

Overview of survey results obtained from Clarkson University and SUNY Potsdam students regarding travel behavior and pedestrian improvements

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I. Motive & Background

One key component of the project is to collect data from students regarding travel behaviors, their perceptions of traveling to the village, and other information that would help to make recommendations to the village. As such, surveys were distributed via campus-wide emails to both SUNY Potsdam and Clarkson students. Using Google Forms as the surveying tool, data was both summarized and imported into ArcGIS to create various models.

II. Student Engagement

As expressed by the Planning Board, one issue that is of concern to the village is that of students not getting out of campus enough. This could be due to a combination of factors including the increased level of service provided by universities to their students, lack of ability to travel to the village center (or even inconvenience), and limited knowledge of what shops exist, among others.

The results of this survey will help to pinpoint concerns and opinions held by students, and potential solutions.

III. Methodology

IRB Approval In order to distribute surveys to students, approval had to be obtained from the respective institutional review boards of both universities. While this process did take some time to complete, exemption status was granted (as opposed to a full-review), allowing for an expedited process.

Campus-wide Emails To alert students to the survey, permission was obtained for either university to send mass emails to students. At Clarkson University, over 3,000 students were reached. SUNY Potsdam has stricter rules, and thus only allowed for a sample of 400 students to receive the email. This asymmetry of course has repercussions on the data obtained and is noted where appropriate.

Due to poor SUNY Potsdam 'turnout', I requested the email notification be sent again. This was done and a few more students responded to the survey.

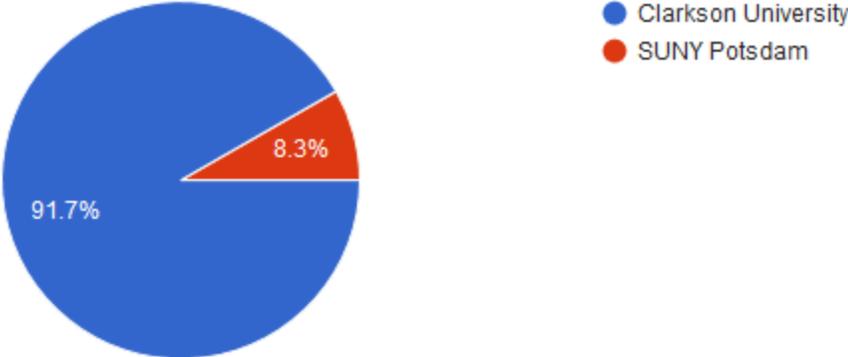
Survey Tool Google Forms was used to create the survey and collect results. The respondents visited the web page where the survey is located (link obtained by the email sent above) and completed the survey. Results are recorded by Google's systems and can be exported in tabular form to software such as Excel and Google Sheets.

IV. Student demographics

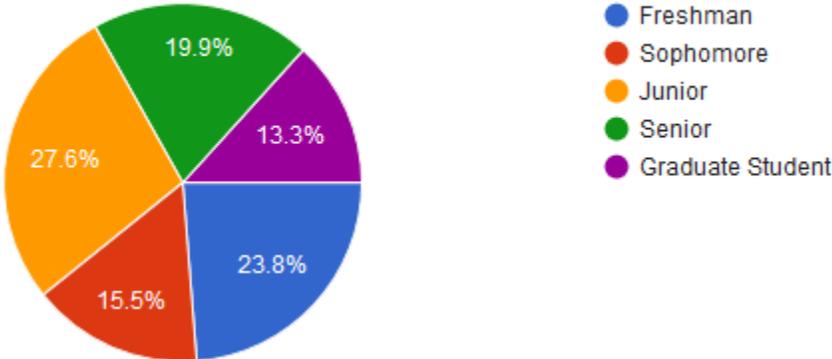
The vast majority of respondents attend Clarkson University. This has caused the survey results to be heavily biased toward Clarkson as opposed to balanced between the two universities. Even after the survey notification email was sent to the sample of 400 SUNY students again, response rate was markedly low.

Google Forms provides a small graph of the number of responses per day. It shows a large peak when the survey became available to Clarkson students, and quickly drops off to after day 2. A smaller peak occurs when the survey was made public to SUNY Potsdam students. However, summing the points around this 2nd peak yields roughly 30 responses, compared to less than 18 as indicated in the pie chart below. It could be that some SUNY Potsdam students accidentally marked 'Clarkson' or forgot to change the bubble to indicate SUNY.

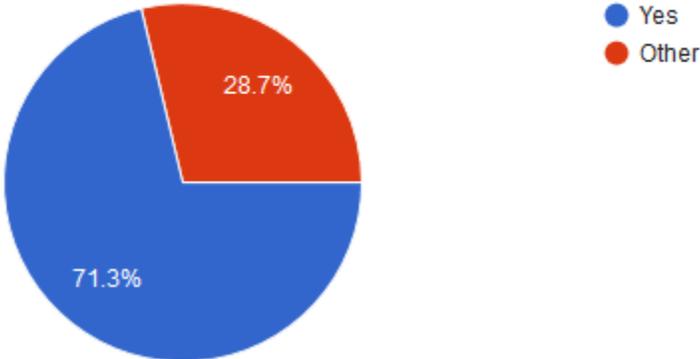
Which school do you currently attend? (181 responses)



Cohort identification (181 responses)

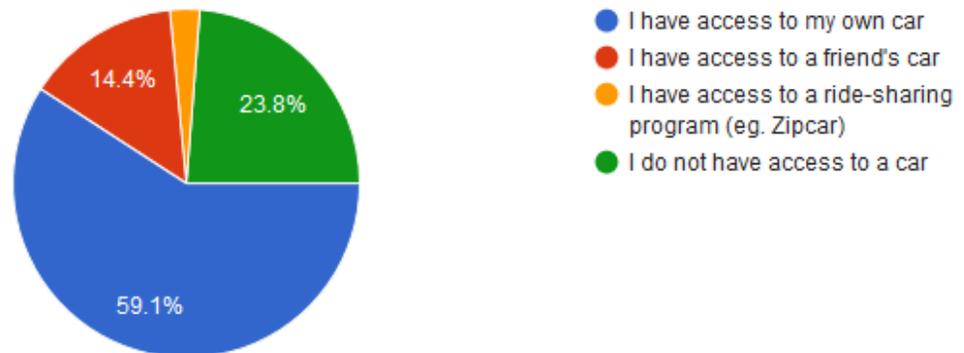


Are you living on campus? (181 responses)



About 52 students indicated they are living off-campus, with 129 living on campus.

Car access on campus (181 responses)



While the majority of students have access to their own car, or could have a friend drive them, a considerable portion (23.8%) said they have no access to a car. Some students in this category may be unaware of the Zipcars that are available to Clarkson students (note that the survey results skew toward Clarkson), or do not wish to join the program, so they may have indicated 'no access'.

The portion of students who indicate 'no access' are particularly important as they would then have to walk or use a bicycle both on and off campus. Improving walkability and bike travel between the campuses and the village could do much to capture this population.

V. Behavioral

This section comprises the core of the survey. It seeks to gather data on how students travel on campus and around the village, as well as learning about their mode of transportation, popular destinations, suggestions for improvement, etc.

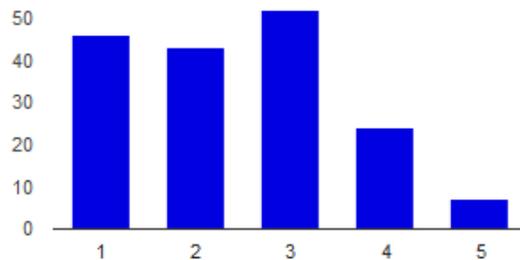
Students were asked to identify the primary purpose of their trips by both modes of transportation. Starting with cars, the primary purpose of most students' trips were to purchase groceries. This is supported by the locations most visited by students via car:

Popular destinations by car	
Walmart	475
Clarkson	362
Price chopper	121
Kinney's	82

TEP	60
SUNY Potsdam	47
Aldi	44

As shown, excluding trips to Clarkson University, the three most popular destinations by car are all locations to purchase groceries. It is also not surprising that these locations are located at some distance from either university, and thus require vehicular transportation to reach them.

There were no immediate concerns with the ease of transportation around the village by car. Only a very minute percentage of respondents stated their difficulty of travel was the most difficult option of '5 - Difficult, many conflicts and impediments'. The data appears left-skewed toward a relative ease of travel.



Easy, few conflicts or impediments:	1	46	26.7%
	2	43	25%
	3	52	30.2%
	4	24	14%
Difficult, many conflicts and impediments:	5	7	4.1%

The responses show a distinct difference between using a 'car' as transportation versus being a pedestrian.

Popular destinations for foot and bicycle traffic focused more on convenience stores and food, as opposed to groceries.

Popular destinations by foot/bike	
Clarkson University	368
Kinneys	156

Maxfields	120
Stewart's (combined)	74
SUNY Potsdam	47
IGA	32

Excluding Clarkson University again, the top three locations are smaller stores for purchasing a few items or meals. Note that there was ambiguity in the response of 'Stewart's', as most did not indicate which of the two locations. Thus they are combined in a single field to avoid misrepresentation of either shop.

Common in both these tables is that Clarkson University receives a large amount of foot/bicycle and vehicular traffic. However, the survey was skewed toward a larger sample size of Clarkson students who responded than SUNY students.

By combining the table for car trip-counts with the pedestrian trip-counts, a difference can be obtained. This quantity describes how much a particular destination is 'car-dominated' or 'pedestrian-dominated'. Shown are either ends of the table:

Destination	Car	Foot & Bike	Difference
Maxfields	14	120	106
Kinney's	82	156	74
Stewarts (combined)	39	74	35
Bagelry	12	29	17
Sergi's	4	17	13
Eben's Hearth	2	14	12
Little Italy	5	16	11
Between the Buns	14	9	-5
Lowe's	9	1	-8
Chilly Delight	12	3	-9
Hot Tamales	29	11	-18
Dunkin Donuts	39	6	-33

Aldis	44	1	-43
Price Chopper	121	3	-118
Walmart	475	15	-460

	Pedestrian dominated		Car dominated
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Locations where the difference is close to zero (roughly equal in car and pedestrian traffic) include the Thai Cuisine restaurant, IGA, Potsdam Food Co-op, and University Bookstore. These would be prime locations to try to reinforce foot and bicycle facilities to sway traffic toward pedestrianism.

Differences in travel location was also analyzed based on on-campus vs. off-campus students. By summing the responses by those who indicated 'off-campus' on their survey, and subtracting this from the total, on-campus responses could be gathered. Now, the two columns could be compared. Shown are the results for both car travel and pedestrian travel:

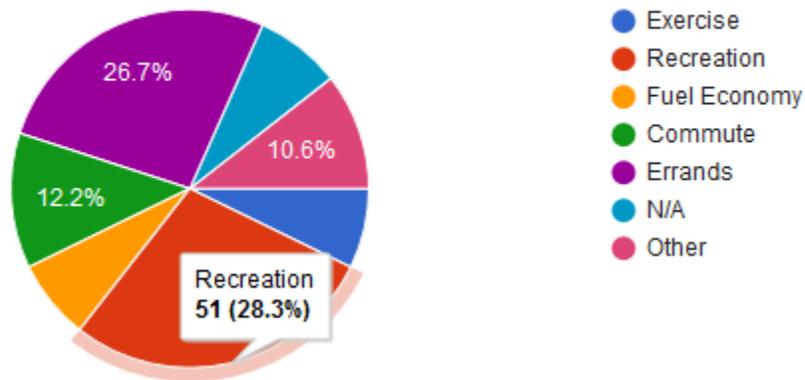
Destination counts by car, divided by on-campus vs. off-campus			
Destination	Total	Off-campus	On-campus
Clarkson University	362	346	16
Walmart	475	129	346
Price Chopper	121	55	66
Aldi	44	36	8
Science Center (CU)	30	30	0
Kinney's	82	27	55

Destination counts by foot/bike, divided by on-campus vs. off-campus			
Destination	Total	Off-campus	On-campus
Clarkson University	368	312	56
Maxfields	120	79	41
Stewarts (combined)	74	49	25
SUNY Potsdam	47	36	11

"Market St. Apt"	30	30	0
Clarkson physical therapy building	30	30	0
Kinney's	156	17	139
Food co-op	17	11	6

The majority of those who walked or bicycled said their primary purpose of this mode of transportation was not commute, but rather recreation, followed by errands.

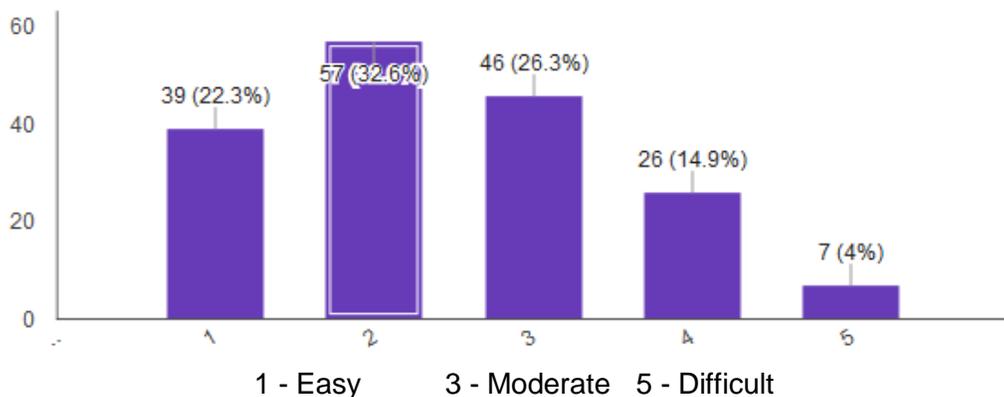
What is the primary purpose of your trips BY FOOT OR BIKE?



Additionally, there were no extreme concerns regarding difficulty of travel via foot or bicycle.

How would you rate your ease of travel BY FOOT OR BIKE to the destinations you've listed in the question above?

(175 responses)

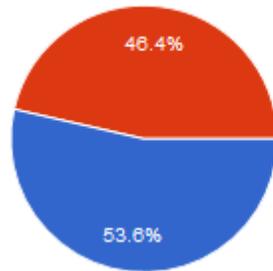


VI. Improvements

The next section of the survey sought to pinpoint students' concerns and possible improvements that could be made in the village and around campus to better facilitate non-vehicular traffic.

One area of interest was learning whether students felt there was a lack of bicycle racks around locations they frequently traveled to or would like to travel to, and if so, where they'd like to see more racks. The respondents were split on this matter.

Are there sufficient number of bike racks at off-campus locations?

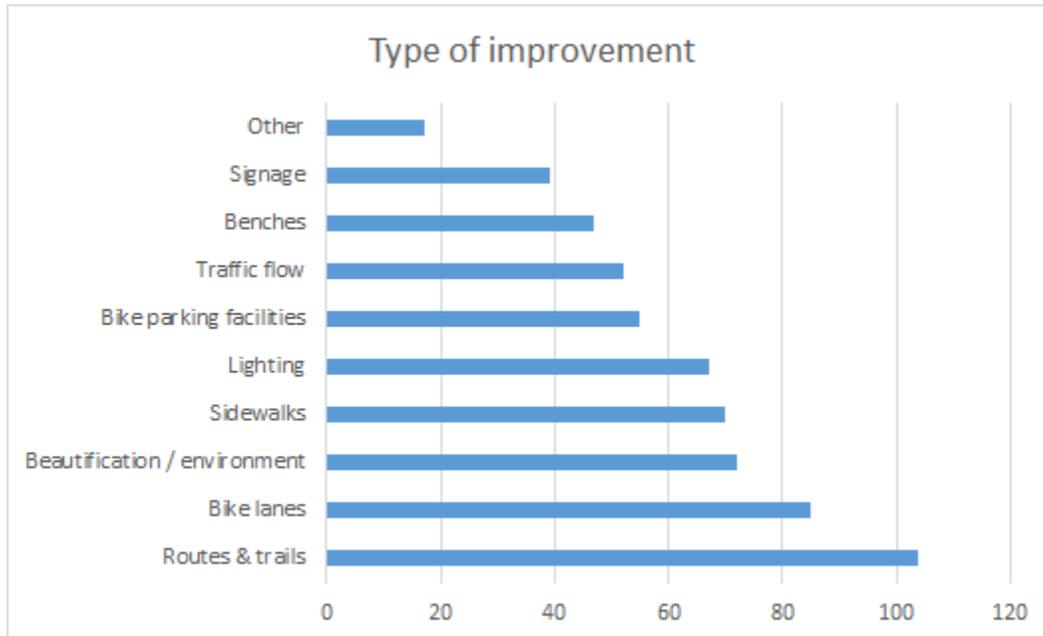


Yes 75 53.6%
No 65 46.4%

While the majority of those surveyed responded that there was a sufficient number of bike racks at off-campus locations, the margin is slim. Locations that students felt were in need of racks were ranked among popularity.

Most desired location of bike racks	
Market Street	8
Kinney's	6
Main street	6
Bagelry	4
IGA	4
Food co-op	2
Ives park	2
Maxfields	2
Post office	2
Roxy	2

Students were asked to identify improvements that they'd like to see in the village by checking as many options that applied.



Over 100 students were interested in seeing improvements to 'Routes and trails'. While the Clarkson campus has ROTC trails across Clarkson Avenue, there are no immediate bike trails dedicated for bikes.

The next most chosen category was for bike lanes. Funds received from the 2009 Recovery Act stimulus were used in part to finance the installation of bicycle lanes on either side of Clarkson Avenue. No such lanes exist along Pierrepont, or within the village itself, such as on Market St., Elm St., or Main St. Further analysis is performed on the demand for bike lanes and in which form they may come (e.g. conventional bike lanes, cycle tracks, buffered/non-buffered, etc.).

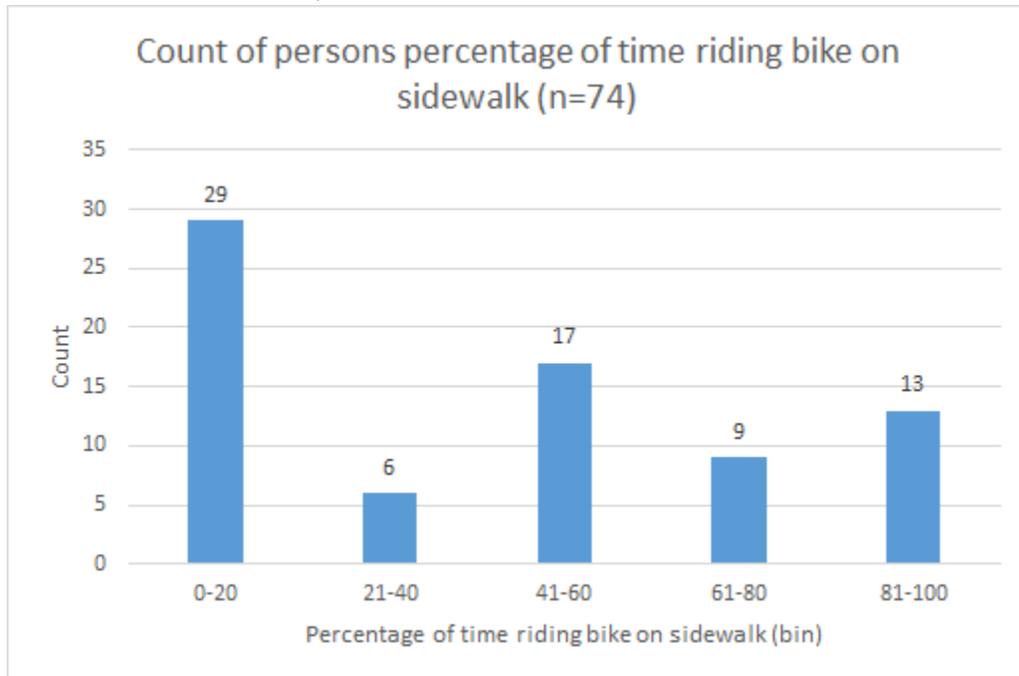
Interestingly, beautification ranked third on the result list. While efforts should be focused primarily on facilitating more bicycle traffic from either university campus to the village and improving connectivity, additions to the environment of these areas would fare well in providing a welcoming atmosphere for pedestrians and bicyclists.

Beautification is addressed in the recommendations section of the final report. There are great opportunities to engage college students and village citizens to improve the beauty of streets. Fred mentioned that heightened planting pots would allow older folk to plant trees. Environmental advocacy clubs on campus could also be engaged in this effort.

It is important to note that while respondents were asked to rank the need or desire for these improvements, they all go hand-in-hand. For instance, lighting is an important element for pedestrian safety, and thus would need to accompany any route or bike lane proposals.

Benches and bike-parking facilities would be recommended to support more travelers. Signage would play a key role in informing users of routes and destinations. Clearly, a great proposal would address most or all of these points.

Students were also asked about how much time they spend riding their bikes on the sidewalks. This question is meant to gauge whether there are adequate bike facilities available to riders. Of the 74 respondents, slightly less than 20% indicated that they ride on the sidewalk 81-100% of the time. The majority, on the other hand, only 0-20% of the time. Responses could be an indication that riders have safety concerns, and thus ride on the sidewalk to feel safer.

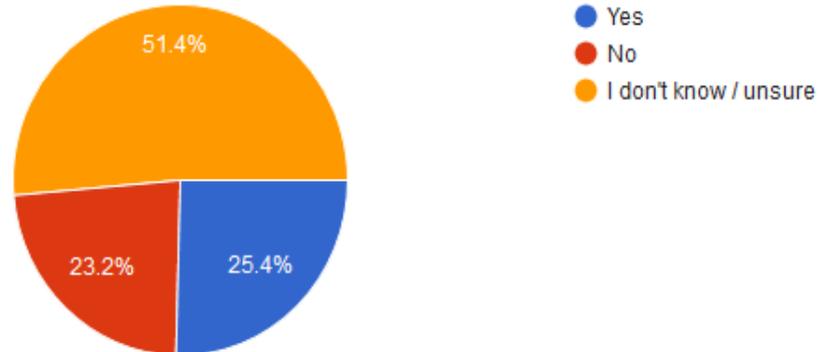


VII. Additional Information

Knowledge of university-sponsored bicycle programs was assessed.

To your knowledge, does your university have a bike renting/purchasing /lending program?

(181 responses)



"To your knowledge, does your university have a bike renting/purchasing/lending program?" response breakdown		
	Clarkson University	SUNY Potsdam
Yes	46	0
No	37	5
I don't know / unsure	83	10
Total	166	15

For either school, the majority of respondents (50% Clarkson, 66% SUNY) were uncertain whether or not their university offered a bike program.

Does the university offer a bike lending or renting program?	
Clarkson University	Yes http://www.clarkson.edu/campussafety/knightrider/index.html
SUNY Potsdam	No
SUNY Plattsburgh	Yes http://www.plattsburgh.edu/studentlife/recsports/bike-rental-program.php

Of the 166 Clarkson students, only 46 (27.7%) were able to correctly respond that the university does offer a bike lending program. The Knight Rider program facilitates bike rental for \$20/semester, including proper adjustment and repairs.

SUNY Potsdam does not have a bike lending or renting program, according to a response to an inquiry submitted on the 'Contact Us' form (http://www.potsdam.edu/about/contact_us.cfm). Therefore, only 5 of the 15 SUNY Potsdam respondents correctly answered the above question (granted that 15 total responses may be statistically insignificant).

While SUNY Plattsburgh is not in the scope of this research, for completeness, a link is provided to its bike rental program. It, too, offers bike rentals. There is no cost -- only a valid student ID is needed.

Finally, students were asked to list all of the events they have attended in the past 30 days, and which mode of transportation they used to get there. For the purposes of this data analysis, bus travel and carpooling were both counted as 'car'. The top few responses are shown below.

Popular events attended and mode of transportation indicated			
Event	Foot / Bike	Car	Not indicated
First Saturday	30	5	8
Sporting events (practices and matches)	16	9	4
Hockey games	8	4	7
Farmer's market	6	1	1
Greek life sponsored events	2	1	0
Fallfest (all campuses)	1	1	1

There were several other events which were attended only once or twice (at least according to the survey results) including CUOC Canoefest, a Crane music concert, a Real Rock Film Festival, etc.

This question in particular suffered from too many vague responses. For instance, some respondents wrote an event, but didn't include which mode of transportation they used to get there as requested by the question. Thus, the table above has a 'not indicated' column to handle these responses. Others used the space to list places (but not *events*), they've been to, which is what the previous sections of the survey covered.

Overall, First Saturday is the top event, and it also receives significant foot traffic. Sporting events (excluding hockey), which is the sum of practices, matches, etc. is also a top ranking event.

Of the 182 responses received on this question, 53 of them (29%) indicated no events were attended in the past 30 days (ex. blank entry, “N/A”, “nothing”, “no events”, etc.).

VIII. Summary and Future Improvements

Improvements to the survey structure

Some difficulties arose for crafting a survey format in Google Forms. The most notable issue was not being able to use the desired input structure for asking users to list the destinations they've been to in the past 30 days, and how many times, both by car and by foot/bike. The only way this could be accomplished was by allowing a paragraph response. Because of this, the tally for each category had to be done by hand. This proved time consuming and hindered the ease of analysis.

Of course, with any survey, some responses were not as adequate as was desired. Specificity can be insightful, and unfortunately even for questions that asked for specifics, some responses were general. It could be the case that performing the surveys in-person (e.g. setting up a survey booth / table on campus) would lead to a greater dialog. This, too, would be time consuming.

Lastly, the survey did not provide a space for “general comments” at the end, in case a student had anything else to say that wasn't covered by the survey. Luckily, a few respondents indicated this in one of the last paragraph response sections and noted their comments anyway. Below are these comments:

You did not provide a section for comments so I will put this here. Cars driving on Clarkson campus are not considerate of bikers. Many times cars blow by me at speed (usually over 30 on campus) like I am not there. Sometimes there is no sidewalk and I feel unsafe near the roads because of the speeds drivers are going. I have a mountain bike and always wear a helmet but many times I will cut through grass and the middle of campus just to avoid roads.

I only use a bike to travel during the summer because there is not enough space to store my bike on campus in the fall, winter, and spring months. Many individuals leave their bikes outside, but I am not a fan of this because it creates unnecessary wear. All events that I attend on campus during the academic months. I travel to by foot. I think that it would be great if sidewalks on campus were consistent for foot traffic. For example, when walking from Walker field to the quad, the side walk exists only 50% of the way up the hill into the lower quad parking lot. It would be more convenient, safer, and more ascetically pleasing for all if the side walk extended from the lower quad parking lot to the upper quad parking lot. Odd sidewalk gaps like this exist both on

campus and downtown, such as in front of The Computer Guys and Kinney's. These gaps cause pedestrians to walk in the street which is dangerous and annoying for all.

I've used my car to get to all events I've attended in the past 30 days. I don't live in downtown Potsdam so I find it unreasonable to walk or bike other than for leisure, as there's nothing reasonably close to my house.