

# Commuting at Concordia: A Multi-Year Trend Analysis

Noelle Racine  
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## Introduction

Concordia University comprises a student base of over 46,000 and employs over 6,000 individuals<sup>1</sup>. As early as 2003, the University began conducting a commuter habits survey in order to better understand and evaluate the commuter trends and habits of the university population. Respondents were asked to provide demographic information as well as specific information regarding their commute during their one-way trip to their primary university campus. Each time, a representative sample of students, faculty, and staff were invited to participate in the survey by email<sup>2</sup>. A review of the commuter data collected from 2013, 2017 and finally 2019 reveals that there is still potential for a modal shift of single occupancy automobile users towards more sustainable forms of transportation<sup>2</sup>. The primary focus of the following research is to assess changes in commuter habits and preferences over time in order to establish a set of recommendations for the University to help encourage a modal shift away from single occupancy automobile use on campus.

## Results

An analysis of the survey data from 2013, 2017 and 2019 reveals a decrease in active transportation use from 2013 - 2019 within the study region. Single occupancy automobile use has remained relatively static over time and represents 6-7% of total commutes in the study region

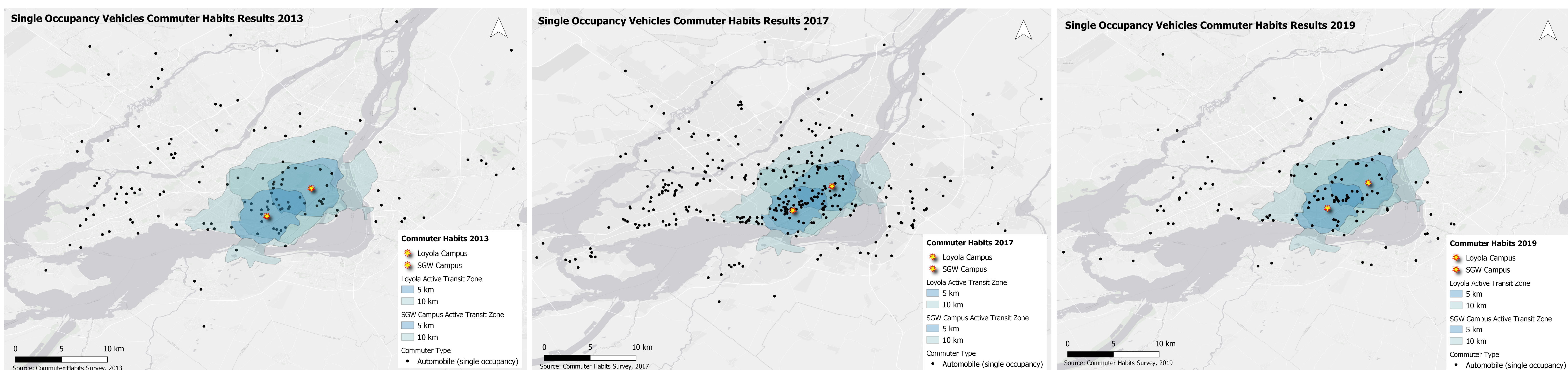


Table 1: Commuter Habits 2013-2019 Results

Year	Category	Percentage
CHS 13	Total Respondents in Active Transit Zone	65%
	Cyclists and Pedestrians in Active Transit Zone	36%
	Motorists in Active Zone	6%
CHS 17	Respondents in Active Transit Zone	63%
	Cyclists and Pedestrians in Active Transit Zone	23%
	Motorists in Active Zone	6%
CHS 19	Respondents in Active Transit Zone	66%
	Cyclists and Pedestrians in Active Zone	24%
	Motorists in Active Zone	7%

## Conclusion

Encouraging a modal shift towards more sustainable modes of transportation is important in terms of reducing overall indirect (Scope 3) emissions from the Concordia community's commute to campus. The graph to the right illustrates total emissions as a result of commuting to campus in 2019, based on the commuter habits survey responses.

Based on the figures above, it was possible to estimate that total Scope 3 commuting emissions at Concordia University amount to **15,893.51 mtCO<sub>2</sub>e per year<sup>4</sup>**

## Methodology

**Step One:** Define the study area of 5km and 10km based on the average commute distance of current active commuters (cyclists and pedestrians).

**Step Two:** Create distance buffers in GIS using Open Street Maps shortest path distance for automobiles.

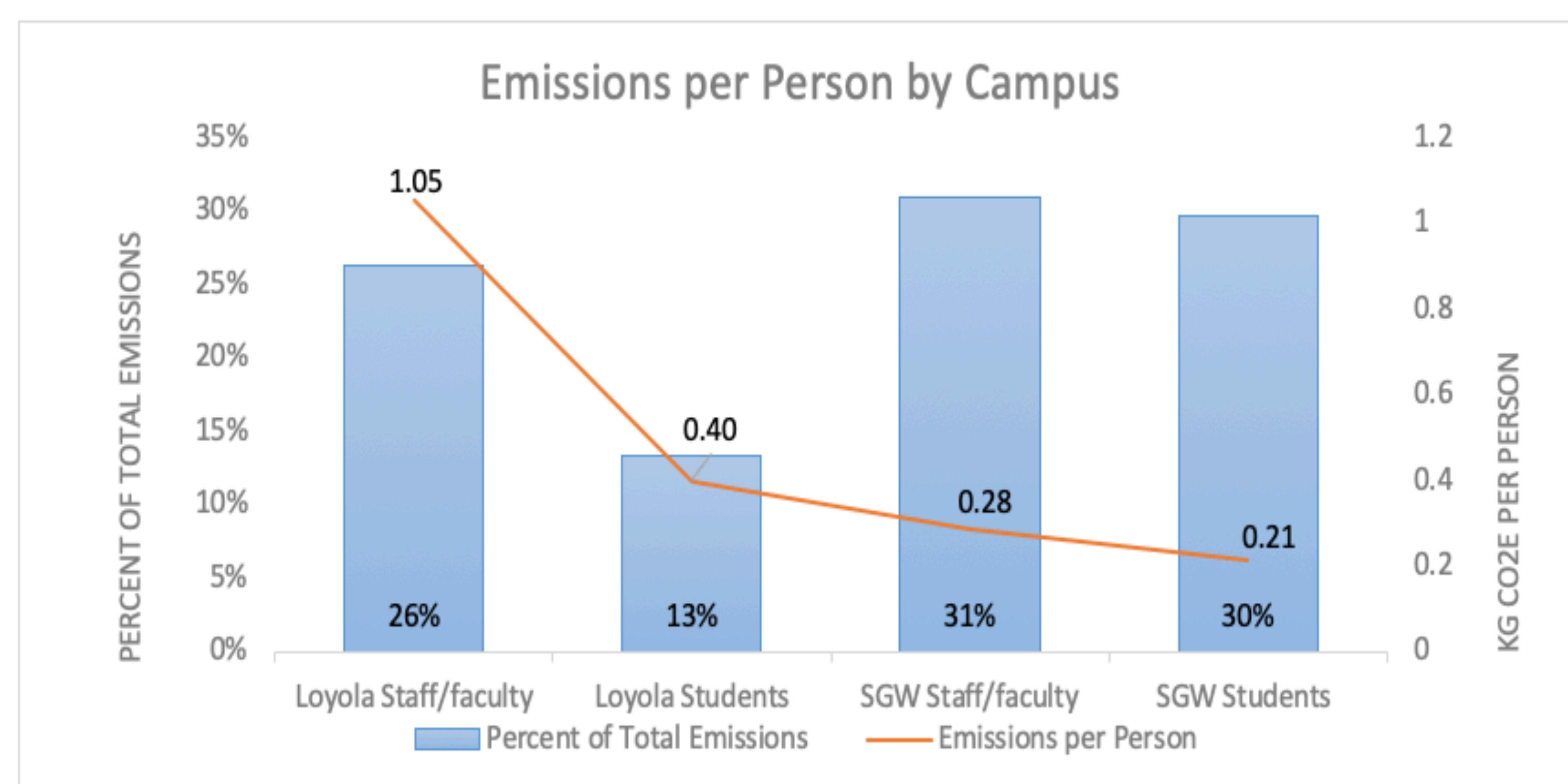
**Step Three:** Geolocate self-reported postal codes and use network and spatial analysis to compute travel times and distances for respondent commutes from home to their self-reported primary university campus<sup>3</sup>

**Step Four:** Isolate single occupancy motorists within each commuter habits survey (2013, 2017 and 2019) based on their home locations

**Step Three:** Create maps for each study year and complete data analysis for motorists living in the active transit zone

## University Recommendations

1. Implement specific targets to encourage a modal shift towards more sustainable modes of transportation.
2. Incentivize and encourage active transportation among all populations
3. Incentivize and encourage carpooling and public transportation for staff/faculty with a focus on those travelling to Loyola campus.



## References

1. Concordia (2018, May 31) *Fast Facts: Concordia in numbers*. Retrieved from <https://www.concordia.ca/about/fast-facts.html>.
2. Yuwei, Wang (2017, September) *Commuter Habits Survey Report*. Concordia University internal communication; Office of Institutional Planning and Organization (2014). *Commuter Habits Results Summary*. Concordia University Internal Communication
3. CanMap Postal Suite: CanMap Multiple Enhanced Postal Code. Markham: DMTI Spatial Inc., 2017.
4. Racine, N (October, 2019) *Commuter Habits 2019 Report*. Concordia University Internal Communication