the ability for youth to reach schools on foot and by bike, and the implementation of road features that improve feelings of safety for all road users.



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1) Where do you live?

() City/Town: _____

2) If other, where do you live? _____

3) How often do you travel by each mode?

	Daily	Several times per week	Once a week	Rarely	Never
Walking	()	()	()	()	()
Biking	()	()	()	()	()

4) How old are you?

() Under 17

() 18-24

() 25-34

() 35-44

() 45-54

() 55-59

() 60-64

() 65 or older

5) How do you identify?

() Female

() Male

() Non-Binary/Third Gender

() Prefer not to say

() Other: _____

6) What is your race and/or ethnicity?

(Check all that apply)

☐ White

☐ American Indian or Alaskan Native

☐ Asian (Including Southern Asian/Pakistani/Indian)

☐ Black or African American

☐ Hispanic or Latino

☐ Middle Eastern or North African

☐ Native Hawaiian or Other Pacific Islander

☐ Another Race: _____

7) What is the purpose of your trip when you walk?

(Check all that apply)

☐ Work

☐ Shopping

☐ Medical

☐ Social Activity

☐ Exercise

☐ School (Grades K-12)

☐ College/University

☐ Other: _____

8) What is the purpose of your trip when you travel by bike? (Check all that apply)

☐ Work

☐ Shopping

☐ Medical

☐ Social Activity

☐ Exercise

☐ School (Grades K-12)

☐ College/University

☐ Other: _____

9) How do you usually plan your walking trips?

() I use a paper map

() I use online maps

() I use map Apps

() I use wayfinding or street signs

() Other: _____

10) How do you usually plan your biking trips?

() I use a paper map

() I use online maps

() I use map Apps

() I use wayfinding or street signs

() Other: _____

11) What is your biking level of comfort?

() Experienced cyclist - very comfortable biking anywhere

() Casual rider - comfortable on quiet roads or trails

() Less confident - prefer bike lanes or protected path

() I don't currently ride

() I have no plans to start riding a bike



Pioneer Valley Regional Bicycle and Pedestrian Survey 2020 (Page 2)

12) Would you walk or bike more often if any of the following were true?

- ☐ I already walk for most trip purposes
- ☐ I already bike for most trip purposes
- ☐ Better driver behavior
- ☐ More sidewalks
- ☐ More bike lanes
- ☐ Better connected rail trails
- ☐ More hiking trails
- ☐ Better roadway conditions
- ☐ Fewer gaps in sidewalk network
- ☐ Less water/flooding
- ☐ Additional bike racks
- ☐ More bike share stations
- ☐ Safer intersections
- ☐ Clearer trail signs
- ☐ Clearer wayfinding/street signs
- ☐ If Apps or Online Maps were better
- ☐ If paper maps were more accurate
- ☐ If I felt safer walking
- ☐ If I felt safer biking
- ☐ Better lighting or improved visibility
- ☐ Benches, shade, or rest stops
- ☐ Cleaner walking areas
- ☐ If work or school were closer
- ☐ Other: _____

13) How do you currently get to nearby destinations?

- ☐ Walk
- ☐ Bike
- ☐ Mobility assistive device (Walker/Wheelchair)
- ☐ Scooter
- ☐ Drive my own car
- ☐ Borrow a car
- ☐ Ride from family/friend
- ☐ Uber/Lyft/Taxi
- ☐ PVTa Bus
- ☐ PVTa Dial-a-Ride/ADA Vans
- ☐ Complete my task online
- ☐ I do not make short trips

14) Where do you usually walk?

- ☐ Neighborhood streets or sidewalks
- ☐ Parks or recreational paths
- ☐ Greenways or downtown areas
- ☐ School or campus areas
- ☐ To/From Transit stops or stations
- ☐ Other

15) Where do you usually bike?

- ☐ Neighborhood streets or sidewalks
- ☐ Parks or recreational paths
- ☐ Greenways or downtown areas
- ☐ School or campus areas
- ☐ To/From Transit stops or stations
- ☐ Other

16) Where would you like to see improvements to the existing walk or bike infrastructure?
(Please specify location and include city/town)

17) Do you have any additional comments, ideas or suggestions to improve biking and walking in our region?

Thank you for participating in our survey. Your response is very important to us.