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Study Purpose

- To understand the impact transportation, or the lack of transportation, has on the health and wellbeing of Niagara's post-secondary students

Supporting Council's Strategic Priorities

Healthy & Vibrant Community, and
Responsible Growth & Infrastructure Planning

Shape Niagara

- Priority 2: Transportation connecting people to jobs & services
- Priority 3: Supporting those in need through affordable housing & transit
- Priority 6: Active transportation
- Priority 10: Quality of life and public safety
- Priority 15: Youth and young family retention

Health Equity and Transportation

According to Lucas (2004), as referenced in Kenyon (2011), three different causes can prevent people from getting to where they want to go:

1. **Social inequities** that are experienced at the personal level (e.g., women travel less distance than men; lower income people use public and non-motorised transportation more than people with higher incomes)
2. **Transportation system inadequacies** that make the mode unacceptable, inaccessible, unaffordable and unavailable (e.g., poor public transit services for people who work outside of traditional “9-to-5” office hours)
3. **Community design**, which “includes both physical proximity of activities and environmental features, which influence the accessibility of non-motorised and motorised mobility (including crime; the condition of bike lanes; pavements and roads; street lighting; topography; weather)” (Kenyon, 2011, p. 765).

Wellbeing and Transportation

- Greater Education = Greater Health
- Being Connected to the Community
- Community Design Impacts Health
- Long Commutes = Poorer Health

High Level Overview of the Study

- The study was conducted in the fall term of 2018 and winter term of 2019
- Data we collected through an on-line survey that went out through student e-mails and photovoice interviews

Campus Stats \approx 30,000 Students

BROCK

- 18,000 Brock students
 - About 11% are international students

NIAGARA COLLEGE

- 11,800 students
 - About 40% are international students

Overall Survey Response

	n=1821
Brock University	61%
Niagara College	39%

Number of Survey Responses

Number of Survey Responses⁶, Brock University and Niagara College, Fall and Winter Terms, 2018-2019

Term	Niagara College		Brock University	
	Responded	After Cleaning	Responded	After Cleaning
Fall 2018	311	262	658	589
Winter 2019	531	453	577	517
Total	842	715	1235	1106

⁶To achieve statistical significance we aimed for the participation of 372 students from Niagara College and 377 students from Brock University in each term, in order to achieve a confidence level of 95% and a confidence interval of 0.05.

Demographics

Gender	%
Female	62.9
Male	26.6
Other gender identities	0.9
Did not identify gender	9.6
Total	100.0

Age Cohort	%
19 and under	30
20 - 24	48
25 -29	12
30 and over	10
Total	100

Student Municipality of Residence While at School, By Campus, 2018-2019

Municipality of Residence	Total %	Brock University %	Niagara College %
Fort Erie	1.5	0.9	2.4
Grimsby	1.3	1.8	0.4
Lincoln	1.2	1.4	1.0
Niagara Falls	16.5	8.5	28.9
Niagara-on-the-Lake	3.7	1.2	7.7
Pelham	1.3	1.1	1.6
Port Colborne	0.9	NR	1.8
St. Catharines	39.4	50.2	22.6
Thorold	16.8	25.5	3.3
Wainfleet	0.4	NR	NR
Welland	11.2	2.7	24.3
West Lincoln	0.4	0.4	NR
Outside Niagara	5.3	5.5	5.1

Source: *Students on the Move Survey, 2018-2019* (n = 1,343)

NR = Not reportable due to low response rate

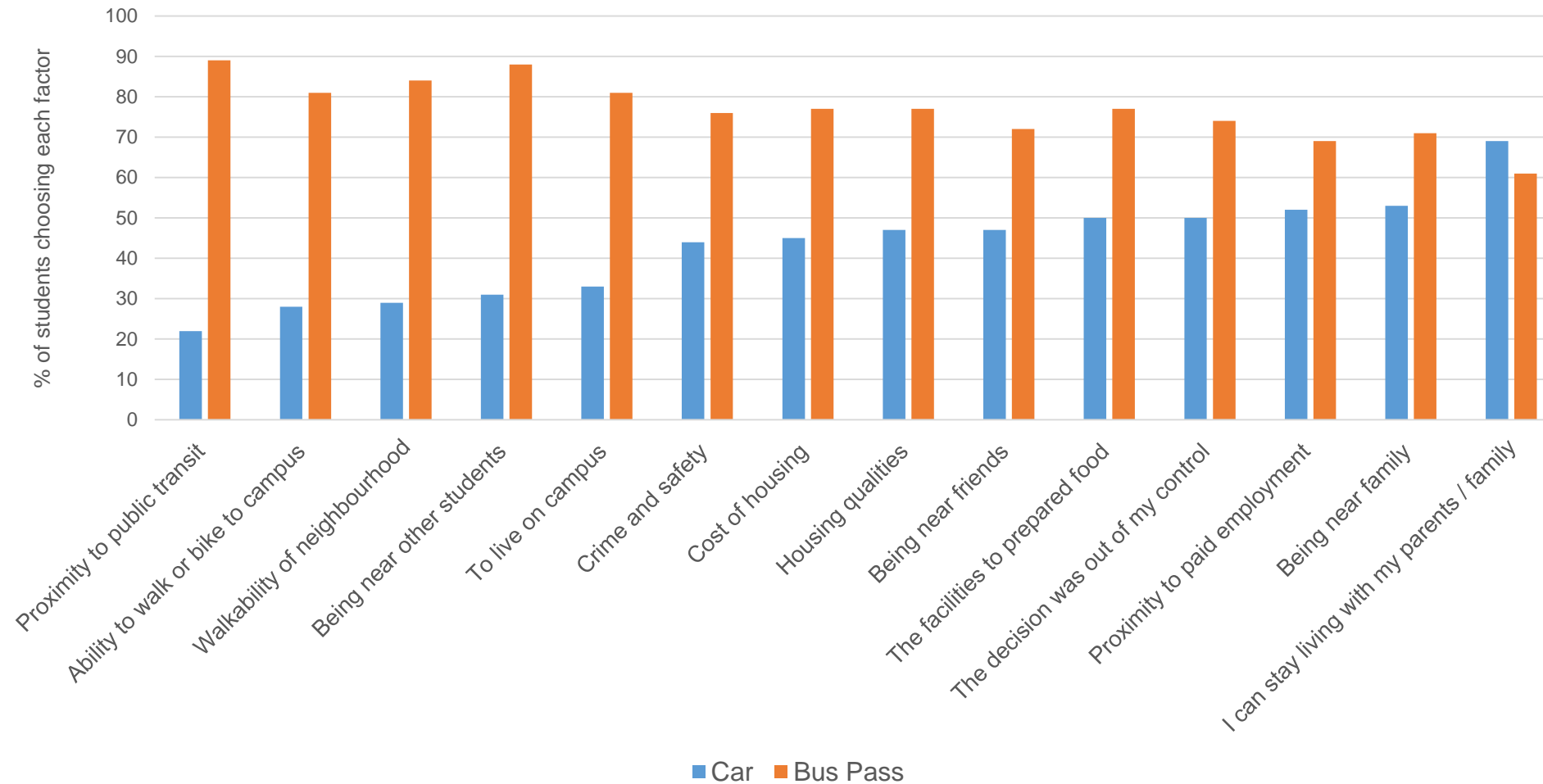
Domestic & International Students

Municipality	Campus					
	Brock Main Domestic	NC NOTL Domestic	NC Welland Domestic	Brock Main International	NC NOTL International	NC Welland International
Niagara Falls	9%	14%	19%	9%	36%	55%
Niagara-on-the-Lake	1%	17%	2%	NR	18%	NR
St. Catharines	47%	27%	23%	72%	34%	9%
Thorold	27%	9%	NR	16%	NR	NR
Welland	3%	7%	36%	NR	7%	34%
Other Niagara	7%	13%	15%	3%	5%	2%
Outside of Niagara	6%	13%	5%	NR	NR	NR

Connection Between Municipality & Living Situation

	Homestay	Live alone	Live with family/parents	Live with partner	Live with roommates	Other	With children	Grand Total
Fort Erie	0%	0%	67%	15%	15%	0%	4%	100%
Grimsby	0%	13%	74%	9%	4%	0%	0%	100%
Lincoln	0%	0%	86%	9%	5%	0%	0%	100%
Niagara Falls	0%	7%	43%	10%	38%	1%	1%	100%
Niagara-on-the-Lake	0%	6%	30%	9%	53%	2%	0%	100%
Other	0%	2%	65%	13%	15%	3%	1%	100%
Pelham	0%	4%	91%	0%	4%	0%	0%	100%
Port Colborne	0%	0%	63%	25%	0%	6%	6%	100%
St. Catharines	1%	8%	23%	11%	56%	2%	0%	100%
Thorold	0%	5%	11%	4%	79%	1%	0%	100%
Wainfleet	0%	0%	86%	0%	0%	0%	14%	100%
Welland	1%	7%	26%	13%	48%	2%	1%	100%
West Lincoln	0%	0%	63%	25%	13%	0%	0%	100%
Grand Total	0%	7%	31%	10%	50%	2%	1%	100%

Housing Qualities & Transportation



Transportation Modes

Do you ride a motorbike	2%
Do you ride a moped or scooter	1%
Are you a carshare member?	8%
Did you use a rideshare (carpooling) service in the last year? Ex. Niagara Rideshare	11%
Do you have a monthly or annual bus pass?	75%
Do you have a full driver's licence? This includes G, G2, unrestricted licence issued outside of Ontario, but not a G1	67%
Do you own a car or have use of your "own" car?	45%
Can you borrow a car from friends or family when needed? (yes)	33%
Can you borrow a car from friends or family when needed? (sometimes)	21%
Do you own a bike that is available to you while you are at school?	22%
Percentage of those who have a G licence that own a car or have use of their "own" car.	67%

Commuting to School Seasonal Comparison

Campus	Bus		Car alone		Car as passenger		Walk		Bike		Uber/Taxi	
	Fall	Winter	Fall	Winter	Fall	Winter	Fall	Winter	Fall	Winter	Fall	Winter
Brock Main	66	81	42	37	44	44	29	27	4	3	17	24
Brock MW*	69	67	56	60	63	40	31	NR	0	0	NR	NR
Niagara NOTL	42	41	53	48	29	32	19	27	7	5	17	15
Niagara Welland	51	35	37	51	27	28	35	24	6	5	10	9

Commute to Co-op Placements

Interviewer: "So, do you have an automobile yourself?"

Participant: "I do not. I am looking to get one for next year, once I get a job and everything."

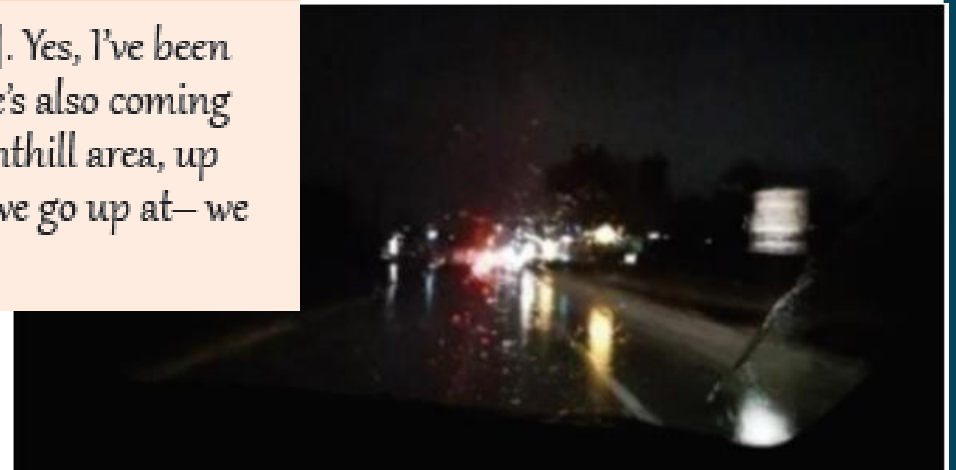
Interviewer: "Right, and I guess that's kind of the tricky part too. You need a car to get to those jobs for those hours."

Participant: "But I need the hours and the money to get the car."

Interviewer: "Right, how have you managed your internships then?"

Participant: "Um, I've been carpooling, which actually is here [showing picture]. Yes, I've been carpooling with one of my classmates that goes to the same placement as me. He's also coming from Welland. So, we usually go up Highway 20, all the way from around the Fonthill area, up until Lundy's Lane, where we go to placement at Morrison and Dorchester. Yes, we go up at— we get there for 6:45 [a.m.]."

Photovoice Participant 17, Female, Niagara College,
April 10, 2019



Student Satisfaction with Commute to School

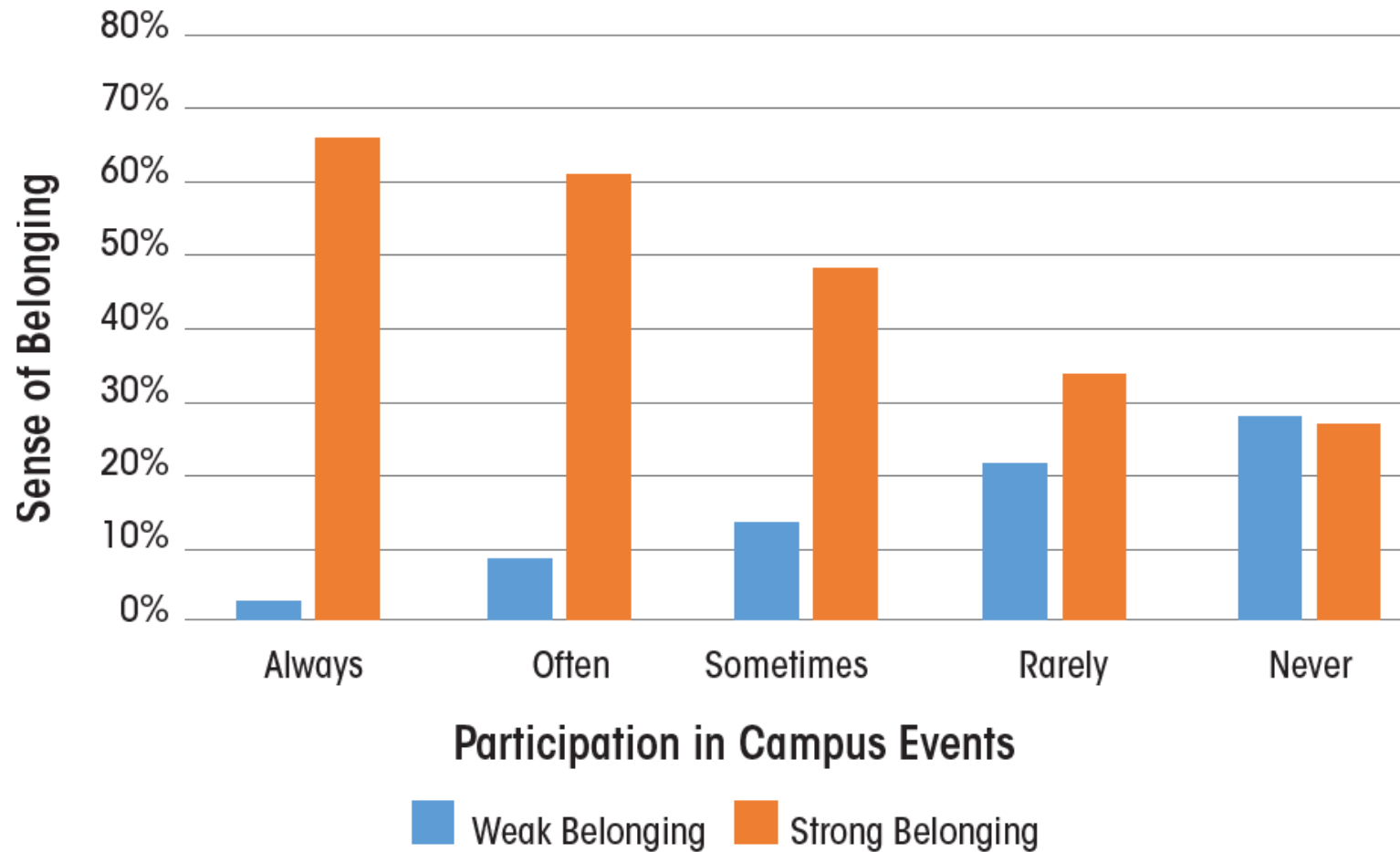
Level of Satisfaction	Brock University Main	Brock University MIW	Niagara College NOTL	Niagara College Welland
Satisfied/ Very Satisfied	49%	42%	40%	40%
Neither Satisfied nor Dissatisfied	33%	39%	38%	39%
Unsatisfied/ Very Unsatisfied	19%	19%	24%	20%

Impact of Transportation on Wellbeing

Do your available means of transportation discourage you from coming to campus?

Student Population	Yes	Sometimes	No
Domestic (n=1155)	36%	20%	44%
International (n=347)	40%	25%	35%
Brock main campus (n=881)	40%	22%	37%
Marilyn I. Walker campus (n=28)	36%	21%	43%
Niagara-on-the-Lake Campus (n=234)	36%	21%	43%
Welland campus (n=352)	30%	19%	51%
All students	37%	21%	41%

Belonging & Campus Event Participation



Impact of Transportation on Participation

Proportion of Students Indicating that Transportation Often or Always Impacted Their Ability to Participate in Events and Activities, By Campus

Campus	On campus events & activities	Off campus events & activities
Brock Main	32%	37%
Brock MIW	30%	43%
Niagara NOTL	44%	45%
Niagara Welland	37%	37%

Employment

Employment by Municipality of Employer and Student's Campus

Place of Work	Primary Campus Attended			
	Brock University		Niagara College	
	Main Campus	MIW Campus	NOTL Campus	Welland Campus
St. Catharines	55%	55.6%	20.7%	19.4%
Niagara Falls	12.2%	27.8%	30.5%	42.6%
Niagara-on-the-Lake	8.1%	NR	26.8%	7.9%
Welland	2.8%	NR	3.7%	15.7%
Other	21.9%	NR	18.3%	14.4%

Source: *Students on the Move Survey, 2018-2019, (n = 957)*

NR = Not reportable due to low response rate

Employment Continued

Distance to employment

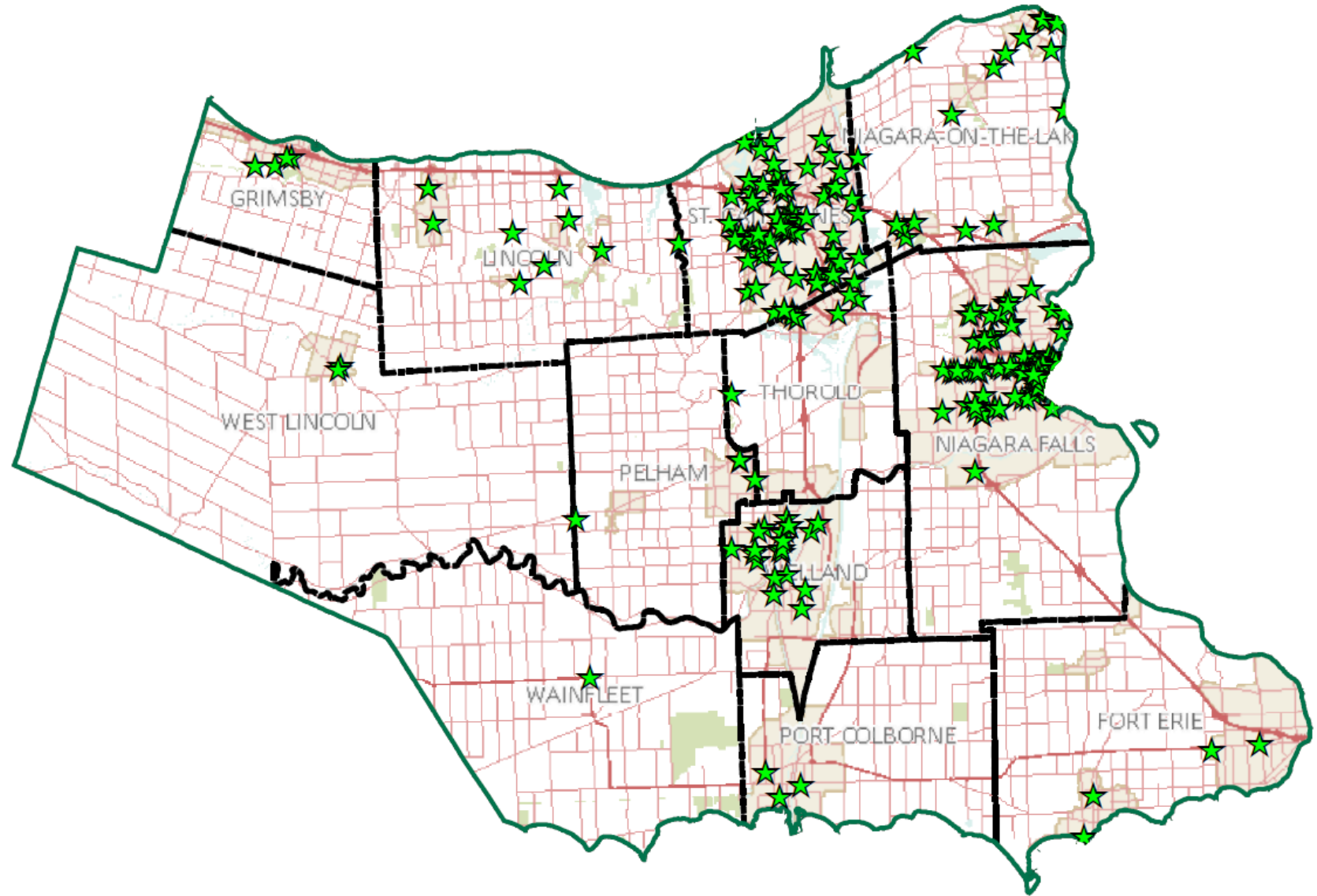
- Less than 3 km = 29%
- 4-6 km = 26%
- 7-10 km = 18%
- More than 10 km = 27%

Modal Type and Number of Hours Worked

Transport Mode	Hours Worked/Week				
	<10	11-20	21-30	31-40	>40
Public Transit	76%	73%	59%	40%	30%
"Own" Car	53%	48%	71%	83%	90%
Bicycle	31%	24%	28%	38%	40%
Rideshare	13%	12%	5%	4%	0%
Car share	9%	8%	10%	20%	20%
Motorcycle	3%	2%	0%	6%	10%

Source: *Students on the Move Survey, 2018-2019, (n = 964)*

Employment Locations



Future Directions

- Cycling and Bike Share
- Walking
- Public transit
- Ride share
- Carshare
- Shuttles
- Women
- International students
- Inclusion of all municipalities

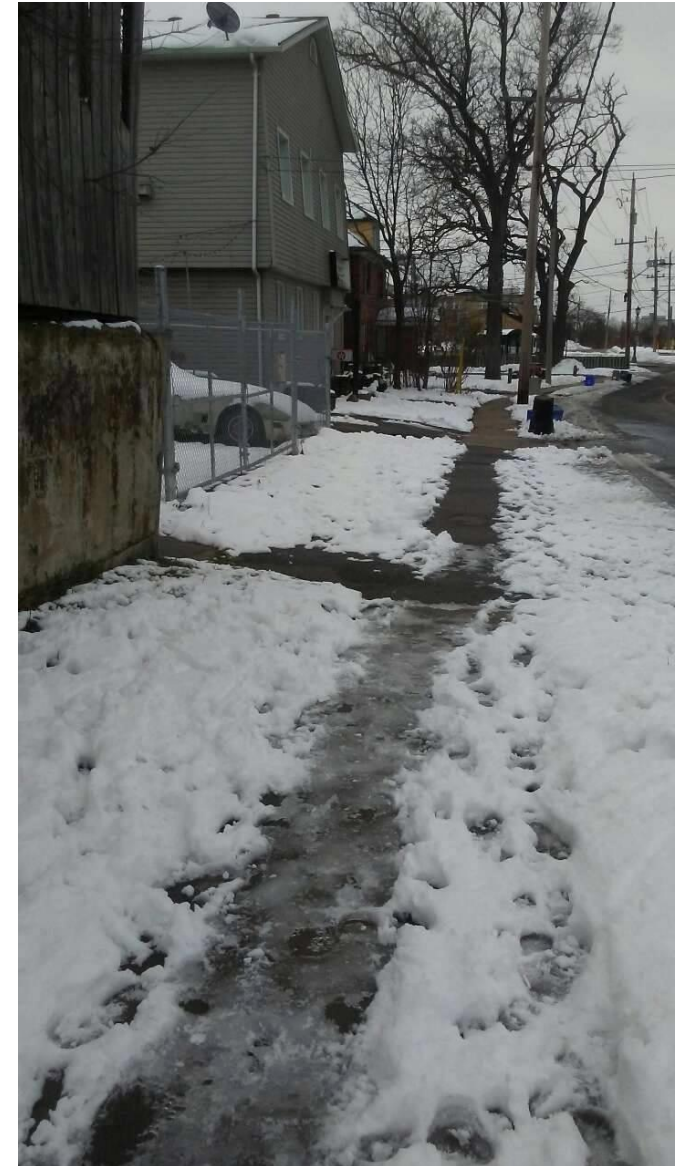


Future Direction: Cycling and Bikeshare

- Bicycles third most available for of transportation
- First and last 'mile' of transit trip
- Bikeshare

Future Direction: Walking

Snow removal on sidewalks



Future Direction: Public Transit

Themes:

- frequency of buses,
- timeliness or tardiness of buses,
- connectivity between buses,
- evening and weekend buses, and
- connections to other modes of transportation



Future Direction: Rideshare (Carpooling)

- Opportunity for a more formalized carpooling program
 - Perhaps best post-COVID

“Other than walking, my main method of commuting is done in the passenger seat of someone else’s vehicle. Without access to a vehicle, grocery shopping would be one of the most inconvenient things in the world [...] I would have next-to-no social life, and I wouldn’t be able to pursue certain volunteer [or] extra-curriculars off-campus. I live in an area where the closest grocery store is a 10-minute drive, and the nearest downtown is a 10 to 15-minute drive. Volunteering and extra-curriculars are either in St. Catharines, or somewhere that can only be accessed by vehicle I know that if I did not have the means to get around, as I do now, my mental health would suffer. I am an individual who lives with at least two anxiety disorders. It would be very easy for me to hole up in my room or the library and talk to no one until I had to. I am grateful for every ride I have ever received here. My school experience would have been completely different.”

Participant 14, Niagara College Niagara-on-the-Lake campus, March 14, 2019

Future Direction: Carshare

- 67% of students have a full G class licence
- Full-time car ownership may be out of financial reach
- Could increase mobility suite

Future Direction: Shuttles



Future Direction: Women

“So, I will leave things early to get home before it gets dark., because it’s just stressful for me. I don’t enjoy— and I think other people feel the same way, especially women. You know, not to stereotype or anything, it is definitely something that we deal with pretty frequently, and I think definitely something could be done about it. [...] Yeah, you know, I walk with my cell phone in my hand. I actually have an emergency trigger on my phone. So, if I hit my locked button 5 times, it sets off an alarm and calls 911 for me. So, like, things like that, I have safety precautions in place. But on the flip side, should I have to have them in place? What could be done to make this safer for me.”

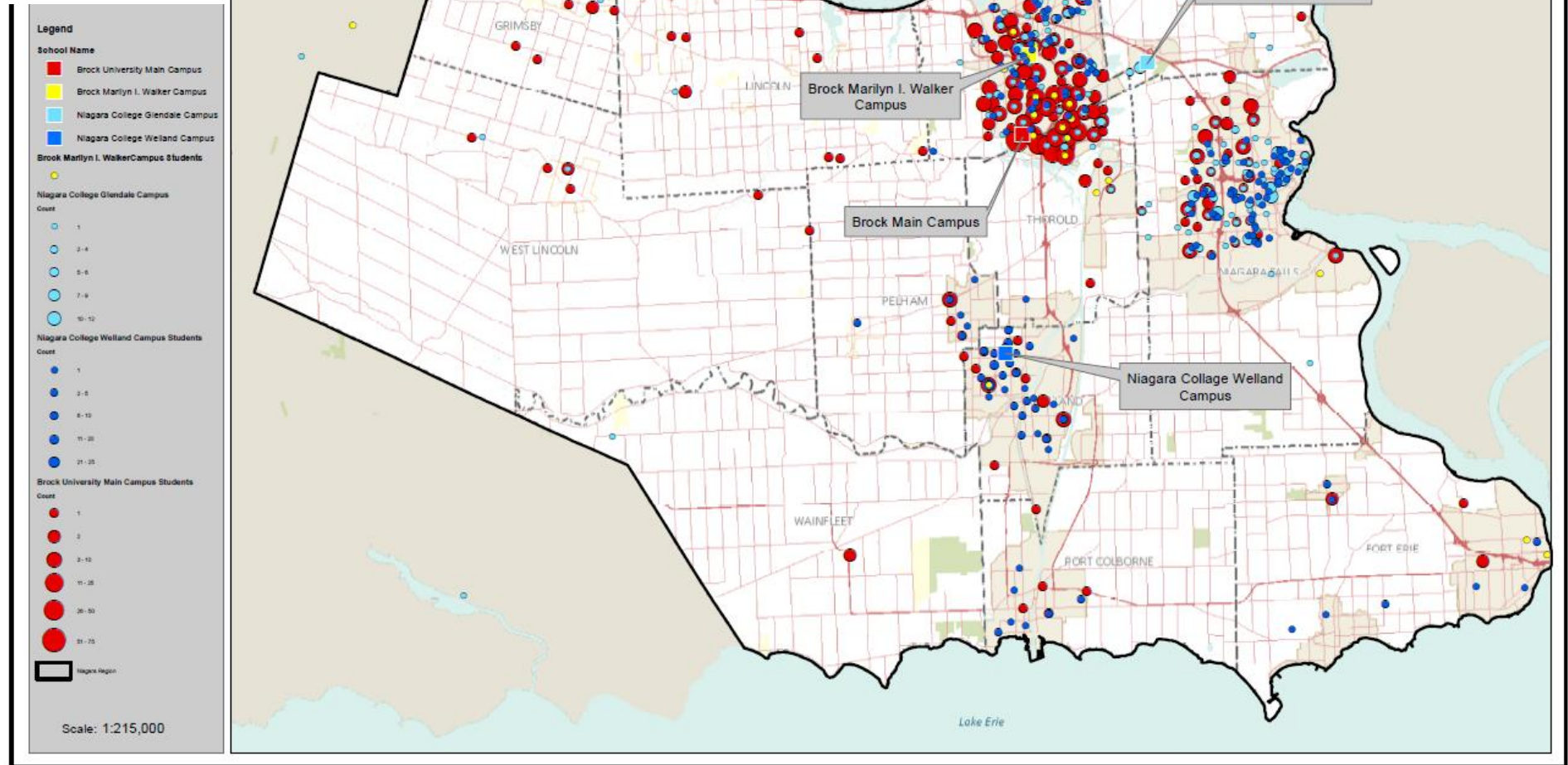
Photovoice Participant 7, female, Niagara College Welland, December 20, 2018

Future Direction: International Students

Comparison of Difficulty Finding Transportation for Daily Travel, Domestic vs. International Students

Level of Difficulty	Domestic Students	International Students
Easy or Very Easy	48%	33%
Neutral	26%	29%
Difficult or Very Difficult	20%	36%
Not Applicable	6%	3%

Future Direction: Inclusion of all Municipalities



Next Steps

- Research Steering Committee provided some potential actions that could support these future direction
- Creating a new Implementation Committee
 - Mobilize the potential actions
 - Provide addition actions to support the future directions
 - Take initiative to implement the actions
 - Report back on initiatives

Questions?

