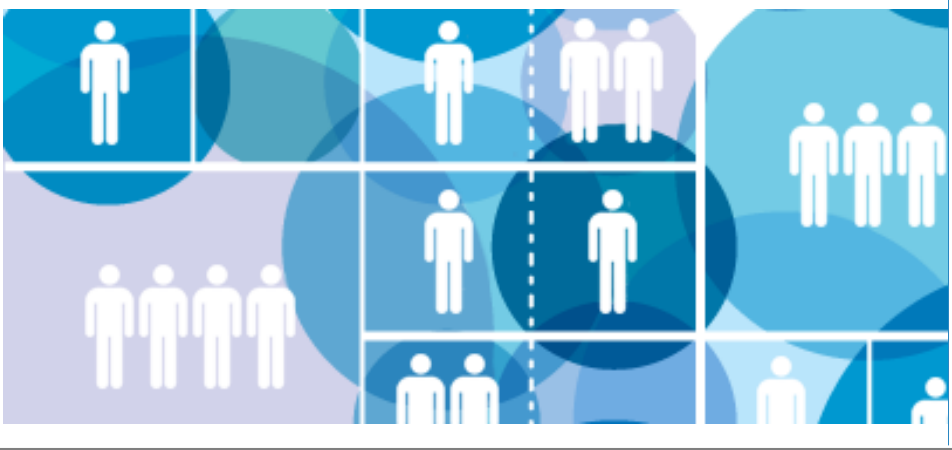
YMG

Yasamin Miller Group
Data Analytics & Survey Solutions



2018 Ithaca Bicycle Use & Attitudes Survey Summary Report

May 30, 2018

Submitted by:
Yasamin Miller
Managing Director
Yasamin Miller Group, LLC
44 Autumn Ridge Circle
Ithaca, NY 14850
Phone: 607.592.1067
www.YasaminMillerGroup.com

Table Contents

Introduction

The Yasamin Miller Group (YMG) was contracted to conduct the 2018 Ithaca Bicycle Use and Attitudes Survey of residents and students living within a five-mile radius of Ithaca, New York. The final survey that was administered to both target populations (residents and students) can be found in Appendix A.

How the Sample Was Selected

The 2018 Ithaca Bicycle Use and Attitudes Survey was a mixed mode, telephone and web survey of adults living in the Ithaca, New York area. A random sample of landlines and cell phone numbers was purchased from Marketing Systems Group (MSG) in Horsham, PA, targeting this geographic area. Each of these selected telephone numbers was called by an interviewer from a centrally supervised facility at the University of New Hampshire (UNH) Survey Center. If the number called was found not to be a residential one, it is flagged accordingly and not called again. If the number was a residential number, the interviewer then randomly selected a member of the household by asking to speak with the adult currently living in the household who has had the most recent birthday. This selection process ensures that every adult (18 years of age or older) in the household has an equally likely chance of being included in the survey. No substitutions were allowed. If, for example, the randomly selected adult is not at home when the household is first contacted, the interviewer could not substitute by selecting someone else who just happened to be there at the time. Instead, he or she must make an appointment to call back when the randomly selected adult is at home. In this way, respondent selection bias is minimized.

The web portion of the survey was distributed through various groups at Cornell University and Ithaca College in order to target the student population.

When the Interviewing Was Done

Household residents were interviewed between February 26 and March 5, 2018. Each selected respondent was called by a professional UNH Survey Center interviewer from a centrally supervised facility at the UNH Survey Center. Telephone calls during the field period were made between 9:00 AM and 9:00 PM. Web responses were collected using Qualtrics between March 12 and March 18, 2018.

Response Rates

Telephone interviews were completed with 250 adult residents in the Ithaca area from a sample of 7000 telephone numbers. For those numbers called and a confident outcome could be determined, the **response rate (RR) for the telephone portion** of the Ithaca Bicycle Use and Attitudes Survey was:

RR= 250/(250+142+37) = 58%

Call Outcome-Household Survey	N
Complete	250
Refused, eligible household	142
Pending	37
Physically unable	19
Household language problem	13
No Answer – unable to determine if resident	1445
Called less than 3 times, undetermined eligibility	2994
Bad number, fax machine, business	796
No adult (18+) in household	128
Not in geographic target area	276
Not available during data collection period	10
Refused at intro – unknown if eligible	864
Total	**7000**

Since the web survey was administered anonymously, it is unknown how many people were asked to participate in the survey. Those who participated via the web were then given a $10 e-gift card to Amazon. In total 132 surveys were completed via the web. In total, 382 people responded to the survey.

Data Analysis

When found statistically significantly different, the survey results are reported by student versus non-student as self-defined by the primary occupation question. Frequency distribution of the survey results overall are found in Appendix B, and the crosstabulation of survey results by student versus non-student are found in Appendix C. Results of valid unweighted responses are reported only.

Results

1) Demographics

For the purposes of this report, those who identified themselves as a student as their primary occupation will be referred to as the "Student" group, and those who did not identify themselves as a student as their primary occupation will be referred to as the "Non-Student" group. Since targeting students was intentional, the student group was younger than the non-student group, as expected.

Table 1 Age

Age (Years)	Overall		Student		Non-Student	
	N	%	N	%	N	%
18-21	101	26	96	72	5	2
22-24	33	9	28	21	5	2
25-29	6	2	1	1	5	2
30-34	9	2	0	0	9	4
35-39	22	6	3	2	19	8
40-44	21	6	1	1	20	8
45-49	23	6	0	0	23	9
50-54	20	5	0	0	20	8
55-59	24	6	0	0	24	10
60-64	28	7	0	0	28	11
65-69	31	8	0	0	31	13
70 or older	58	15	0	0	58	23
Did not answer	4	1	5	4	1	0
Total	**382**	**99**	**134**	**101**	**248**	**100**

*Note – percent totals may not add to 100 due to rounding

Although there are slightly more female study participants than male, the overall age distribution of men versus women (Table 2) is not significantly different.

Table 2 Age by Sex

Age (Years)	Male		Female	
	N	%	N	%
18-21	38	24	63	27
22-24	14	9	18	9
25-29	4	3	3	2
30-34	4	3	5	2
35-39	8	5	14	6
40-44	12	8	9	6
45-49	11	7	12	6
50-54	7	4	13	5
55-59	11	7	13	6
60-64	14	9	14	7
65-69	17	11	14	8
70 or older	21	13	37	15
Total	**161**	**103**	**215**	**99**

*Note – percent totals may not add to 100 due to rounding

One out of five (21%) of the participants reported having at least 1 child in the household who is 16 years of age or younger. There was no difference in reporting (of children in the household) by student or non-student status.

The annual income for household overall is reported in Table 3. Since students do not necessarily reside permanently in Ithaca, NY (and mostly only during the academic semester) it is difficult to compare household incomes across student/non-student respondents, since it's unclear how students defined their "household." It seems that some may have reported household income as their immediate family household income since a larger percentage of students reported household incomes over $100,000, while other students defined household as themselves only hence reporting only their personal income. According to the 2012-2016 American Community Survey from the US Census Bureau, the median household income in Ithaca, NY is $30,291 and the mean household income is $50,213.

Table 3 - Income

Annual Household Income	Overall		Student		Non-Student	
	N	%	N	%	N	%
Less than $15,000	29	9	20	16	9	5
$15,000-$29,999	24	8	6	5	18	10
$30,000-$44,999	28	8	6	5	22	12
$45,000-$59,999	36	11	15	12	21	11
$60,000-$74,999	43	14	16	13	27	14
$75,000-$99,999	35	11	9	7	26	14
$100,000 or over	121	38	54	43	67	35
Total	**316**	**99**	**126**	**101**	**190**	**101**

*Note – percent totals may not add to 100 due to rounding

According to the Bureau of Labor Statistics, the employment rate in Ithaca, NY is approximately 47% (https://www.bls.gov/eag/eag.ny_ithaca_msa.htm). Again, since students were purposefully targeted, the employment rate among study participants (41%) may under-represent the actual employment rate in Ithaca. See Table 4.

Table 4 – Employment Status

Employment Status	Overall	
	N	%
Employed (any type)	158	41
Student (undergrad/grad)	134	35
Stay-at-home	9	2
Retired	76	20
Unemployed	4	1
Total	**381**	**99**

*Note – percent totals may not add to 100 due to rounding

The student population is significantly more racially/ethnically diverse than the non-student population, with the majority (83%) of non-students self-identifying as white or Caucasian compared to only 48% of students (see Table 5).

Table 5 – Race/Ethnicity

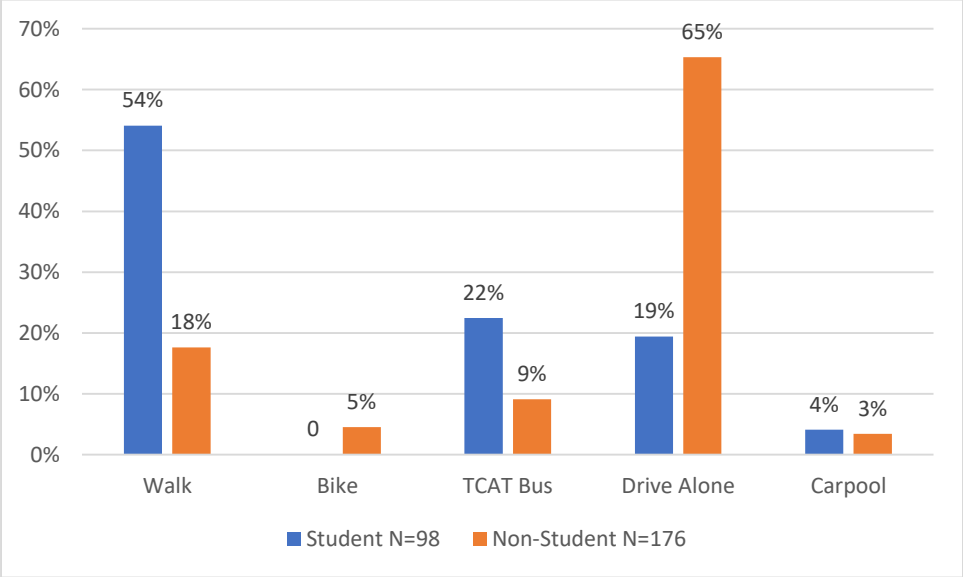
Race/Ethnicity	Overall		Student		Non-Student	
	N	%	N	%	N	%
American Indian/Native Alaskan	3	1	0	0	3	1
Asian or Asian American	43	12	36	28	7	3
Black or African American	15	4	7	5	8	3
Hispanic or Latino	19	5	15	12	4	2
Mixed Race	19	5	9	7	10	4
Other	8	2	1	1	7	3
White or Caucasian	259	71	63	48	196	83
Total	**366**	**100**	**131**	**101**	**235**	**100**

*Note – percent totals may not add to 100 due to rounding

2) Transportation Modes

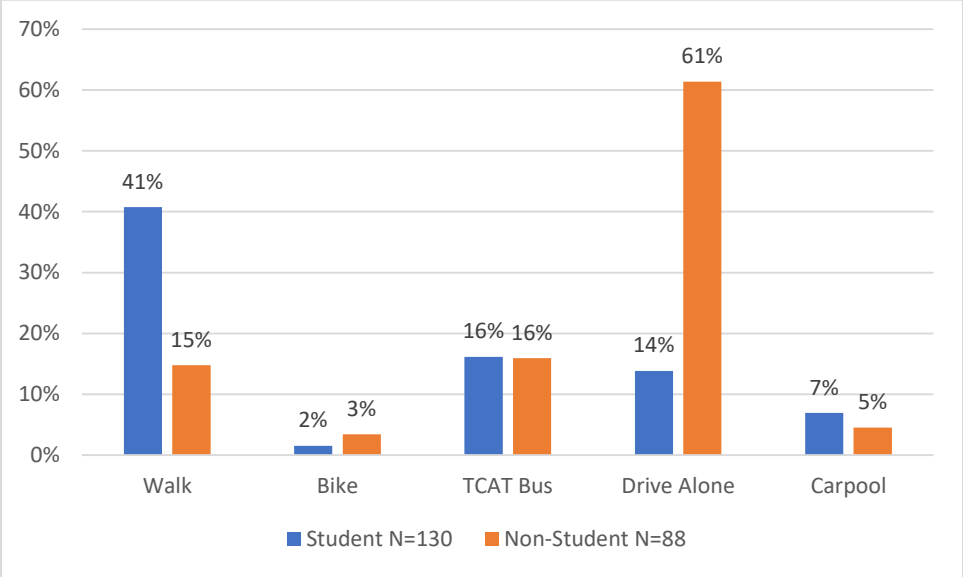
For those participants who work, they were asked what mode of transportation they are most likely to use to get to work. Interestingly, more than three out of four students (74%) also reported that they work. The majority of non-students (65%) drive alone to work, whereas the majority of students (54%) walk (see Figure 1). For comparison purposes, 26.9% walked, 2.2% bicycle, 11.4% took public transit, 44.5% drove alone, and 7.7% carpooled to work according to the 2012-2016 American Community Survey estimates from the US Census Bureau.

Figure 1 – Transportation Most Likely to use to get to Work



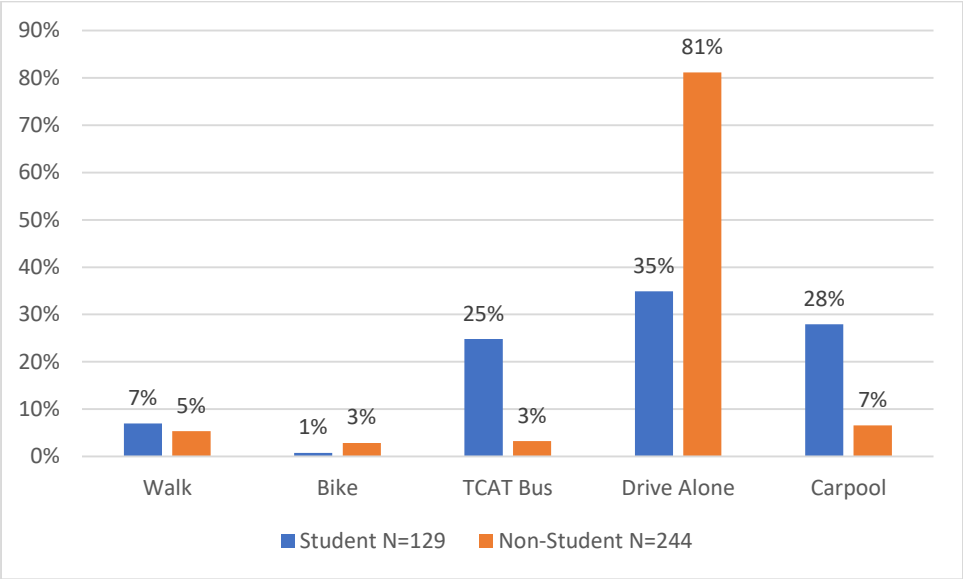
For those participants who go to school, they were asked what mode of transportation they are most likely to use to get to school. Again, there were non-students who also reported that they attended school (37%). The majority of non-students (61%) drive alone to school, and the plurality of students (41%) walk (see Figure 2).

Figure 2 – Transportation Most Likely to use to get to School



When asked what transportation they are most likely to use for personal or family errands, the non-students overwhelmingly reported driving alone (81%, see Figure 3). The students have no one overriding mode, rather they reported about equally that they drive alone (35%), carpool (28%) and use TCAT (25%). Across the three trip types surveyed, students bicycled less frequently than non-students.

Figure 3 – Transportation Most Likely to use for Personal and Family Errands

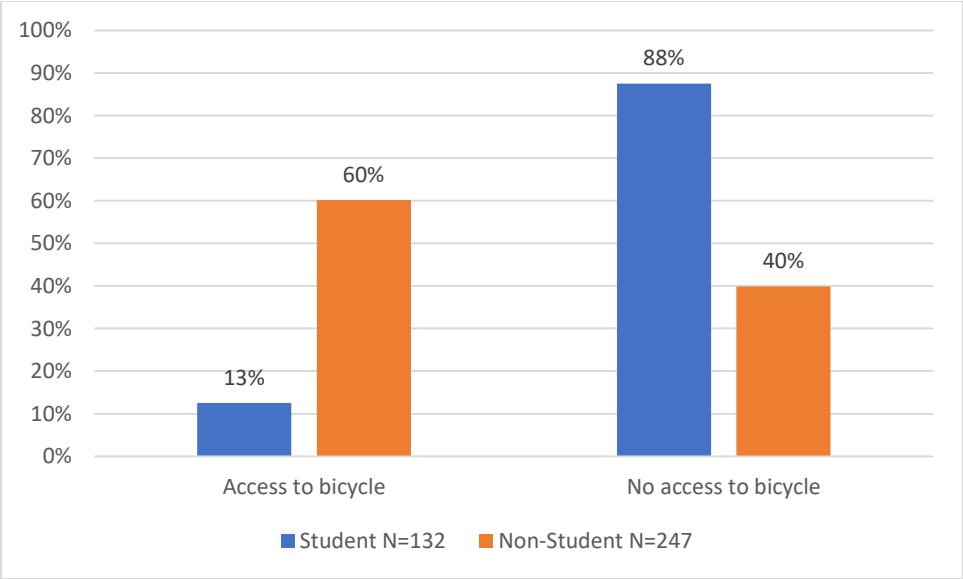


3) Cycling Behavior

Access to Bicycles

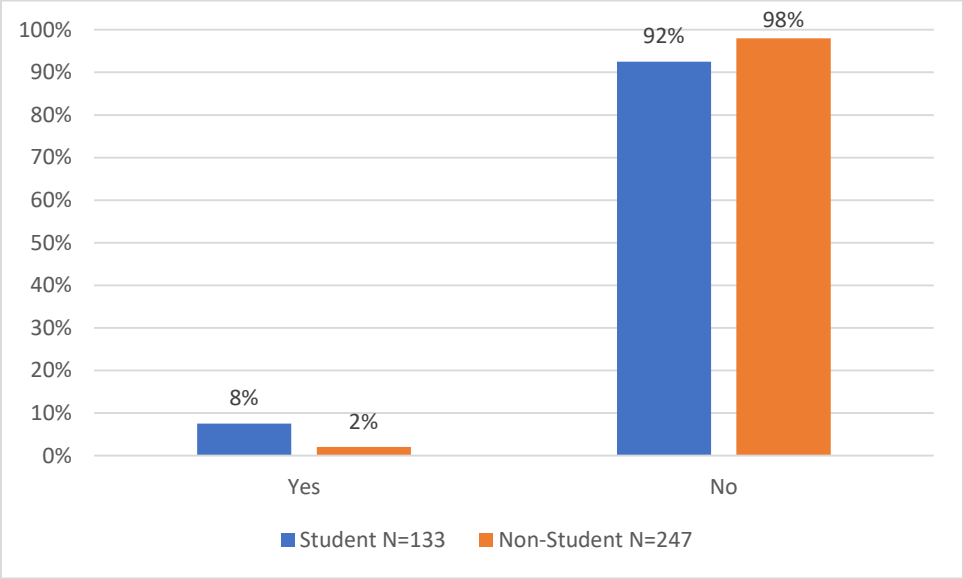
Two out of three (60%) of the non-students have regular access to a working bicycle, and only one out of eight (13%) of the students have such access (see Figure 4). Students, who are primarily coming from out-of-county locales, may find it difficult to bring a personal bicycle with them to college.

Figure 4 – Regular Access to a Working Bicycle



Students are more likely to have used Zagster/Big Red Bikes, a bikeshare system existing at Cornell during the survey period compared to non-students (see Figure 5).

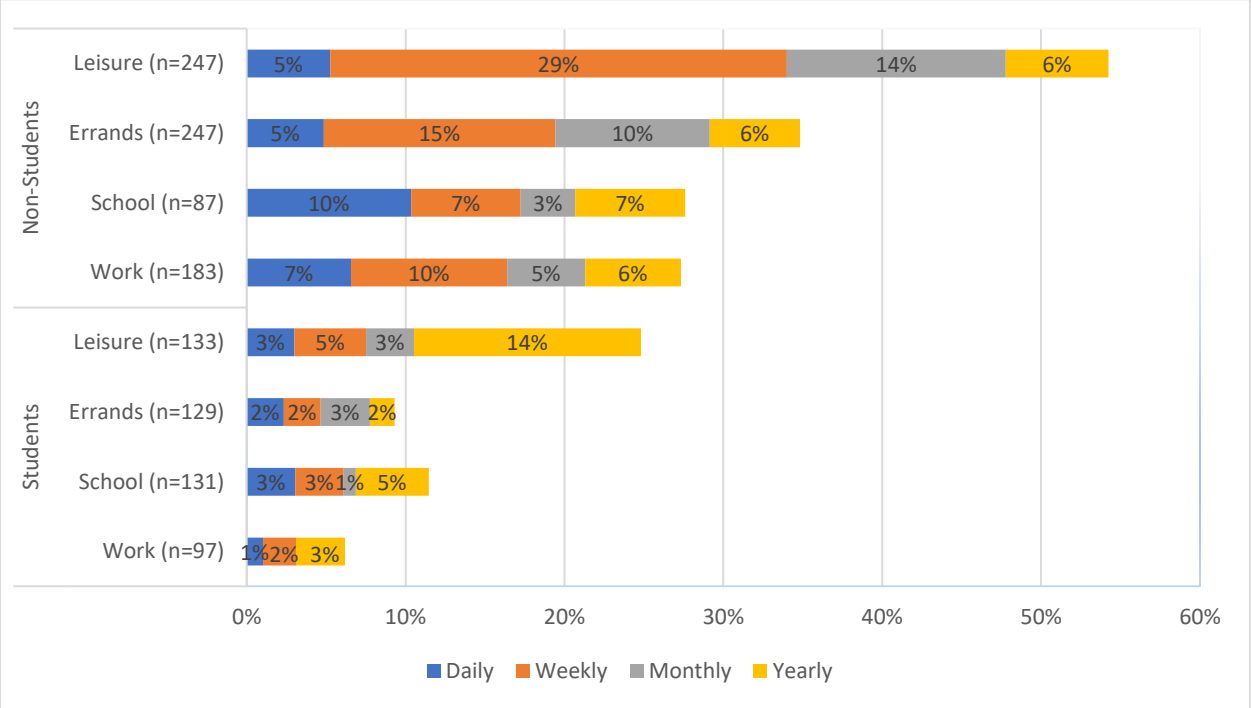
Figure 5 – Used Zagster/Big Red Bikes



Cycling in Warmer Months

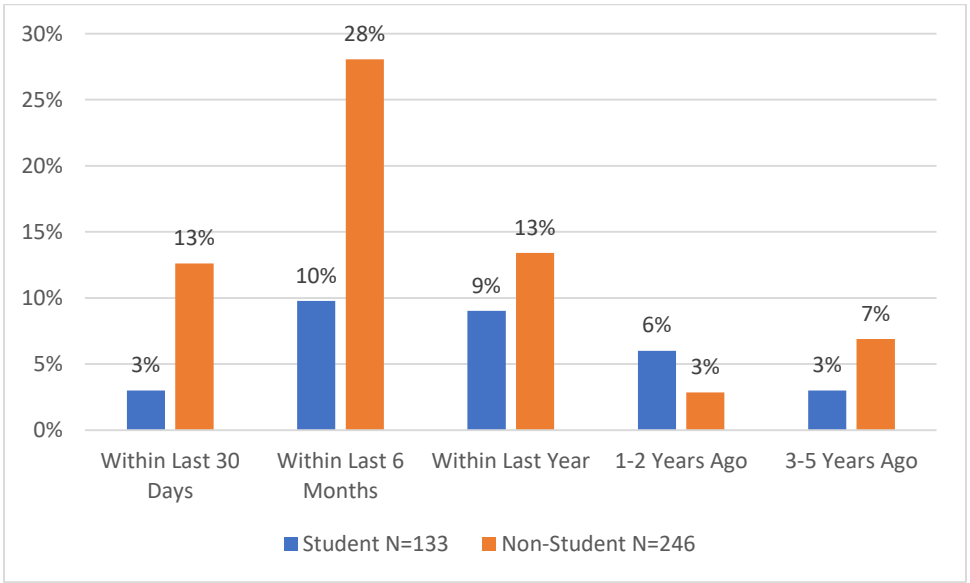
Study participants were asked how often they ride a bicycle during warmer months in and around Ithaca to get to work, get to school, for personal or family errands, and for recreation or exercise (leisure). They were offered options of reporting that they ride their bicycles at least once a day, at least once a week, at least once a month, at least once a year or never. Figure 6 summarizes the frequency of riding a bicycle during warmer months by type of trip for students and non-students. Non-students are more likely to ride a bicycle at any time compared to the students. This is not surprising since many of the students typically do not remain in Ithaca during the warmer months and also have lower rates of access to a working bicycle. At least one-third (34%) of non-students ride bicycles weekly or daily during warmer months for leisure, and 20% ride weekly or daily for errands.

Figure 6- Students vs Non-Students: Frequency of Riding Bikes During Warmer Months



Over half (54%) of non-students rode their bikes in and around Ithaca over the last year, with a plurality of non-students saying they rode a bike in the last 6 months or within the last 30 days of the survey interviews, which were conducted in late February (see Figure 7).

Figure 7 – Last Time Rode a Bicycle in and Around Ithaca



Comfort Level with Bicycling

Participants were asked if they were travelling by bicycle on their own, how comfortable would they feel biking in the following environments on a scale of 1 to 4, where 1 is very uncomfortable and 4 is very comfortable:

"On almost any street regardless of traffic conditions."

"On major streets, provided they have painted bicycle lanes."

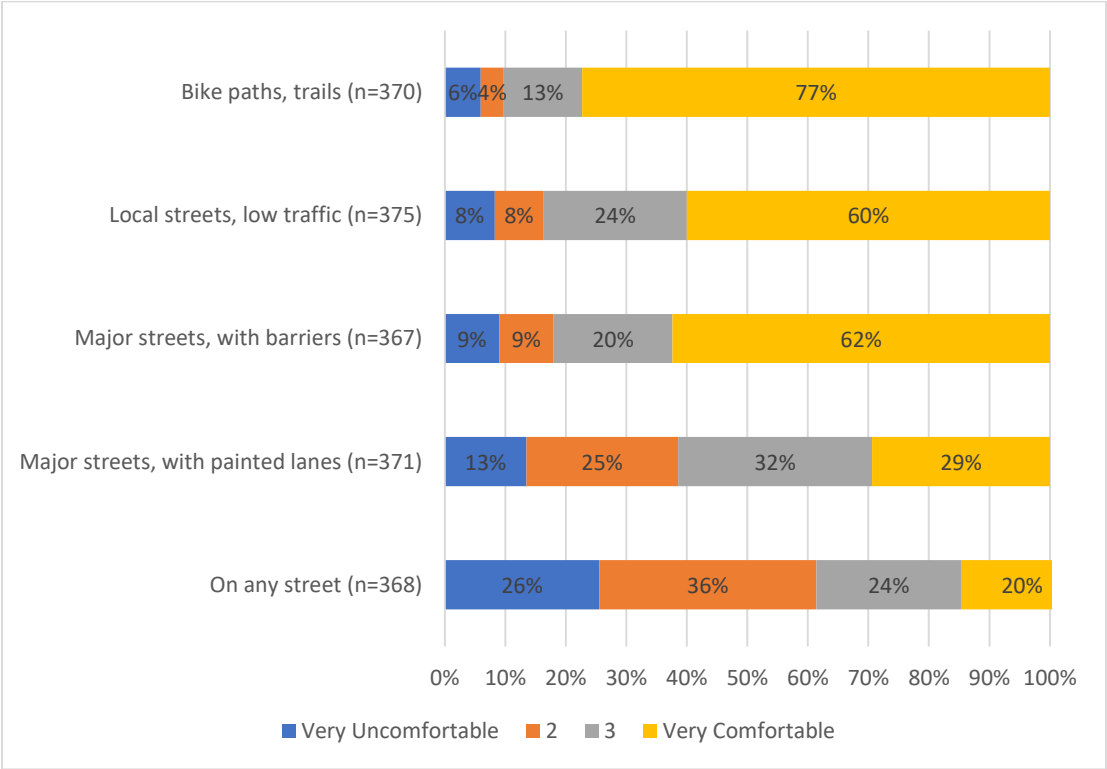
"On major streets, provided they have bicycle lanes separated from traffic with a physical barrier."

"On local neighborhood streets with little traffic and low speeds."

"On bicycle paths or trails separate from the street."

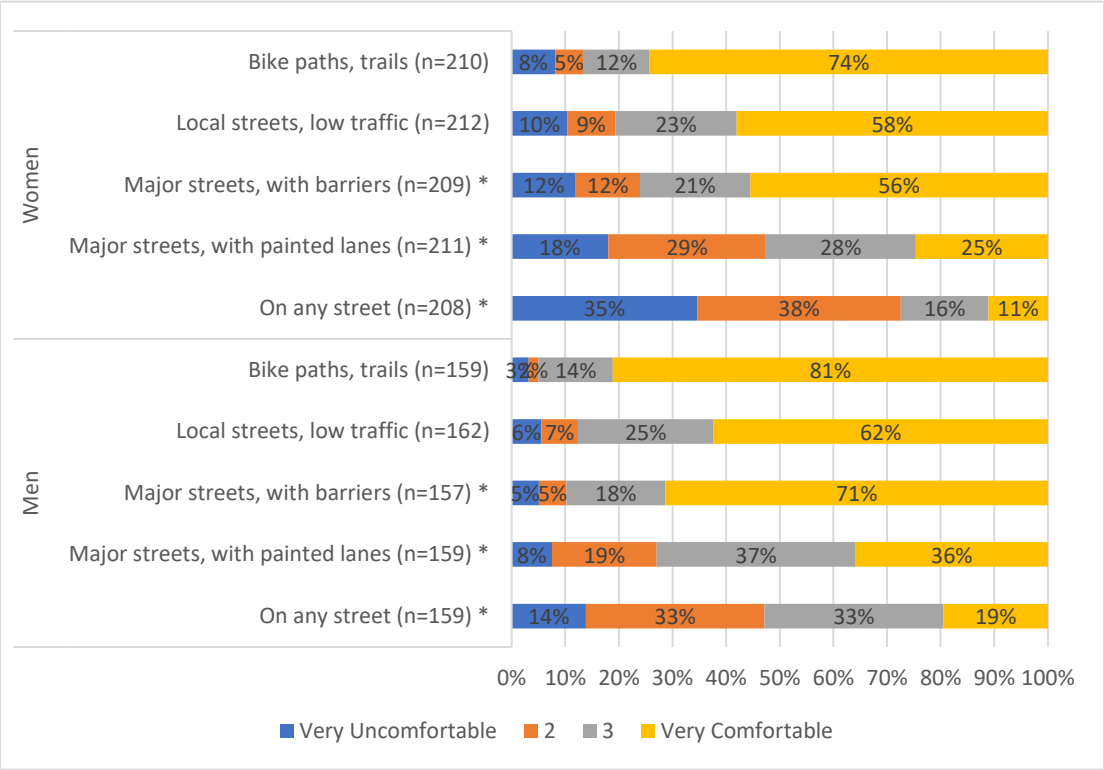
The comfort level of study participants decreased as the biking infrastructure was less segregated from vehicular traffic (see Figure 8), and there was no significant difference in level of comfort between students and non-students. Survey participants are least comfortable riding on any street regardless of traffic condition, with almost two out of three (62%) of the participants giving a rating of 1 or 2. A majority of people (61%) felt comfortable or very comfortable (rated 3 or 4) on major streets with painted bike lanes. However, an overwhelming majority found major streets with physical barriers (82%) and local streets with low traffic (84%) more comfortable than painted lanes. Almost all participants (90%) are comfortable or very comfortable riding on bike trails or paths separated from the street.

Figure 8 – Comfort Level Bicycling on Various Types of Venues



When looking at the comfort level by sex, women tend to generally be a bit more conservative and hence less comfortable riding in venues that are less protected from traffic compared to men (see Figure 9). This difference in comfort is most evident and statistically significant in the "on any street" and "major streets with painted lanes" scenarios. Whereas a majority of men (52%) said they were comfortable or very comfortable biking on any street regardless of traffic condition, a supermajority of women (72%) said they were *un*comfortable or very uncomfortable in the same situation. Similarly, whereas 27% of men indicated being uncomfortable or worse on major streets with painted bike lanes, almost half (47%) of women were uncomfortable or worse in the same situation.

Figure 9 - Comfort Level Bicycling on Various Types of Venues by Sex



*Statistically significant differences between men and women at the 5% level

Based on the comfort level questions and other related questions, respondents were classified into one of "Four Types of Cyclists." See Appendix D for the results of this classification.

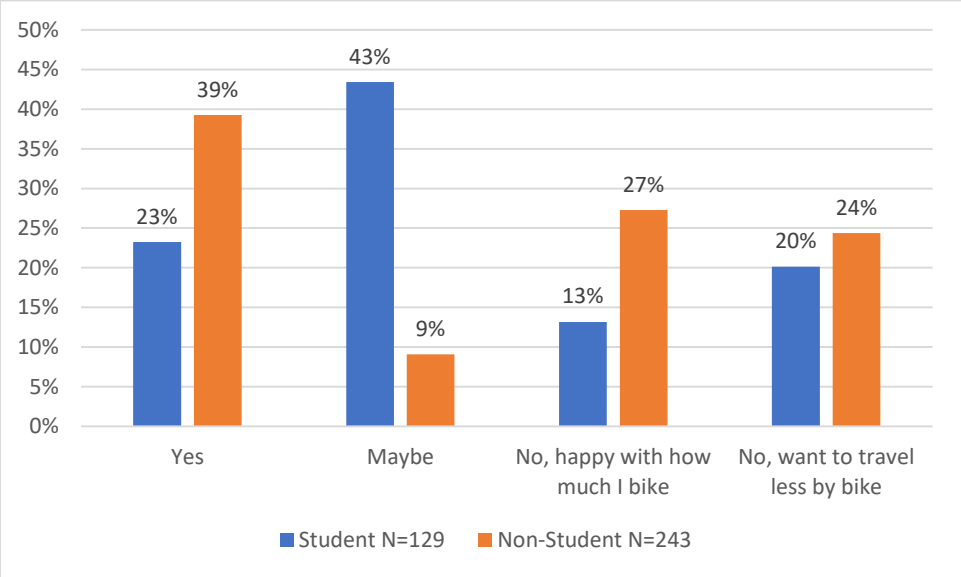
Involved in a crash or close call

Twice as many non-students (10% vs 5% students) reported that they were either in a crash or close call between a bicycle and a moving vehicle in and around Ithaca. Given non-students ride more frequently than students, it would make sense that they would also have a higher incidence of being involved in a crash or close call. Thirty respondents indicated being part of a close call, while only two indicated they were involved in a crash. More than one out of three (38%) were on a bicycle during this crash or close call.

4) Bicycling Attitude

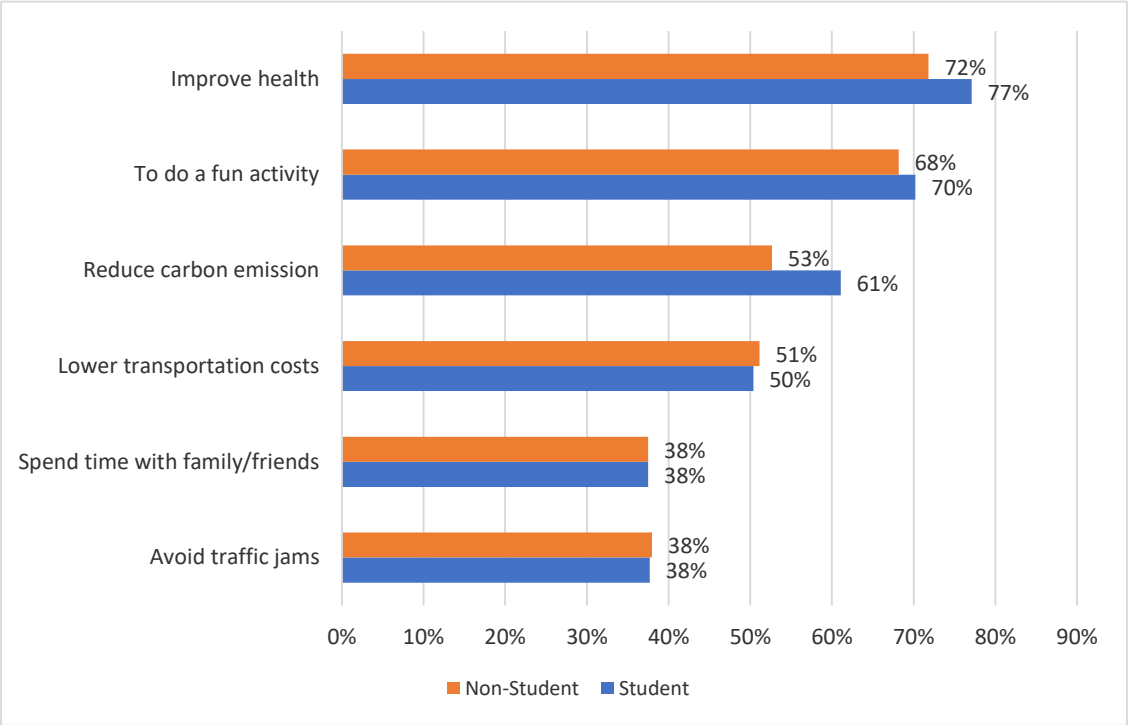
When asked if they would be interested in traveling by bicycle more often in and around Ithaca, the non-students were most enthusiastic, with 39% saying they would compared to 23% of the students. However, 43% of the students said they may be interested in traveling by bicycle more often. This leaves a window of opportunity to get more students traveling by bicycle (see Figure 10).

Figure 10 – Interest in Bicycling More Often In and Around Ithaca



Study participants were offered a list of reasons that might encourage someone to bicycle. They were asked to rate each on how much that reason encourages them to ride a bike, using a scale of 1 to 4, where 1 is not at all to 4 very much. Response options of 3 and 4, representing a compelling reason to bicycle, were collapsed and reported in Figure 11. The order of reasons that would encourage bicycling was the same between students and non-students, with improving health and wellbeing as the most compelling reason (reported by 72% of the non-students and 77% of the students). Students were more likely to say that reducing carbon emissions was also an encouraging reason to bike (61%) compared to 53% of the non-students. Also, more women (61%) reported that reducing carbon emissions is a reason to encourage them to bike compared to men (49%). Less compelling reasons to bicycle included spending time with family and friends and avoiding traffic jams.

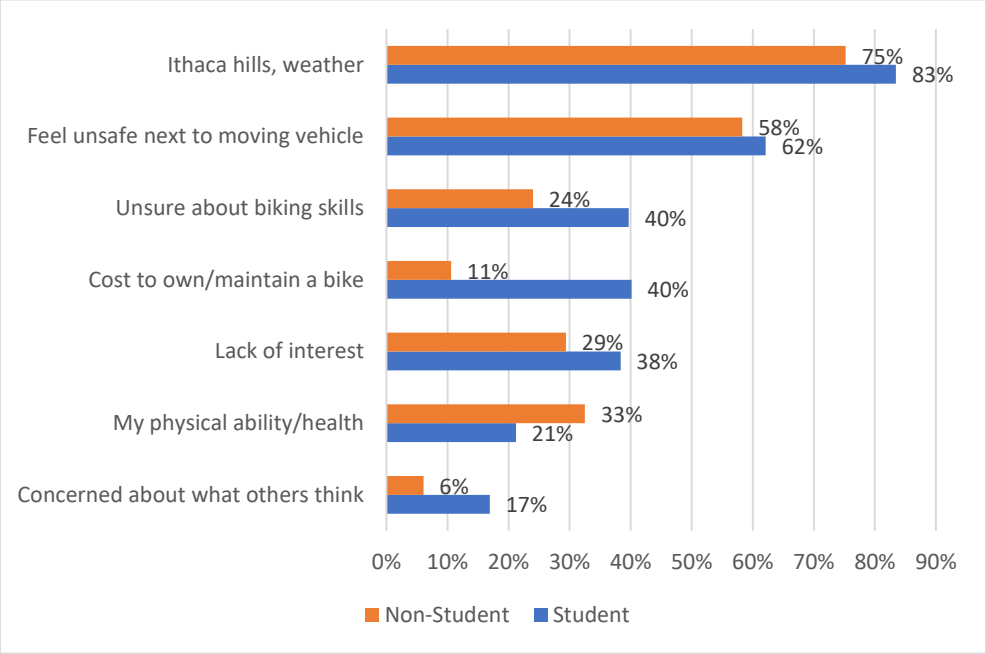
Figure 11 – Reasons that Encourage Bicycling (reporting 3, 4)



A similar type of list of reasons that would discourage someone from bicycling was offered to study participants. They were then asked how much each scenario discouraged them (on a scale of 1 to 4, with 1 being not at all and 4 very much) from bicycling. Response options of 3 and 4, representing a compelling reason to discourage bicycling, were collapsed and reported in Figure 12. The top two reasons both students and non-students reported as discouraging were factors that are specific to Ithaca (such as hills or weather), and feeling unsafe riding next to a moving vehicle. Two out of five students reported that the uncertainty of their own biking skills, the cost to own and maintain a bike, and their lack of interest in bicycling as other reasons that discourage them from bicycling, whereas about one in three of the non-students reported that their own physical health and ability as well as their lack of interest as their next set of reasons.

Women are more likely to report that feeling unsafe next to moving vehicles is a discourages them to bike compared to men (67% of women vs. 48% of men). Women were also disproportionately discouraged by their physical ability or health (63% of women vs. 23% of men) and by features specific to Ithaca such as the hills and weather (81% women vs. 75% men).

Figure 12 – Reasons that Discourage Bicycling



Study participants were asked to agree or disagree to a set of three statements about bicycling. Response options offered were on a scale of 1 to 4, where 1 is strongly disagree and 4 is strongly agree. Responses of 3 or 4 were combined to report those who agreed with each statement. Bicycling is considered more a part of the transportation mix in and around Ithaca for the non-students (89%) compared to the students. Both groups agree that there should be more bike infrastructure on the streets in and around Ithaca. Offering bike racks near TCAT stops would be encourage bus usage by about one in five respondents, students and non-students alike.

	Percent Agree	
	Students (N=134)	Non-Students (N=247)
➢ Bicycling is a part of the transportation mix in and around Ithaca:	69%	89%
➢ There should be more bike infrastructure on the streets in and around Ithaca:	80%	75%
➢ I would take TCAT more often if there were more bike racks near stops	23%	20%

When asked what mode of transportation they would use less often if they rode a bicycle more often, the plurality (45%) of students would walk less often, whereas the majority (65%) of the non-students would drive alone less often.

5) Summary

Although the United States is largely considered a car-dependent country, active transportation in the form of bicycling is a growing and effective way to improve physical, mental, social, and environmental health.

Bicycling in Ithaca, NY – even given its climate and geographic conditions – is a viable and currently an actively employed mode of transportation. Although the incidence of bicycling to work and school may seem relatively low, with 5% of non-students bicycling to work and 2% of the students bicycling to school as their primary mode of transportation, it is significantly higher than the national figures. In general, the level of bicycling in the United States for non-recreational purposes among adults is less than 1%[1] according to the Census Bureau.

Bicycling behavior and attitudes differs between students and non-students, with non-students being the most active people bicycling currently. One reason to explain this discrepancy in bicycling behavior between the students and non-students is that the overwhelming majority of students (almost 9 out of 10) do not have regular access to a working bicycle.

During warmer months, there is an increase in bicycling among both student and non-student populations, with 7% of the students riding a bicycle to get to school at least once per week and 17% of the non-students bicycling to work at least once per week. Improving health, doing a fun activity and reducing carbon emissions are reasons noted by both groups that encourage them to bicycle in and around Ithaca.

Safety is a strong concern, and even the most ardent bicyclists are not comfortable riding right next to motor vehicles, which is a significant deterrent to bicycling. Research has shown (Carnell, 2000)[i2] that if there is a desire to promote and encourage bicycling, it is most effective when coupled with additions of bicycle-friendly infrastructure. Survey respondents reported being most comfortable bicycling on

[1] https://www.census.gov/newsroom/press-releases/2014/cb14-86.html
[2] Carnall, D. (2000). Cycling and health promotion: A safer, slower urban road environment is key. BMJ: *British Medical Journal*, 320(7239), 888.

separated bike trails or paths, low-traffic neighborhood streets, and high-traffic streets with separated bicycle infrastructure. While all respondents reported higher levels of discomfort riding on roads with painted bike lanes or no dedicated bicycle infrastructure, women tended to report a higher level of discomfort compared to men. Both students (80%) and non-students (75%) agreed that there should be more bicycle infrastructure on the streets in and around Ithaca.

In addition to not wanting to ride next to moving vehicles, most people also reported that Ithaca-specific features, such as hills and weather, are also barriers to bicycling. Again, more women than men reported the hills and weather as issues for them. Being unsure of ones bicycling skills and the cost to own or maintain a bicycle were reported also as barriers to students, and less so by non-students. Women noted that their own physical ability or health discouraged them to bicycle as well.

Despite these barriers, the plurality of non-students (39%) are interested in bicycling more often in and around Ithaca, and the plurality of students (43%) *may* be interested in bicycling more often. Additionally, the majority of students (69%) and non-students (89%) agree that bicycling is a part of the transportation mix in and around Ithaca. This signals a great opportunity to increase bicycling overall in and around Ithaca. If they could ride a bicycle more often as a mode of transportation, both groups reported that this would lead them to drive alone less often, particularly non-students who currently drive alone most frequently.

Appendix A: Questionnaire

INTRO:
"Good evening / afternoon. My name is _____ and I'm calling from the University of New Hampshire Survey Center on behalf of Ithaca CarShare. We are conducting a short study to understand the transportation habits of people in and around Ithaca, New York. We'd really appreciate your help and cooperation and to thank you, you will get a $10 Wegmans gift card for completing the survey."

RESID
"Before we begin, do you live within 5 miles of the Commons in downtown Ithaca at least part of the year?"

1 YES
2 NO → "Thank you very much, we are only interviewing residents who live within 5 miles for at least part of the year."

99 REFUSED → TERMINATE

CELL1
"First, to confirm, have I reached you on your cell phone or a land line?"

1 CELL PHONE → SKIPTO CELL2
2 LAND LINE → SKIPTO BIR1

99 REFUSED → TERMINATE

CELL2
"Are you doing any activity that requires your full attention, such as driving a car?"

1 IF YES: "Can I call back at a later time?" MAKE APPOINTMENT
2 NO → SKIPTO AGE18

99 NA / REFUSED → TERMINATE

AGE18
"And are you 18 years old or older?"

1 YES → SKIP TO SEX
2 NO → "Thank you very much, we are only interviewing adults 18 years old or older."

99 REFUSAL → "Thank you very much, we are only interviewing adults 18 years old or older."

BIR1

"In order to determine who to interview, could you tell me, of the adults aged 18 or older who currently live in your household -- including yourself -- who had the most recent birthday? I don't mean who is the youngest, but rather, who had the most recent birthday?"

1 INFORMANT →SKIP TO SEX
2 SOMEONE ELSE : _____ → SKIP TO INT2
3 DON'T KNOW ALL BIRTHDAYS, ONLY SOME → CONTINUE WITH BIR2 BELOW
4 DON'T KNOW ANY BIRTHDAYS OTHER THAN OWN → SKIP TO SEX

99 REFUSED -- ENTER NON-RESPONSE INFORMATION

BIR2
"Of the ones that you do know, who had the most recent birthday?"

1 INFORMANT _____ → SKIP TO SEX
2 SOMEONE ELSE (SPECIFY): _____ → GO TO INT2
3 PERSON NOT AVAILABLE → MAKE APPOINTMENT

99 REFUSED

INT2
ASK TO SPEAK TO THAT PERSON

"Hello, this is _____ calling from the University of New Hampshire on behalf of Ithaca CarShare. We are conducting a short study to understand the transportation habits of people in and around Ithaca, New York. You have been identified as the adult in your household who had the most recent birthday. Is this correct?"

1 YES → SKIPTO SEX
2 APPOINTMENT

99 REFUSAL → TERMINATE

SEX
“Thank you very much for helping us with this important study. Your telephone number was randomly selected from all households in and around Ithaca. This call may be monitored for quality assurance.”

“If you live in and around Ithaca for only a part of the year, think of your situation in and around Ithaca only.”

IF ASKED: “This survey will take 10 minutes to complete.”

RECORD SEX

1 MALE
2 FEMALE

3 REFUSES TO DO SURVEY

99 UNKNOWN SEX (PROBE: “First, what gender do you identify as?”)

Q:Q1
“On a typical weekday, what type of transportation would you most likely use to get to work?”

IF NEEDED: “Pick the type of transportation you use most frequently.”
IF SOMEONE SAYS CAR OR DRIVE - "Do you typically drive alone or carpool?"

DO NOT READ, SELECT ONE

1 WALK
2 BIKE
3 TCAT BUS
4 DRIVE ALONE
5 CARPOOL
6 TAXI/UBER

96 DO NOT WORK
97 OTHER
98 DON’T KNOW/NOT SURE
99 REFUSED

Q:Q2
“On a typical weekday, what type of transportation would you most likely use to get to school or college?”
IF SOMEONE SAYS CAR OR DRIVE - "Do you typically drive alone or carpool?"

DO NOT READ, SELECT ONE

1 WALK
2 BIKE
3 TCAT BUS
4 DRIVE ALONE
5 CARPOOL
6 TAXI/UBER

96 DO NOT GO TO SCHOOL
97 OTHER
98 DON’T KNOW/NOT SURE
99 REFUSED

Q:Q3
“On a typical weekday, what type of transportation would you most likely use for family and personal errands?”
IF SOMEONE SAYS CAR OR DRIVE - "Do you typically drive alone or carpool?"

1 WALK
2 BIKE
3 TCAT BUS
4 DRIVE ALONE
5 CARPOOL
6 TAXI/UBER

96 DO NOT DO FAMILY OR PERSONAL ERRANDS
97 OTHER
98 DON’T KNOW/NOT SURE
99 REFUSED

Q:Q4
“Do you have regular access to a working bicycle in Ithaca? Do not include stationary bicycles, rentals, or bikeshare.”

1 YES
2 NO

98 DON'T KNOW/NOT SURE
99 NA/REFUSED

Q:Q5
“Have you used Zagster Big Red Bikes, the bikeshare system at Cornell University?”

1 YES
2 NO

98 DON'T KNOW/NOT SURE
99 NA/REFUSED

Q:Q6
IF (Q1 = 96) SKP
“On average, during warmer months, how often do you use a bicycle in and around Ithaca to get to work …

READ RESPONSES, SELECT ONE

1 At least once a day,
2 At least once a week,
3 At least once a month,
4 At least once a year,
5 Never?”

98 DON'T KNOW/NOT SURE
99 NA/REFUSED

Q:Q7
IF (Q2 = 96) SKP
“On average, during warmer months, how often do you use a bicycle in and around Ithaca … to get to school or college …

READ RESPONSES, SELECT ONE

1 At least once a day,
2 At least once a week,
3 At least once a month,
4 At least once a year,
5 Never?”

98 DON'T KNOW/NOT SURE
99 NA/REFUSED

Q:Q8
IF (Q3 = 96) SKP
“On average, during warmer months, how often do you use a bicycle in and around Ithaca … for family and personal errands …

READ RESPONSES, SELECT ONE

1 At least once a day,
2 At least once a week,
3 At least once a month,
4 At least once a year,
5 Never?”

98 DON'T KNOW/NOT SURE
99 NA/REFUSED

Q:Q9
“On average, during warmer months, how often do you use a bicycle in and around Ithaca … for recreation or exercise …

READ RESPONSES, SELECT ONE

1 At least once a day,
2 At least once a week,
3 At least once a month,
4 At least once a year,
5 Never?”

98 DON'T KNOW/NOT SURE
99 NA/REFUSED

Q:Q10
“When was the last time you rode a bicycle in and around Ithaca …

READ RESPONSES, SELECT ONE

1 Within the last 30 days,
2 Within the last 6 months,
3 Within the last year,
4 1-2 years ago,
5 3-5 years ago,
6 More than 5 years ago,
7 Never?”

98 DON'T KNOW/NOT SURE
99 NA/REFUSED

Q:Q11
"If you were travelling by bicycle on your own, how comfortable would you feel biking in the following environments, where 1 equals very uncomfortable and 4 equals very comfortable."

"On almost any street regardless of traffic conditions."

1	VERY UNCOMFORTABLE
2	
3	
4	VERY COMFORTABLE
98	DON'T KNOW/NOT SURE
99	NA/REFUSED

Q:Q12
"On major streets, provided they have painted bicycle lanes."

IF NEEDED: "How comfortable would you feel? Where 1 equals very uncomfortable and 4 equals very comfortable"

Q:Q13
"On major streets, provided they have bicycle lanes separated from traffic with a physical barrier."

IF NEEDED: "How comfortable would you feel? Where 1 equals very uncomfortable to 4 equals very comfortable"

Q:Q14
"On local neighborhood streets with little traffic and low speeds."

IF NEEDED: "How comfortable would you feel? Where 1 equals very uncomfortable to 4 equals very comfortable"

Q:Q15
"On bicycle paths or trails separate from the street."

IF NEEDED: "How comfortable would you feel? Where 1 equals very uncomfortable to 4 equals very comfortable"

Q:Q16
“Are you interested in travelling by bicycle more often in and around Ithaca?”

IF NO: “Is this because you are happy with how much you currently bicycle or you want to travel less by bike or not at all?”

1 YES
2 MAYBE
3 NO, I AM HAPPY WITH HOW MUCH I CURRENTLY BICYCLE
4 NO, I WANT TO TRAVEL LESS OR NOT AT ALL BY BICYCLE

98 DON'T KNOW/NOT SURE
99 NA/REFUSED

Q:Q17
“How much do the following reasons encourage you to bike? Where 1 equals not at all and 4 equals very”

“To improve my health and wellbeing”

1 NOT AT ALL
2
3
4 VERY

98 DON'T KNOW/NOT SURE
99 NA/REFUSED

Q:Q18
“To reduce my carbon emissions”

IF NEEDED: “How much do the following reasons encourage you to bike? Where 1 equals not at all and 4 equals very”

Q:Q19
“To do a fun activity”

IF NEEDED: “How much do the following reasons encourage you to bike? Where 1 equals not at all and 4 equals very”

Q:Q20
“To spend time with family and friends”

IF NEEDED: “How much do the following reasons encourage you to bike? Where 1 equals not at all and 4 equals very”

Q:Q21
“To lower my transportation costs”

IF NEEDED: “How much do the following reasons encourage you to bike? Where 1 equals not at all and 4 equals very”

Q:Q22
“To avoid traffic jams”

IF NEEDED: “How much do the following reasons encourage you to bike? Where 1 equals not at all and 4 equals very”

Q:Q23
“Any other reasons?”

RECORD VERBATIM RESPONSE

Q:Q24

“How much do the following reasons discourage you from biking in and around Ithaca? Where 1 equals not at all and 4 equals very”

“My physical ability or health”

1	NOT AT ALL
2	
3	
4	VERY
98	DON'T KNOW/NOT SURE
99	NA/REFUSED

Q:Q25

“Cost to own and maintain a bike.”

IF NEEDED: “How much do the following reasons discourage you from biking in and around Ithaca? Where 1 equals not at all and 4 equals very”

Q:Q26

“Unsure about my bicycling skills and experience.”

IF NEEDED: “How much do the following reasons discourage you from biking in and around Ithaca? Where 1 equals not at all and 4 equals very”

Q:Q27

"Feel unsafe bicycling next to moving vehicles"

IF NEEDED: "How much do the following reasons discourage you from biking in and around Ithaca? Where 1 equals not at all and 4 equals very"

Q:Q28

"Concerned about what people will think of me"

IF NEEDED: "How much do the following reasons discourage you from biking in and around Ithaca? Where 1 equals not at all and 4 equals very"

Q:Q29

"Features specific to Ithaca such as hills or weather."

IF NEEDED: "How much do the following reasons discourage you from biking in and around Ithaca? Where 1 equals not at all and 4 equals very"

Q:Q30

"Lack of interest in bicycling"

IF NEEDED: "How much do the following reasons discourage you from biking in and around Ithaca? Where 1 equals not at all and 4 equals very"

Q:Q31

Any Other reasons?"

RECORD VERBATIM RESPONSE

Q:Q32
"In the past year, have you been involved in a crash or a close call between a bicycle and a moving vehicle in and around Ithaca?"

1 A CRASH
2 A CLOSE CALL
3 BOTH
4 NEITHER→ SKIPTO Q34

98 DON'T KNOW/NOT SURE → SKIPTO Q34
99 NA/REFUSED → SKIPTO Q34

Q:Q33
“Were you on the bicycle or in the moving vehicle?”

1 ON THE BICYCLE
2 IN THE MOVING VEHICLE
3 BOTH

98 DON'T KNOW/NOT SURE
99 NA/REFUSED

Q:Q34
“How much do you agree with the following statements? Where a 1 equals strongly disagree and 4 equals strongly agree”

“Bicycling is a part of the transportation mix in and around Ithaca”

1 STRONGLY DISAGREE
2
3
4 STRONGLY AGREE

98 DON’T KNOW/NOT SURE
99 NA/REFUSED

Q:Q35
“There should be more bike infrastructure on the streets in and around Ithaca.”

IF NEEDED: “A 1 equals strongly disagree and 4 equals strongly agree”

Q:Q36
“I would take TCAT buses more often if there were more bike racks near stops.”

IF NEEDED: “A 1 equals strongly disagree and 4 equals strongly agree”

Q:Q37
“What type of transportation, if any, would you use less often if you rode a bicycle more often?”
IF SOMEONE SAYS CAR OR DRIVE - "Do you typically drive alone or carpool?"
DO NOT READ RESPONSES

1 WALK
2 TCAT BUS
3 DRIVE ALONE
4 CARPOOL
5 USE A TAXI/UBER

96 NONE
98 DON’T KNOW/NOT SURE
99 NA/REFUSED

Q:Q38
"And what is your current age?"

ENTER AGE

Q:Q39
"Which of the following best describes your current status…are you currently …

READ RESPONSES, SELECT ONE

1 Employed,
2 Undergraduate Student,
3 Graduate/Professional Student,
4 Self-employed
5 Stay-at-home
6 Retired
7 Unemployed
8 Other (specify)

98 DON'T KNOW/NOT SURE
99 NA / REFUSED

Q:Q41
"With which of the following do you identify?"

READ LIST, SELECT ONE

1 White or Caucasian,
2 Black or African American,
3 Hispanic or latino/a,
4 American Indian or Alaska Native,
5 Asian or Asian American,
6 Native Hawaiian or Pacific Islander, or
7 Mixed race?"
8 OTHER (SPECIFY)

98 DON'T KNOW/NOT SURE
99 NA / REFUSED

Q:Q42
How much total income did you and your family receive in 2017, not just from wages or salaries but from all sources, that is, before taxes and other deductions were made? Was it… (READ CATEGORIES)

	ANNUAL	MONTHLY EQUIVALENT
1	Less than $15,000,	LESS THAN $1,250
2	$15,000 - $29,999,	$1,250 - $2,499
3	$30,000 - $44,999,	$2,500 - $3,749
4	$45,000 - $59,999,	$3,750 - $4,999
5	$60,000 - $74,999,	$5,000 - $6,249
6	$75,000 - $99,999, or	$6,250 - $8,333
7	$100,000 and over?”	$8,334 AND OVER
98	DK	
99	NA	

Q:Q43
“Are there children under 16 in your household?”

1	YES
2	NO
98	DON'T KNOW/NOT SURE
99	NA/REFUSED

Q:EMAIL
“What is your email address? Solely to provide instructions to claim your Wegmans $10 gift card”

INTERVIEWERS READ BACK AND SPELL TO ENSURE CORRECT

Q:END
"Thank you for your time and participation. Have a great day/evening."

Appendix B: Overall Frequency Distribution of Survey Responses

Q1 Transportation most likely used to get to work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Walk	84	22.0	22.0	22.0
	2 Bike	8	2.1	2.1	24.1
	3 TCAT Bus	38	9.9	9.9	34.0
	4 Drive Alone	135	35.3	35.3	69.4
	5 Carpool	10	2.6	2.6	72.0
	96 Do Not Work	96	25.1	25.1	97.1
	97 Other	10	2.6	2.6	99.7
	98 Don't Know/Not Sure	1	.3	.3	100.0
	Total	382	100.0	100.0	

Q2 Transportation most likely used to get to school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Walk	93	24.3	24.3	24.3
	2 Bike	5	1.3	1.3	25.7
	3 TCAT Bus	35	9.2	9.2	34.8
	4 Drive Alone	73	19.1	19.1	53.9
	5 Carpool	13	3.4	3.4	57.3
	96 Do Not Go To School	158	41.4	41.4	98.7
	97 Other	4	1.0	1.0	99.7
	99 NA/Refused	1	.3	.3	100.0
	Total	382	100.0	100.0	

Q3 Transportation most likely used for family and personal errands

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Walk	22	5.8	5.8	5.8
	2 Bike	8	2.1	2.1	7.9
	3 TCAT Bus	40	10.5	10.5	18.3
	4 Drive Alone	244	63.9	63.9	82.2
	5 Carpool	52	13.6	13.6	95.8
	6 Taxi/Uber	8	2.1	2.1	97.9
	96 Do Not Do Family or Personal Errands	3	.8	.8	98.7
	97 Other	4	1.0	1.0	99.7
	98 Don't Know/Not Sure	1	.3	.3	100.0
	Total	382	100.0	100.0	

Q4 Regular access to working bicycle in Ithaca

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	165	43.2	43.2	43.2
	2 No	210	55.0	55.0	98.2
	98 Don't Know/Not Sure	6	1.6	1.6	99.7
	99 NA/Refused	1	.3	.3	100.0
	Total	382	100.0	100.0	

Q5 Used Zagster Big Red Bikes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	15	3.9	3.9	3.9
	2 No	366	95.8	96.1	100.0
	Total	381	99.7	100.0	
Missing	System	1	.3		
Total		382	100.0		

Q6 In warmer months, how often using a bicycle in and around Ithaca for work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 At Least Once A Day	13	3.4	4.5	4.5
	2 At Least Once A Week	20	5.2	7.0	11.5
	3 At Least Once A Month	10	2.6	3.5	15.0
	4 At Least Once A Year	14	3.7	4.9	19.9
	5 Never	224	58.6	78.3	98.3
	98 Don't Know/Not Sure	4	1.0	1.4	99.7
	99 NA/Refused	1	.3	.3	100.0
	Total	286	74.9	100.0	
Missing	System	96	25.1		
Total		382	100.0		

Q7 In warmer months, how often using a bicycle in and around Ithaca for school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 At Least Once A Day	13	3.4	5.8	5.8
	2 At Least Once A Week	10	2.6	4.5	10.3
	3 At Least Once A Month	4	1.0	1.8	12.1
	4 At Least Once A Year	12	3.1	5.4	17.5
	5 Never	180	47.1	80.7	98.2
	98 Don't Know/Not Sure	4	1.0	1.8	100.0
	Total	223	58.4	100.0	
Missing	System	159	41.6		
Total		382	100.0		

Q8 In warmer months, how often using a bicycle in and around Ithaca for family and personal errands

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 At Least Once A Day	15	3.9	4.0	4.0
	2 At Least Once A Week	39	10.2	10.3	14.2
	3 At Least Once A Month	28	7.3	7.4	21.6
	4 At Least Once A Year	16	4.2	4.2	25.9
	5 Never	279	73.0	73.6	99.5
	98 Don't Know/Not Sure	2	.5	.5	100.0
	Total	379	99.2	100.0	
Missing	System	3	.8		
Total		382	100.0		

Q9 In warmer months, how often using a bicycle in and around Ithaca for recreation or execise

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 At Least Once A Day	17	4.5	4.5	4.5
	2 At Least Once A Week	77	20.2	20.2	24.6
	3 At Least Once A Month	38	9.9	9.9	34.6
	4 At Least Once A Year	35	9.2	9.2	43.7
	5 Never	214	56.0	56.0	99.7
	98 Don't Know/Not Sure	1	.3	.3	100.0
	Total	382	100.0	100.0	

Q10 Last time you rode a bicycle in and around Ithaca

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Within The Last 30 Days	35	9.2	9.2	9.2
	2 Within The Last 6 Months	82	21.5	21.5	30.6
	3 Within The Last Year	45	11.8	11.8	42.4
	4 1-2 Years Ago	15	3.9	3.9	46.3
	5 3-5 Years Ago	22	5.8	5.8	52.1
	6 More Than 5 Years Ago	49	12.8	12.8	64.9
	7 Never	132	34.6	34.6	99.5
	98 Don't Know/Not Sure	2	.5	.5	100.0
	Total	382	100.0	100.0	

Q11 Comfortable biking - On almost any street regardless of traffic conditions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Very Uncomfortable	94	24.6	24.7	24.7
	2 2	132	34.6	34.6	59.3
	3 3	88	23.0	23.1	82.4
	4 Very Comfortable	54	14.1	14.2	96.6
	98 Don't Know/Not Sure	11	2.9	2.9	99.5
	99 NA/Refused	2	.5	.5	100.0
	Total	381	99.7	100.0	
Missing	System	1	.3		
Total		382	100.0		

Q12 Comfortable biking - On major streets, provided they have painted bicycle lanes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Very Uncomfortable	50	13.1	13.1	13.1
	2 2	93	24.3	24.4	37.5
	3 3	119	31.2	31.2	68.8
	4 Very Comfortable	109	28.5	28.6	97.4
	98 Don't Know/Not Sure	7	1.8	1.8	99.2
	99 NA/Refused	3	.8	.8	100.0
	Total	381	99.7	100.0	
Missing	System	1	.3		
Total		382	100.0		

Q13 Comfortable biking - On major streets, provided they have bicycle lanes separated from traffic with a physical barrier

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Very Uncomfortable	33	8.6	8.7	8.7
	2 2	33	8.6	8.7	17.3
	3 3	72	18.8	18.9	36.2
	4 Very Comfortable	229	59.9	60.1	96.3
	98 Don't Know/Not Sure	10	2.6	2.6	99.0
	99 NA/Refused	4	1.0	1.0	100.0
	Total	381	99.7	100.0	
Missing	System	1	.3		
Total		382	100.0		

Q14 Comfortable biking - On local neighborhood streets with little traffic and low speeds

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Very Uncomfortable	31	8.1	8.1	8.1
	2 2	30	7.9	7.9	16.0
	3 3	89	23.3	23.4	39.4
	4 Very Comfortable	225	58.9	59.1	98.4
	98 Don't Know/Not Sure	5	1.3	1.3	99.7
	99 NA/Refused	1	.3	.3	100.0
	Total	381	99.7	100.0	
Missing	System	1	.3		
Total		382	100.0		

Q15 Comfortable biking - On bicycles paths or trails separate from the street

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Very Uncomfortable	22	5.8	5.8	5.8
	2 2	14	3.7	3.7	9.4
	3 3	48	12.6	12.6	22.0
	4 Very Comfortable	286	74.9	75.1	97.1
	98 Don't Know/Not Sure	9	2.4	2.4	99.5
	99 NA/Refused	2	.5	.5	100.0
	Total	381	99.7	100.0	
Missing	System	1	.3		
Total		382	100.0		

Q16 Interested in traveling by bicycle more often in and around Ithaca

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	126	33.0	33.0	33.0
	2 Maybe	78	20.4	20.4	53.4
	3 No, I Am Happy With How Much I Currently Bicycle	83	21.7	21.7	75.1
	4 No, I Want To Travel Less Or Not At All By Bicycle	85	22.3	22.3	97.4
	98 Don't Know/Not Sure	9	2.4	2.4	99.7
	99 NA/Refused	1	.3	.3	100.0
	Total	382	100.0	100.0	

Q17 Reasons encourages you to bike - To improve my health and wellbeing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not At All	55	14.4	14.4	14.4
	2 2	44	11.5	11.5	25.9
	3 3	107	28.0	28.0	53.9
	4 Very	168	44.0	44.0	97.9
	98 Don't Know/Not Sure	5	1.3	1.3	99.2
	99 NA/Refused	3	.8	.8	100.0
	Total	382	100.0	100.0	

Q18 Reasons encourages you to bike - To reduce carbon emissions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not At All	88	23.0	23.0	23.0
	2 2	75	19.6	19.6	42.7
	3 3	98	25.7	25.7	68.3
	4 Very	111	29.1	29.1	97.4
	98 Don't Know/Not Sure	7	1.8	1.8	99.2
	99 NA/Refused	3	.8	.8	100.0
	Total	382	100.0	100.0	

Q19 Reasons encourages you to bike - To do a fun activity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not At All	61	16.0	16.0	16.0
	2 2	55	14.4	14.4	30.4
	3 3	105	27.5	27.5	57.9
	4 Very	154	40.3	40.3	98.2
	98 Don't Know/Not Sure	5	1.3	1.3	99.5
	99 NA/Refused	2	.5	.5	100.0
	Total	382	100.0	100.0	

Q20 Reasons encourages you to bike - To spend time with family and friends

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not At All	114	29.8	29.8	29.8
	2 2	85	22.3	22.3	52.1
	3 3	68	17.8	17.8	69.9
	4 Very	102	26.7	26.7	96.6
	98 Don't Know/Not Sure	10	2.6	2.6	99.2
	99 NA/Refused	3	.8	.8	100.0
	Total	382	100.0	100.0	

Q21 Reasons encourages you to bike - To lower my transportation costs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not At All	147	38.5	38.5	38.5
	2 2	77	20.2	20.2	58.6
	3 3	70	18.3	18.3	77.0
	4 Very	81	21.2	21.2	98.2
	98 Don't Know/Not Sure	4	1.0	1.0	99.2
	99 NA/Refused	3	.8	.8	100.0
	Total	382	100.0	100.0	

Q22 Reasons encourages you to bike - To avoid traffic jams

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not At All	171	44.8	44.8	44.8
	2 2	77	20.2	20.2	64.9
	3 3	62	16.2	16.2	81.2
	4 Very	62	16.2	16.2	97.4
	98 Don't Know/Not Sure	7	1.8	1.8	99.2
	99 NA/Refused	3	.8	.8	100.0
	Total	382	100.0	100.0	

Q24 Reasons discourages you to bike - My physical ability or health

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not At All	194	50.8	50.8	50.8
	2 2	75	19.6	19.6	70.4
	3 3	47	12.3	12.3	82.7
	4 Very	62	16.2	16.2	99.0
	98 Don't Know/Not Sure	3	.8	.8	99.7
	99 NA/Refused	1	.3	.3	100.0
	Total	382	100.0	100.0	

Q25 Reasons discourages you to bike - Cost to own and maintain a bike

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not At All	217	56.8	56.8	56.8
	2 2	80	20.9	20.9	77.7
	3 3	43	11.3	11.3	89.0
	4 Very	36	9.4	9.4	98.4
	98 Don't Know/Not Sure	4	1.0	1.0	99.5
	99 NA/Refused	2	.5	.5	100.0
	Total	382	100.0	100.0	

Q26 Reasons discourages you to bike - Unsure about my bicycling skills and experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not At All	205	53.7	53.7	53.7
	2 2	60	15.7	15.7	69.4
	3 3	52	13.6	13.6	83.0
	4 Very	59	15.4	15.4	98.4
	98 Don't Know/Not Sure	4	1.0	1.0	99.5
	99 NA/Refused	2	.5	.5	100.0
	Total	382	100.0	100.0	

Q27 Reasons discourages you to bike - Feel unsafe bicycling next to moving vehicles

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not At All	66	17.3	17.3	17.3
	2 2	87	22.8	22.8	40.1
	3 3	93	24.3	24.3	64.4
	4 Very	133	34.8	34.8	99.2
	98 Don't Know/Not Sure	2	.5	.5	99.7
	99 NA/Refused	1	.3	.3	100.0
	Total	382	100.0	100.0	

Q28 Reasons discourages you to bike - Concerned about what people will think of me

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not At All	304	79.6	79.8	79.8
	2 2	36	9.4	9.4	89.2
	3 3	19	5.0	5.0	94.2
	4 Very	18	4.7	4.7	99.0
	98 Don't Know/Not Sure	3	.8	.8	99.7
	99 NA/Refused	1	.3	.3	100.0
	Total	381	99.7	100.0	
Missing	System	1	.3		
Total		382	100.0		

Q29 Reasons discourages you to bike - Features specific to Ithaca such as hills or weather

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not At All	36	9.4	9.4	9.4
	2 2	45	11.8	11.8	21.2
	3 3	77	20.2	20.2	41.4
	4 Very	219	57.3	57.3	98.7
	98 Don't Know/Not Sure	4	1.0	1.0	99.7
	99 NA/Refused	1	.3	.3	100.0
	Total	382	100.0	100.0	

Q30 Reasons discourages you to bike - Lack of interest in bicycling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not At All	161	42.1	42.1	42.1
	2 2	93	24.3	24.3	66.5
	3 3	66	17.3	17.3	83.8
	4 Very	58	15.2	15.2	99.0
	98 Don't Know/Not Sure	3	.8	.8	99.7
	99 NA/Refused	1	.3	.3	100.0
	Total	382	100.0	100.0	

Q32 Past year involved in a crash or close call between bicycle and moving vehicle in and around Ithaca

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 A Crash	2	.5	.5	.5
	2 A Close Call	30	7.9	7.9	8.4
	4 Neither	347	90.8	90.8	99.2
	98 Don't Know/Not Sure	3	.8	.8	100.0
	Total	382	100.0	100.0	

Q33 Were you on the bicycle or in the moving vehicle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 On the Bicycle	12	3.1	37.5	37.5
	2 In the Moving Vehicle	18	4.7	56.3	93.8
	3 Both	2	.5	6.3	100.0
	Total	32	8.4	100.0	
Missing	System	350	91.6		
Total		382	100.0		

Q34 Agree/Disagree - Bicycling is a part of the transportation mix in and around Ithaca

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly Disagree	17	4.5	4.5	4.5
	2 2	61	16.0	16.0	20.4
	3 3	120	31.4	31.4	51.8
	4 Strongly Agree	183	47.9	47.9	99.7
	98 Don't Know/Not Sure	1	.3	.3	100.0
	Total	382	100.0	100.0	

Q35 Agree/Disagree - There should be more bike infrastructure on the streets in and around Ithaca

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly Disagree	30	7.9	7.9	7.9
	2 2	51	13.4	13.4	21.2
	3 3	125	32.7	32.7	53.9
	4 Strongly Agree	167	43.7	43.7	97.6
	98 Don't Know/Not Sure	9	2.4	2.4	100.0
	Total	382	100.0	100.0	

Q36 Agree/Disagree - I would take TCAT buses more often if there were more bike racks near stops

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly Disagree	187	49.0	49.0	49.0
	2 2	75	19.6	19.6	68.6
	3 3	38	9.9	9.9	78.5
	4 Strongly Agree	42	11.0	11.0	89.5
	98 Don't Know/Not Sure	37	9.7	9.7	99.2
	99 NA/Refused	3	.8	.8	100.0
	Total	382	100.0	100.0	

Q37 Type of transportation you would use less often if you rode a bicycle more often

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Walk	73	19.1	19.1	19.1
	2 TCAT Bus	44	11.5	11.5	30.6
	3 Drive Alone	183	47.9	47.9	78.5
	4 Carpool	23	6.0	6.0	84.6
	5 Taxi/ Uber	11	2.9	2.9	87.4
	96 None	38	9.9	9.9	97.4
	97 Other	1	.3	.3	97.6
	98 Don't Know/Not Sure	7	1.8	1.8	99.5
	99 NA/Refused	2	.5	.5	100.0
	Total	382	100.0	100.0	

AGE1 Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00 18 - 21	101	26.4	26.8	26.8
	2.00 22 - 24	33	8.6	8.8	35.5
	3.00 25 - 29	7	1.8	1.9	37.4
	4.00 30 - 34	9	2.4	2.4	39.8
	5.00 35 - 39	22	5.8	5.8	45.6
	6.00 40 - 44	21	5.5	5.6	51.2
	7.00 45 - 49	23	6.0	6.1	57.3
	8.00 50 - 54	20	5.2	5.3	62.6
	9.00 55 - 59	24	6.3	6.4	69.0
	10.00 60 - 64	28	7.3	7.4	76.4
	11.00 65 - 69	31	8.1	8.2	84.6
	12.00 70 or older	58	15.2	15.4	100.0
	Total	377	98.7	100.0	
Missing	System	5	1.3		
Total		382	100.0		

CHILD16 Children Under 16 in Household

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00 Yes	77	20.2	20.5	20.5
	2.00 No	298	78.0	79.5	100.0
	Total	375	98.2	100.0	
Missing	System	7	1.8		
Total		382	100.0		

INCOME Household Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00 Less than $15,000	30	7.9	9.5	9.5
	2.00 $15,000 - $29,999	24	6.3	7.6	17.0
	3.00 $30,000 - $44,999	28	7.3	8.8	25.9
	4.00 $45,000 - $59,999	36	9.4	11.4	37.2
	5.00 $60,000 - $74,999	43	11.3	13.6	50.8
	6.00 $75,000 - $99,999	35	9.2	11.0	61.8
	7.00 $100,000 and over	121	31.7	38.2	100.0
	Total	317	83.0	100.0	
Missing	System	65	17.0		
Total		382	100.0		

RACE Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00 White or Caucasian	260	68.1	70.8	70.8
	2.00 Black or African American	15	3.9	4.1	74.9
	3.00 Hispanic or Latino/a	19	5.0	5.2	80.1
	4.00 American Indian or Alaska Native	3	.8	.8	80.9
	5.00 Asian or Asian American	43	11.3	11.7	92.6
	7.00 Mixed Race	19	5.0	5.2	97.8
	8.00 Other	8	2.1	2.2	100.0
	Total	367	96.1	100.0	
Missing	System	15	3.9		
Total		382	100.0		

EMPLOY Employment Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00 Employed	116	30.4	30.4	30.4
	2.00 Undergraduate Student	125	32.7	32.8	63.3
	3.00 Graduate/Professional Student	9	2.4	2.4	65.6
	4.00 Self-Employed	37	9.7	9.7	75.3
	5.00 Stay-At-Home	9	2.4	2.4	77.7
	6.00 Retired	76	19.9	19.9	97.6
	7.00 Unemployed	4	1.0	1.0	98.7
	8.00 Other Employment Status	5	1.3	1.3	100.0
	Total	381	99.7	100.0	
Missing	System	1	.3		
Total		382	100.0		

Appendix C: Frequency Distribution of Responses: Students vs Non-Students

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q1 Transportation most likely used to get to work	1 Walk	53	31	84
		39.6%	12.6%	22.0%
	2 Bike	0	8	8
		0.0%	3.2%	2.1%
	3 TCAT Bus	22	16	38
		16.4%	6.5%	10.0%
	4 Drive Alone	19	115	134
		14.2%	46.6%	35.2%
	5 Carpool	4	6	10
		3.0%	2.4%	2.6%
	96 Do Not Work	35	61	96
		26.1%	24.7%	25.2%
	97 Other	1	9	10
		0.7%	3.6%	2.6%
	98 Don't Know/Not Sure	0	1	1
		0.0%	0.4%	0.3%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	71.064[a]	7	.000
Likelihood Ratio	76.494	7	.000
Linear-by-Linear Association	.335	1	.563
N of Valid Cases	381		

a. 5 cells (31.3%) have expected count less than 5. The minimum expected count is .35.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q2 Transportation most likely used to get to school	1 Walk	80	13	93
		59.7%	5.3%	24.4%
	2 Bike	2	3	5
		1.5%	1.2%	1.3%
	3 TCAT Bus	21	14	35
		15.7%	5.7%	9.2%
	4 Drive Alone	18	54	72
		13.4%	21.9%	18.9%
	5 Carpool	9	4	13
		6.7%	1.6%	3.4%
	96 Do Not Go To School	0	158	158
		0.0%	64.0%	41.5%
	97 Other	4	0	4
		3.0%	0.0%	1.0%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	218.497[a]	7	.000
Likelihood Ratio	268.038	7	.000
Linear-by-Linear Association	136.897	1	.000
N of Valid Cases	381		

a. 7 cells (43.8%) have expected count less than 5. The minimum expected count is .35.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q3 Transportation most likely used for family and personal errands	1 Walk	9	13	22
		6.7%	5.3%	5.8%
	2 Bike	1	7	8
		0.7%	2.8%	2.1%
	3 TCAT Bus	32	8	40
		23.9%	3.2%	10.5%
	4 Drive Alone	45	198	243
		33.6%	80.2%	63.8%
	5 Carpool	36	16	52
		26.9%	6.5%	13.6%
	6 Taxi/Uber	6	2	8
		4.5%	0.8%	2.1%
	96 Do Not Do Family or Personal Errands	3	0	3
		2.2%	0.0%	0.8%
	97 Other	2	2	4
		1.5%	0.8%	1.0%
	98 Don't Know/Not Sure	0	1	1
		0.0%	0.4%	0.3%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	105.411[a]	8	.000
Likelihood Ratio	106.716	8	.000
Linear-by-Linear Association	2.760	1	.097
N of Valid Cases	381		

a. 8 cells (44.4%) have expected count less than 5. The minimum expected count is .35.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q4 Regular access to working bicycle in Ithaca	1 Yes	16	148	164
		11.9%	59.9%	43.0%
	2 No	112	98	210
		83.6%	39.7%	55.1%
	98 Don't Know/Not Sure	6	0	6
		4.5%	0.0%	1.6%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	88.443[a]	3	.000
Likelihood Ratio	99.108	3	.000
Linear-by-Linear Association	9.891	1	.002
N of Valid Cases	381		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .35.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q5 Used Zagster Big Red Bikes	1 Yes	10	5	15
		7.5%	2.0%	3.9%
	2 No	123	242	365
		92.5%	98.0%	96.1%
Total		133	247	380
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.883[a]	1	.009		
Continuity Correction[b]	5.511	1	.019		
Likelihood Ratio	6.482	1	.011		
Fisher's Exact Test				.012	.011
Linear-by-Linear Association	6.865	1	.009		
N of Valid Cases	380				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.25.

b. Computed only for a 2x2 table

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q6 In warmer months, how often using a bicycle in and around Ithaca for work	1 At Least Once A Day	1	12	13
		1.0%	6.5%	4.6%
	2 At Least Once A Week	2	18	20
		2.0%	9.7%	7.0%
	3 At Least Once A Month	0	9	9
		0.0%	4.8%	3.2%
	4 At Least Once A Year	3	11	14
		3.0%	5.9%	4.9%
	5 Never	91	133	224
		91.9%	71.5%	78.6%
	98 Don't Know/Not Sure	2	2	4
		2.0%	1.1%	1.4%
	99 NA/Refused	0	1	1
		0.0%	0.5%	0.4%
Total		99	186	285
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	19.846[a]	6	.003
Likelihood Ratio	25.352	6	.000
Linear-by-Linear Association	.378	1	.539
N of Valid Cases	285		

a. 7 cells (50.0%) have expected count less than 5. The minimum expected count is .35.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q7 In warmer months, how often using a bicycle in and around Ithaca for school	1 At Least Once A Day	4	9	13
		3.0%	10.1%	5.9%
	2 At Least Once A Week	4	6	10
		3.0%	6.7%	4.5%
	3 At Least Once A Month	1	3	4
		0.8%	3.4%	1.8%
	4 At Least Once A Year	6	6	12
		4.5%	6.7%	5.4%
	5 Never	116	63	179
		87.2%	70.8%	80.6%
	98 Don't Know/Not Sure	2	2	4
		1.5%	2.2%	1.8%
Total		133	89	222
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.716[a]	5	.057
Likelihood Ratio	10.574	5	.061
Linear-by-Linear Association	.017	1	.898
N of Valid Cases	222		

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is 1.60.

Crosstab

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q8 In warmer months, how often using a bicycle in and around Ithaca for family and personal errands	1 At Least Once A Day	3	12	15
		2.3%	4.9%	4.0%
	2 At Least Once A Week	3	36	39
		2.3%	14.6%	10.3%
	3 At Least Once A Month	4	24	28
		3.1%	9.7%	7.4%
	4 At Least Once A Year	2	14	16
		1.5%	5.7%	4.2%
	5 Never	117	161	278
		89.3%	65.2%	73.5%
	98 Don't Know/Not Sure	2	0	2
		1.5%	0.0%	0.5%
Total		131	247	378
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	33.091[a]	5	.000
Likelihood Ratio	38.256	5	.000
Linear-by-Linear Association	7.648	1	.006
N of Valid Cases	378		

a. 2 cells (16.7%) have expected count less than 5. The minimum expected count is .69.

Crosstab

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q9 In warmer months, how often using a bicycle in and around Ithaca for recreation or exercise	1 At Least Once A Day	4	13	17
		3.0%	5.3%	4.5%
	2 At Least Once A Week	6	71	77
		4.5%	28.7%	20.2%
	3 At Least Once A Month	4	34	38
		3.0%	13.8%	10.0%
	4 At Least Once A Year	19	16	35
		14.2%	6.5%	9.2%
	5 Never	100	113	213
		74.6%	45.7%	55.9%
	98 Don't Know/Not Sure	1	0	1
		0.7%	0.0%	0.3%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	56.857[a]	5	.000
Likelihood Ratio	65.136	5	.000
Linear-by-Linear Association	9.443	1	.002
N of Valid Cases	381		

a. 2 cells (16.7%) have expected count less than 5. The minimum expected count is .35.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q10 Last time you rode a bicycle in and around Ithaca	1 Within The Last 30 Days	4	31	35
		3.0%	12.6%	9.2%
	2 Within The Last 6 Months	13	69	82
		9.7%	27.9%	21.5%
	3 Within The Last Year	12	33	45
		9.0%	13.4%	11.8%
	4 1-2 Years Ago	8	7	15
		6.0%	2.8%	3.9%
	5 3-5 Years Ago	4	17	21
		3.0%	6.9%	5.5%
	6 More Than 5 Years Ago	0	49	49
		0.0%	19.8%	12.9%
	7 Never	92	40	132
		68.7%	16.2%	34.6%
	98 Don't Know/Not Sure	1	1	2
		0.7%	0.4%	0.5%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	123.852[a]	7	.000
Likelihood Ratio	139.488	7	.000
Linear-by-Linear Association	7.914	1	.005
N of Valid Cases	381		

a. 2 cells (12.5%) have expected count less than 5. The minimum expected count is .70.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q11 Comfortable biking - On almost any street regardless of traffic conditions	1 Very Uncomfortable	29	65	94
		21.8%	26.3%	24.7%
	2 2	54	78	132
		40.6%	31.6%	34.7%
	3 3	30	57	87
		22.6%	23.1%	22.9%
	4 Very Comfortable	16	38	54
		12.0%	15.4%	14.2%
	98 Don't Know/Not Sure	4	7	11
		3.0%	2.8%	2.9%
	99 NA/Refused	0	2	2
		0.0%	0.8%	0.5%
Total		133	247	380
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.518[a]	5	.477
Likelihood Ratio	5.151	5	.398
Linear-by-Linear Association	.118	1	.731
N of Valid Cases	380		

a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is .70.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q12 Comfortable biking - On major streets, provided they have painted bicycle lanes	1 Very Uncomfortable	16	34	50
		12.0%	13.8%	13.2%
	2 2	39	54	93
		29.3%	21.9%	24.5%
	3 3	45	73	118
		33.8%	29.6%	31.1%
	4 Very Comfortable	33	76	109
		24.8%	30.8%	28.7%
	98 Don't Know/Not Sure	0	7	7
		0.0%	2.8%	1.8%
Total		133	247	380
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.128[a]	5	.104
Likelihood Ratio	12.329	5	.031
Linear-by-Linear Association	5.751	1	.016
N of Valid Cases	380		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is 1.05.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q13 Comfortable biking - On major streets, provided they have bicycle lanes separated from traffic with a physical barrier	1 Very Uncomfortable	14	19	33
		10.5%	7.7%	8.7%
	2 2	12	21	33
		9.0%	8.5%	8.7%
	3 3	24	48	72
		18.0%	19.4%	18.9%
	4 Very Comfortable	83	145	228
		62.4%	58.7%	60.0%
	98 Don't Know/Not Sure	0	10	10
		0.0%	4.0%	2.6%
Total		133	247	380
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.650[a]	5	.124
Likelihood Ratio	13.151	5	.022
Linear-by-Linear Association	7.914	1	.005
N of Valid Cases	380		

a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is 1.40.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q14 Comfortable biking - On local neighborhood streets with little traffic and low speeds	1 Very Uncomfortable	11	20	31
		8.3%	8.1%	8.2%
	2 2	9	21	30
		6.8%	8.5%	7.9%
	3 3	29	60	89
		21.8%	24.3%	23.4%
	4 Very Comfortable	83	141	224
		62.4%	57.1%	58.9%
	98 Don't Know/Not Sure	1	4	5
		0.8%	1.6%	1.3%
Total		133	247	380
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.009[a]	5	.848
Likelihood Ratio	2.387	5	.793
Linear-by-Linear Association	.805	1	.370
N of Valid Cases	380		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .35.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q15 Comfortable biking - On bicycles paths or trails separate from the street	1 Very Uncomfortable	9	13	22
		6.8%	5.3%	5.8%
	2 2	8	6	14
		6.0%	2.4%	3.7%
	3 3	20	28	48
		15.0%	11.3%	12.6%
	4 Very Comfortable	95	190	285
		71.4%	76.9%	75.0%
	98 Don't Know/Not Sure	1	8	9
		0.8%	3.2%	2.4%
Total		133	247	380
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.975[a]	5	.158
Likelihood Ratio	8.876	5	.114
Linear-by-Linear Association	3.638	1	.056
N of Valid Cases	380		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .70.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q16 Interested in traveling by bicycle more often in and around Ithaca	1 Yes	30	95	125
		22.4%	38.5%	32.8%
	2 Maybe	56	22	78
		41.8%	8.9%	20.5%
	3 No, I Am Happy With How Much I Currently Bicycle	17	66	83
		12.7%	26.7%	21.8%
	4 No, I Want To Travel Less Or Not At All By Bicycle	26	59	85
		19.4%	23.9%	22.3%
	98 Don't Know/Not Sure	5	4	9
		3.7%	1.6%	2.4%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	63.546[a]	5	.000
Likelihood Ratio	62.373	5	.000
Linear-by-Linear Association	.901	1	.343
N of Valid Cases	381		

a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is .35.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q17 Reasons encourages you to bike - To improve my health and wellbeing	1 Not At All	14	41	55
		10.4%	16.6%	14.4%
	2 2	16	28	44
		11.9%	11.3%	11.5%
	3 3	54	53	107
		40.3%	21.5%	28.1%
	4 Very	47	120	167
		35.1%	48.6%	43.8%
	98 Don't Know/Not Sure	3	2	5
		2.2%	0.8%	1.3%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	19.881[a]	5	.001
Likelihood Ratio	20.519	5	.001
Linear-by-Linear Association	.014	1	.906
N of Valid Cases	381		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is 1.06.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q18 Reasons encourages you to bike - To reduce carbon emissions	1 Not At All	21	67	88
		15.7%	27.1%	23.1%
	2 2	30	45	75
		22.4%	18.2%	19.7%
	3 3	50	47	97
		37.3%	19.0%	25.5%
	4 Very	30	81	111
		22.4%	32.8%	29.1%
	98 Don't Know/Not Sure	3	4	7
		2.2%	1.6%	1.8%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	22.147[a]	5	.000
Likelihood Ratio	23.008	5	.000
Linear-by-Linear Association	.090	1	.764
N of Valid Cases	381		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is 1.06.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q19 Reasons encourages you to bike - To do a fun activity	1 Not At All	18	43	61
		13.4%	17.4%	16.0%
	2 2	21	33	54
		15.7%	13.4%	14.2%
	3 3	44	61	105
		32.8%	24.7%	27.6%
	4 Very	48	106	154
		35.8%	42.9%	40.4%
	98 Don't Know/Not Sure	3	2	5
		2.2%	0.8%	1.3%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.792[a]	5	.237
Likelihood Ratio	7.350	5	.196
Linear-by-Linear Association	.168	1	.682
N of Valid Cases	381		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .70.

Crosstab

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q20 Reasons encourages you to bike - To spend time with family and friends	1 Not At All	43	71	114
		32.1%	28.7%	29.9%
	2 2	37	47	84
		27.6%	19.0%	22.0%
	3 3	23	45	68
		17.2%	18.2%	17.8%
	4 Very	25	77	102
		18.7%	31.2%	26.8%
	98 Don't Know/Not Sure	6	4	10
		4.5%	1.6%	2.6%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.698[a]	5	.026
Likelihood Ratio	13.724	5	.017
Linear-by-Linear Association	.461	1	.497
N of Valid Cases	381		

a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is 1.06.

Crosstab

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q21 Reasons encourages you to bike - To lower my transportation costs	1 Not At All	36	111	147
		26.9%	44.9%	38.6%
	2 2	28	48	76
		20.9%	19.4%	19.9%
	3 3	36	34	70
		26.9%	13.8%	18.4%
	4 Very	31	50	81
		23.1%	20.2%	21.3%
	98 Don't Know/Not Sure	3	1	4
		2.2%	0.4%	1.0%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	20.315[a]	5	.001
Likelihood Ratio	21.190	5	.001
Linear-by-Linear Association	.467	1	.495
N of Valid Cases	381		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is 1.06.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q22 Reasons encourages you to bike - To avoid traffic jams	1 Not At All	44	126	170
		32.8%	51.0%	44.6%
	2 2	37	40	77
		27.6%	16.2%	20.2%
	3 3	26	36	62
		19.4%	14.6%	16.3%
	4 Very	23	39	62
		17.2%	15.8%	16.3%
	98 Don't Know/Not Sure	4	3	7
		3.0%	1.2%	1.8%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.491[a]	5	.006
Likelihood Ratio	17.442	5	.004
Linear-by-Linear Association	.221	1	.638
N of Valid Cases	381		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is 1.06.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q24 Reasons discourages you to bike - My physical ability or health	1 Not At All	77	117	194
		57.5%	47.4%	50.9%
	2 2	27	48	75
		20.1%	19.4%	19.7%
	3 3	14	32	46
		10.4%	13.0%	12.1%
	4 Very	14	48	62
		10.4%	19.4%	16.3%
	98 Don't Know/Not Sure	2	1	3
		1.5%	0.4%	0.8%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.371[a]	5	.137
Likelihood Ratio	8.918	5	.112
Linear-by-Linear Association	.106	1	.745
N of Valid Cases	381		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .35.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q25 Reasons discourages you to bike - Cost to own and maintain a bike	1 Not At All	42	175	217
		31.3%	70.9%	57.0%
	2 2	37	42	79
		27.6%	17.0%	20.7%
	3 3	30	13	43
		22.4%	5.3%	11.3%
	4 Very	23	13	36
		17.2%	5.3%	9.4%
	98 Don't Know/Not Sure	2	2	4
		1.5%	0.8%	1.0%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	65.586[a]	5	.000
Likelihood Ratio	66.378	5	.000
Linear-by-Linear Association	.271	1	.603
N of Valid Cases	381		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .70.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q26 Reasons discourages you to bike - Unsure about my bicycling skills and experience	1 Not At All	56	148	204
		41.8%	59.9%	53.5%
	2 2	23	37	60
		17.2%	15.0%	15.7%
	3 3	23	29	52
		17.2%	11.7%	13.6%
	4 Very	29	30	59
		21.6%	12.1%	15.5%
	98 Don't Know/Not Sure	3	1	4
		2.2%	0.4%	1.0%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.394[a]	5	.006
Likelihood Ratio	16.828	5	.005
Linear-by-Linear Association	1.169	1	.280
N of Valid Cases	381		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .70.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q27 Reasons discourages you to bike - Feel unsafe bicycling next to moving vehicles	1 Not At All	23	42	65
		17.2%	17.0%	17.1%
	2 2	27	60	87
		20.1%	24.3%	22.8%
	3 3	34	59	93
		25.4%	23.9%	24.4%
	4 Very	48	85	133
		35.8%	34.4%	34.9%
	98 Don't Know/Not Sure	2	0	2
		1.5%	0.0%	0.5%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.011[a]	5	.415
Likelihood Ratio	5.841	5	.322
Linear-by-Linear Association	1.397	1	.237
N of Valid Cases	381		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .35.

Crosstab

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q28 Reasons discourages you to bike - Concerned about what people will think of me	1 Not At All	81	222	303
		60.9%	89.9%	79.7%
	2 2	27	9	36
		20.3%	3.6%	9.5%
	3 3	13	6	19
		9.8%	2.4%	5.0%
	4 Very	9	9	18
		6.8%	3.6%	4.7%
	98 Don't Know/Not Sure	3	0	3
		2.3%	0.0%	0.8%
Total		133	247	380
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	51.640[a]	5	.000
Likelihood Ratio	51.087	5	.000
Linear-by-Linear Association	4.234	1	.040
N of Valid Cases	380		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .35.

Crosstab

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q29 Reasons discourages you to bike - Features specific to Ithaca such as hills or weather	1 Not At All	10	26	36
		7.5%	10.5%	9.4%
	2 2	10	34	44
		7.5%	13.8%	11.5%
	3 3	28	49	77
		20.9%	19.8%	20.2%
	4 Very	83	136	219
		61.9%	55.1%	57.5%
	98 Don't Know/Not Sure	3	1	4
		2.2%	0.4%	1.0%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.940[a]	5	.160
Likelihood Ratio	8.362	5	.137
Linear-by-Linear Association	1.761	1	.184
N of Valid Cases	381		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .35.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q30 Reasons discourages you to bike - Lack of interest in bicycling	1 Not At All	40	121	161
		29.9%	49.0%	42.3%
	2 2	42	51	93
		31.3%	20.6%	24.4%
	3 3	33	33	66
		24.6%	13.4%	17.3%
	4 Very	18	39	57
		13.4%	15.8%	15.0%
	98 Don't Know/Not Sure	1	2	3
		0.7%	0.8%	0.8%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	18.835[a]	5	.002
Likelihood Ratio	19.169	5	.002
Linear-by-Linear Association	.034	1	.853
N of Valid Cases	381		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .35.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q32 Past year involved in a crash or close call between bicycle and moving vehicle in and around Ithaca	1 A Crash	1	1	2
		0.7%	0.4%	0.5%
	2 A Close Call	6	24	30
		4.5%	9.7%	7.9%
	4 Neither	124	222	346
		92.5%	89.9%	90.8%
	98 Don't Know/Not Sure	3	0	3
		2.2%	0.0%	0.8%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.819[a]	3	.032
Likelihood Ratio	9.840	3	.020
Linear-by-Linear Association	6.018	1	.014
N of Valid Cases	381		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .70.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q33 Were you on the bicycle or in the moving vehicle	1 On the Bicycle	3	9	12
		42.9%	36.0%	37.5%
	2 In the Moving Vehicle	4	14	18
		57.1%	56.0%	56.3%
	3 Both	0	2	2
		0.0%	8.0%	6.3%
Total		7	25	32
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.630[a]	2	.730
Likelihood Ratio	1.055	2	.590
Linear-by-Linear Association	.344	1	.557
N of Valid Cases	32		

a. 4 cells (66.7%) have expected count less than 5. The minimum expected count is .44.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q34 Agree/Disagree - Bicycling is a part of the transportation mix in and around Ithaca	1 Strongly Disagree	10	7	17
		7.5%	2.8%	4.5%
	2 2	31	30	61
		23.1%	12.1%	16.0%
	3 3	59	60	119
		44.0%	24.3%	31.2%
	4 Strongly Agree	33	150	183
		24.6%	60.7%	48.0%
	98 Don't Know/Not Sure	1	0	1
		0.7%	0.0%	0.3%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	46.975[a]	4	.000
Likelihood Ratio	48.899	4	.000
Linear-by-Linear Association	.076	1	.783
N of Valid Cases	381		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is .35.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q35 Agree/Disagree - There should be more bike infrastructure on the streets in and around Ithaca	1 Strongly Disagree	2	28	30
		1.5%	11.3%	7.9%
	2 2	22	28	50
		16.4%	11.3%	13.1%
	3 3	58	67	125
		43.3%	27.1%	32.8%
	4 Strongly Agree	49	118	167
		36.6%	47.8%	43.8%
	98 Don't Know/Not Sure	3	6	9
		2.2%	2.4%	2.4%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	21.815[a]	4	.000
Likelihood Ratio	24.640	4	.000
Linear-by-Linear Association	.009	1	.925
N of Valid Cases	381		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 3.17.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q36 Agree/Disagree - I would take TCAT buses more often if there were more bike racks near stops	1 Strongly Disagree	43	143	186
		32.1%	57.9%	48.8%
	2 2	37	38	75
		27.6%	15.4%	19.7%
	3 3	16	22	38
		11.9%	8.9%	10.0%
	4 Strongly Agree	14	28	42
		10.4%	11.3%	11.0%
	98 Don't Know/Not Sure	24	13	37
		17.9%	5.3%	9.7%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	35.247[a]	5	.000
Likelihood Ratio	35.887	5	.000
Linear-by-Linear Association	12.543	1	.000
N of Valid Cases	381		

a. 2 cells (16.7%) have expected count less than 5. The minimum expected count is 1.06.

Crosstab

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
Q37 Type of transportation you would use less often if you rode a bicycle more often	1 Walk	60	13	73
		44.8%	5.3%	19.2%
	2 TCAT Bus	28	16	44
		20.9%	6.5%	11.5%
	3 Drive Alone	23	159	182
		17.2%	64.4%	47.8%
	4 Carpool	6	17	23
		4.5%	6.9%	6.0%
	5 Taxi/ Uber	8	3	11
		6.0%	1.2%	2.9%
	96 None	9	29	38
		6.7%	11.7%	10.0%
	97 Other	0	1	1
		0.0%	0.4%	0.3%
	98 Don't Know/Not Sure	0	7	7
		0.0%	2.8%	1.8%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	142.215[a]	8	.000
Likelihood Ratio	149.064	8	.000
Linear-by-Linear Association	7.859	1	.005
N of Valid Cases	381		

a. 7 cells (38.9%) have expected count less than 5. The minimum expected count is .35.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
AGE1 Age	1.00 18 - 21	96	5	101
		74.4%	2.0%	26.9%
	2.00 22 - 24	28	5	33
		21.7%	2.0%	8.8%
	3.00 25 - 29	1	5	6
		0.8%	2.0%	1.6%
	4.00 30 - 34	0	9	9
		0.0%	3.6%	2.4%
	5.00 35 - 39	3	19	22
		2.3%	7.7%	5.9%
	6.00 40 - 44	1	20	21
		0.8%	8.1%	5.6%
	7.00 45 - 49	0	23	23
		0.0%	9.3%	6.1%
	8.00 50 - 54	0	20	20
		0.0%	8.1%	5.3%
	9.00 55 - 59	0	24	24
		0.0%	9.7%	6.4%
	10.00 60 - 64	0	28	28
		0.0%	11.3%	7.4%
	11.00 65 - 69	0	31	31
		0.0%	12.6%	8.2%
	12.00 70 or older	0	58	58
		0.0%	23.5%	15.4%
Total		129	247	376
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	316.671[a]	11	.000
Likelihood Ratio	384.732	11	.000
Linear-by-Linear Association	248.110	1	.000
N of Valid Cases	376		

a. 3 cells (12.5%) have expected count less than 5. The minimum expected count is 2.06.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
CHILD16 Children Under 16 in Household	1.00 Yes	25	52	77
		19.4%	21.2%	20.6%
	2.00 No	104	193	297
		80.6%	78.8%	79.4%
Total		129	245	374
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.176[a]	1	.675		
Continuity Correction[b]	.081	1	.776		
Likelihood Ratio	.177	1	.674		
Fisher's Exact Test				.788	.391
Linear-by-Linear Association	.175	1	.675		
N of Valid Cases	374				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 26.56.

b. Computed only for a 2x2 table

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
INCOME Household Income	1.00 Less than $15,000	20	9	29
		15.9%	4.7%	9.2%
	2.00 $15,000 - $29,999	6	18	24
		4.8%	9.5%	7.6%
	3.00 $30,000 - $44,999	6	22	28
		4.8%	11.6%	8.9%
	4.00 $45,000 - $59,999	15	21	36
		11.9%	11.1%	11.4%
	5.00 $60,000 - $74,999	16	27	43
		12.7%	14.2%	13.6%
	6.00 $75,000 - $99,999	9	26	35
		7.1%	13.7%	11.1%
	7.00 $100,000 and over	54	67	121
		42.9%	35.3%	38.3%
Total		126	190	316
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	20.669[a]	6	.002
Likelihood Ratio	21.092	6	.002
Linear-by-Linear Association	.143	1	.705
N of Valid Cases	316		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.57.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
RACE Race	1.00 White or Caucasian	63	196	259
		48.1%	83.4%	70.8%
	2.00 Black or African American	7	8	15
		5.3%	3.4%	4.1%
	3.00 Hispanic or Latino/a	15	4	19
		11.5%	1.7%	5.2%
	4.00 American Indian or Alaska Native	0	3	3
		0.0%	1.3%	0.8%
	5.00 Asian or Asian American	36	7	43
		27.5%	3.0%	11.7%
	7.00 Mixed Race	9	10	19
		6.9%	4.3%	5.2%
	8.00 Other	1	7	8
		0.8%	3.0%	2.2%
Total		131	235	366
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	78.641[a]	6	.000
Likelihood Ratio	79.233	6	.000
Linear-by-Linear Association	28.666	1	.000
N of Valid Cases	366		

a. 3 cells (21.4%) have expected count less than 5. The minimum expected count is 1.07.

		STUDENT Status		
		1.00 Student	2.00 Non-Student	Total
EMPLOY Employment Status	1.00 Employed	0	116	116
		0.0%	47.0%	30.4%
	2.00 Undergraduate Student	125	0	125
		93.3%	0.0%	32.8%
	3.00 Graduate/Professional Student	9	0	9
		6.7%	0.0%	2.4%
	4.00 Self-Employed	0	37	37
		0.0%	15.0%	9.7%
	5.00 Stay-At-Home	0	9	9
		0.0%	3.6%	2.4%
	6.00 Retired	0	76	76
		0.0%	30.8%	19.9%
	7.00 Unemployed	0	4	4
		0.0%	1.6%	1.0%
	8.00 Other Employment Status	0	5	5
		0.0%	2.0%	1.3%
Total		134	247	381
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	381.000[a]	7	.000
Likelihood Ratio	494.154	7	.000
Linear-by-Linear Association	36.710	1	.000
N of Valid Cases	381		

a. 6 cells (37.5%) have expected count less than 5. The minimum expected count is 1.41.

Appendix D: Four Types of Cyclists

The "Four Types of Cyclists" typology was conceived of by Robert Geller of the Portland Office of Transportation to describe and categorize the different "market[s] for bike transportation" in Portland, Oregon. The typologies were further refined and tested by Jennifer Dill and Nathan McNeil (2012). The four types of cyclists and the Portland-based results from Dill & McNeil are:

- Strong and Fearless: 4%
- Enthused and Confident: 9%
- Interested but Concerned: 56%
- No Way No How: 31%

The typology focuses not on current bicycling habits but on the attitudes and preferences of the people who answer a survey. Of particular interest in the "Interested but Concerned" type, which is often associated with potential cyclists who would begin riding their bicycles more often if their primarily safety-related concerns were addressed.

Based on Dill & McNeil, Thomas Pera of the Ithaca-Tompkins County Transportation Council proposed a 10-question survey to administer the survey locally. A majority of the questions involve ranking the comfort level of the survey respondent on various types of streets without and then with a painted bike lane. Dill & McNeil go further by asking about separated bike lanes and traffic calming measures. Due to survey length concerns, the scenarios and variations were combined into five distinct bicycling "venues" as described on Page 13 of this report. Survey respondents were asked about their comfort level in each of the five venues, and the responses to these and other questions were combined in a similar way that Pera suggested to arrive at the Four Types of Cyclists in Ithaca (see Methodology).

Methodology

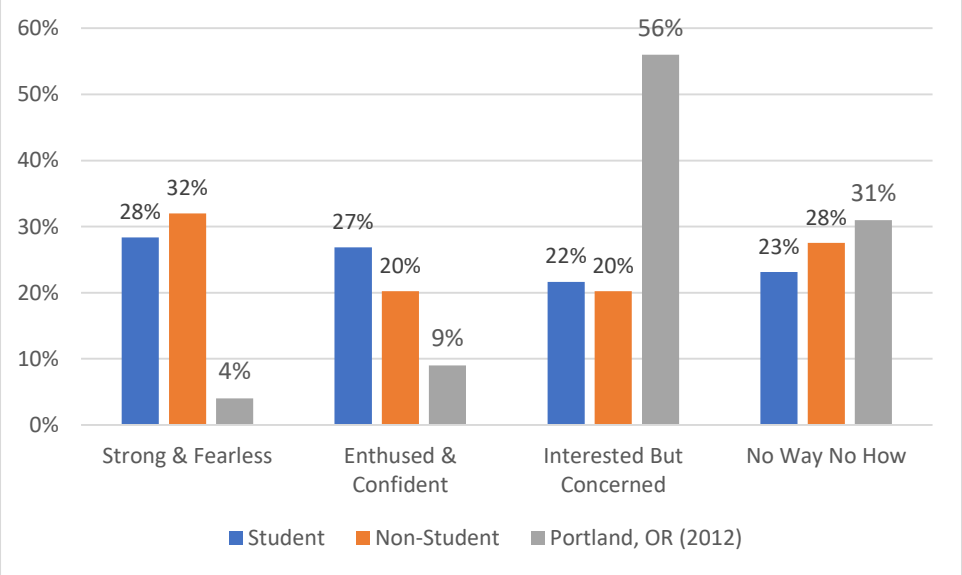
Respondents were categorized into each of the four types based on six questions (question numbers refer to survey questions in Appendix A):

1. If Q16 ("Are you interested in traveling more often by bicycle in and around Ithaca") = "No, I want to travel less or not at all by bicycle", then CyclingStage = "No Way No How"
2. If Q11 (regarding comfort "on almost any street regardless of traffic conditions") = 3 OR 4, then CyclingStage = "Strong and Fearless"
3. If Q12 (regarding comfort "on major streets, provided they have painted bicycle lanes") = 3 OR 4, then CyclingStage = "Enthused and Confident"
4. If Q13, Q14, OR Q15 (regarding comfort level on bicycle facilities segregated from fast-moving vehicles) = 3 OR 4, then CyclingStage = "Interested but Concerned"
5. If Q16 = "Yes" OR "Maybe" OR "No, I am happy with how much I currently bicycle", then CyclingStage = "Interested but Concerned"
6. Else, CyclingStage = "No Way No How"

Results

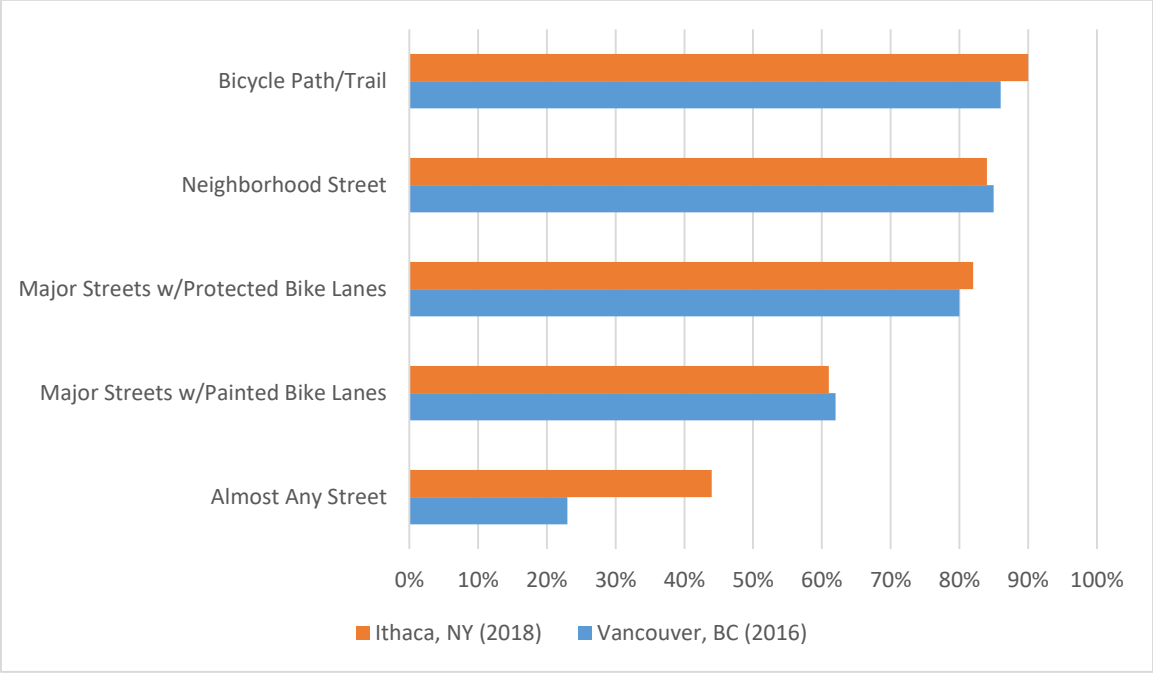
Due to limited testing time with the combined bicycling venues and Dill & McNeil or Pera's more granular methodology, we were unable to ascertain whether results from the combined version would be comparable with the results from the four stages survey in Portland as administered by Dill & McNeil. The results from the combined version seem incongruent with the results from Portland and local and national expectations (see Figure A). Apart from the lost granularity of the combined version, other factors which may have increased the Strong and Fearless and Enthused and Confident categories beyond levels seen in other surveys may be the less intimidating nature of Ithaca's streets and an already high level of occasional bicycling for transportation compared to other cities in the country.

Figure A – Four Types of Cyclists in Ithaca (Students vs. Non-Students) and Portland, OR



However, a more direct comparison of some of the questions to an equivalent annual panel survey from Vancouver, Canada shows that the local results of comfort levels on the five bicycling venues (which is a big determinant in the four stages of cycling) is not irregular compared to that of a larger North American city except for the "any street" category, which more people found comfortable in Ithaca (see Figure B). Future surveys should include the full list of questions as proposed by Dill & McNeil to determine how alike or different is Ithaca's distribution among the four types of cyclists compared to other cities in the country.

Figure B – Percentage of Respondents Comfortable Biking in Each Venue



Source: 2016 Vancouver Panel Survey, prepared for the City of Vancouver by McElhanney Consulting Services