

# **Health and Equity**

## **GGR424 - Transportation Geography & Planning**

March 3, 2022

## Announcements

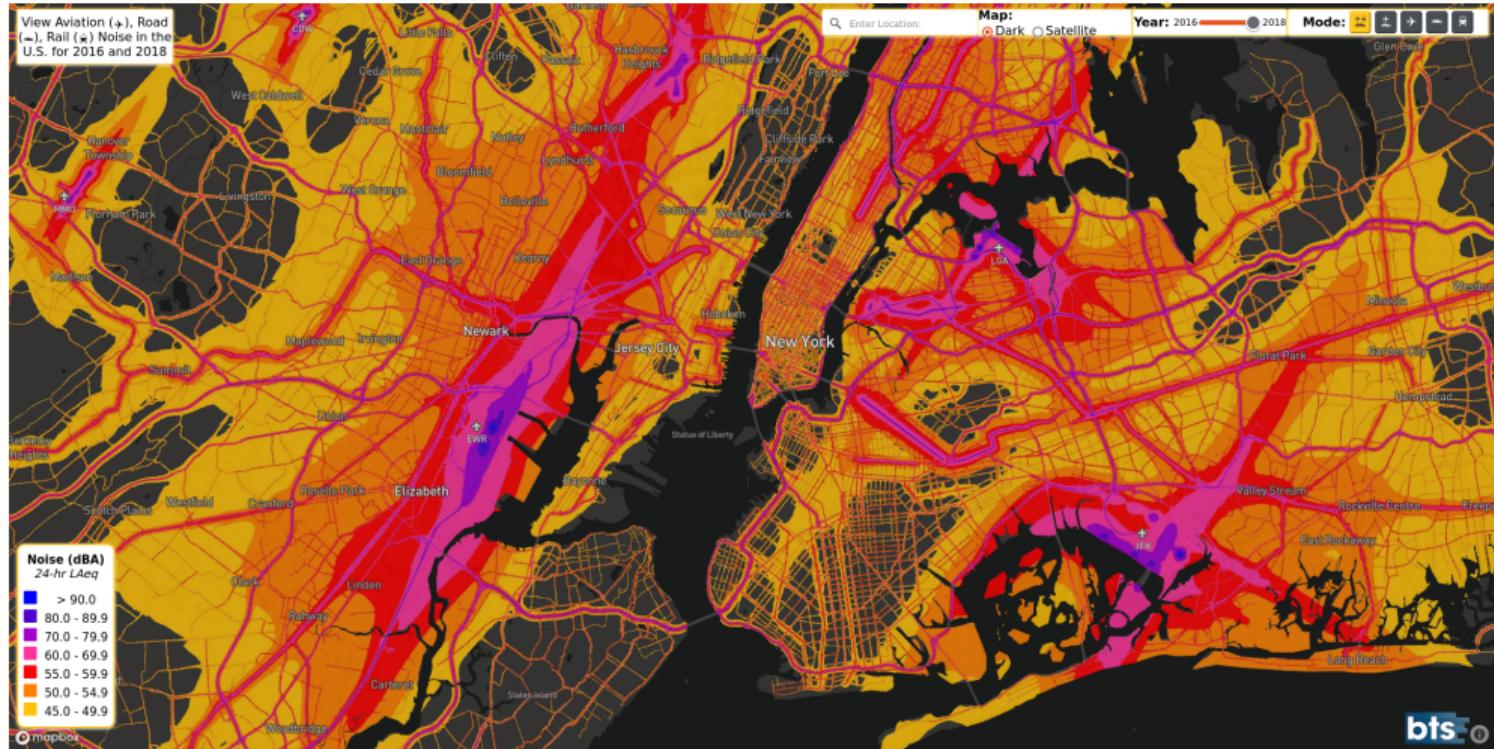
- ▶ Project Proposal due March 10

## Today

- ▶ Health impacts of transportation (e.g. pollution, noise, physical activity)
- ▶ How the costs and benefits of transportation are (in)equitably distributed

How can urban transportation affect health and well-being?

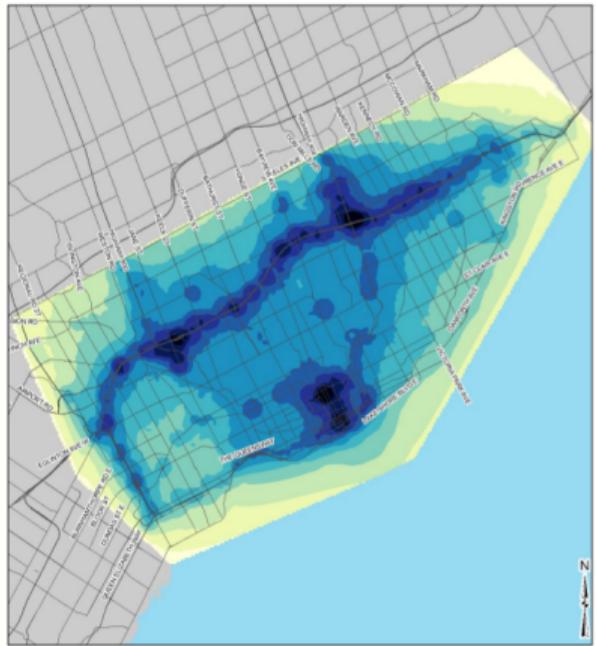
# Noise



Source: <https://maps.dot.gov/BTS/NationalTransportationNoiseMap/>

City report on health impacts of noise <https://www.toronto.ca/wp-content/uploads/2017/11/8f98-tph-How-Loud-is-Too-Loud-Health-Impacts-Environmental-Noise.pdf>

# Air Pollution



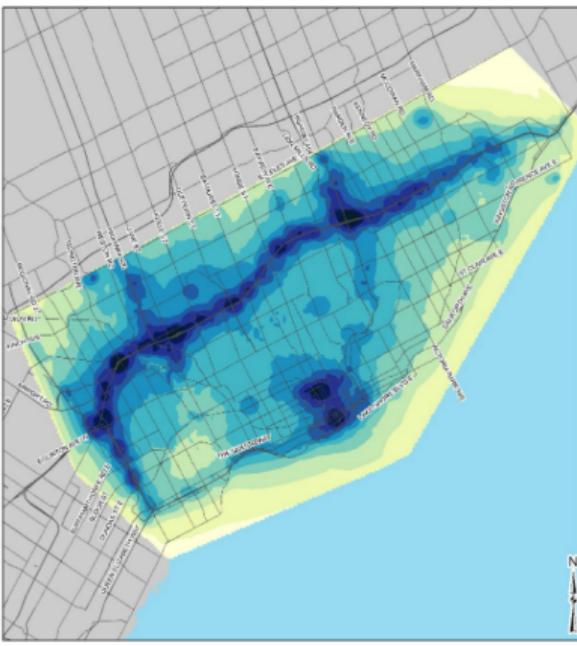
LEGEND

benzene-a	ANNUAL AAQC ( $\mu\text{g}/\text{m}^3$ ) = 0.45	0.9163 - 1.0923
	0.5641 - 0.6522	1.0924 - 1.1803
	0.6523 - 0.7402	1.1804 - 1.2683
	0.7403 - 0.8282	1.2684 - 1.3563
	0.8283 - 0.9162	1.3564 - 1.4443

10.00 1 2  
SCALE IN KILOMETERS

ANALYSIS MAP -  
ANNUAL AVERAGE CONCENTRATION  
BENZENE ANNUAL AVERAGE  
CONCENTRATIONS FROM ALL EMISSION SOURCES

Environment & Energy Division FIGURE: C-03



LEGEND

pm10-a-a	ANNUAL AAQC ( $\mu\text{g}/\text{m}^3$ ) = N/A	19.01 - 21.69
	11.26 - 13.36	21.7 - 23.77
	13.37 - 15.44	23.78 - 25.85
	15.45 - 17.52	25.86 - 27.93
	17.53 - 19.6	27.94 - 30.01
		30.02 - 32.09

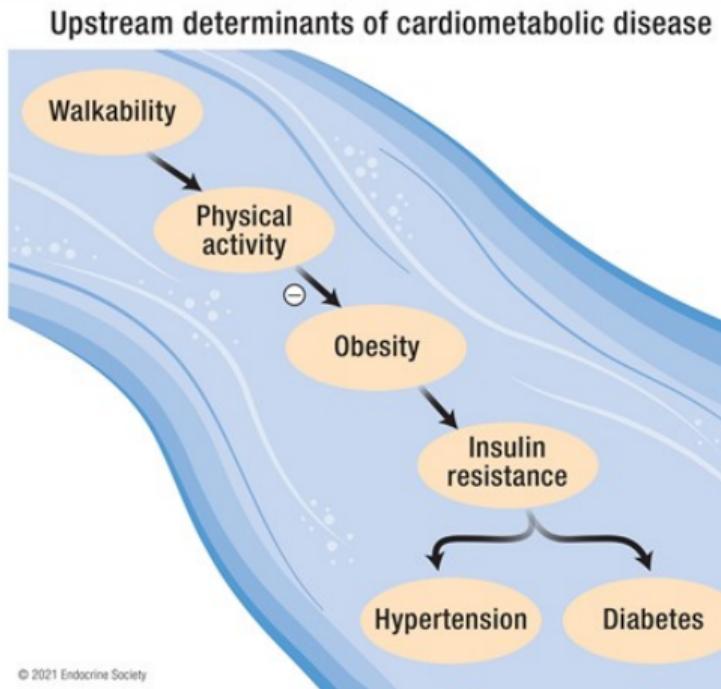
10.00 1 2  
SCALE IN KILOMETERS

ANALYSIS MAP -  
ANNUAL AVERAGE CONCENTRATION  
PARTICULATE MATTER  $<10\mu\text{m}$  ANNUAL AVERAGE  
CONCENTRATIONS FROM ALL EMISSION SOURCES

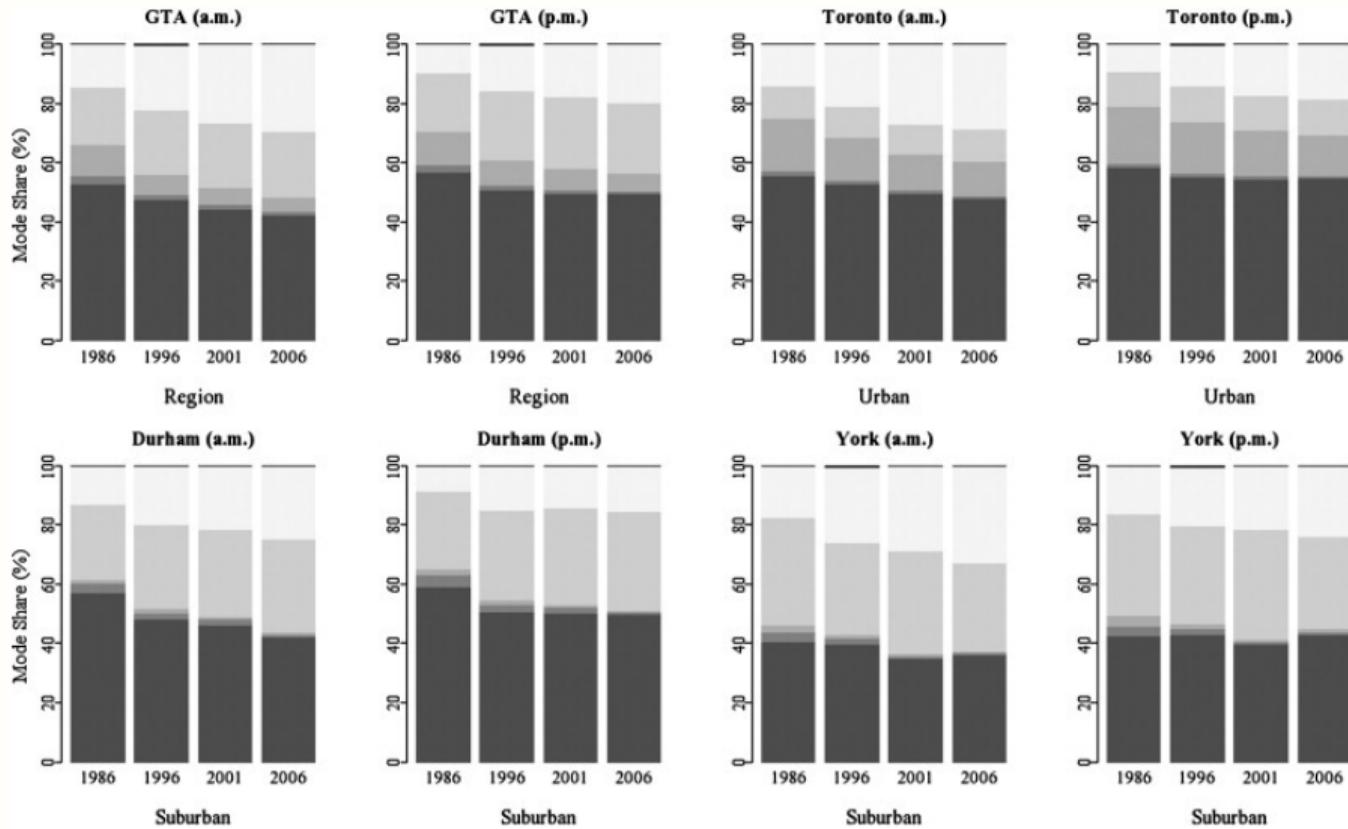
Environment & Energy Division FIGURE: C-22

City of Toronto. Avoiding the TRAP: Traffic-Related Air Pollution in Toronto and Options for Reducing Exposure. Technical Report. October 2017.: <https://www.toronto.ca/legdocs/mmis/2017/h1/bgrd/backgroundfile-108070.pdf>

# Active Travel and Physical Health



The weight of place: Built environment correlates of obesity and diabetes <https://doi.org/10.1210/endrev/bnac005>



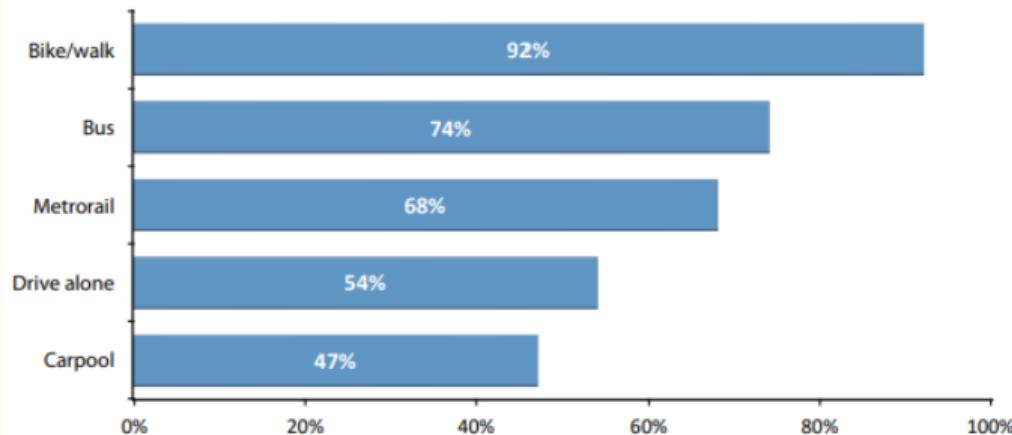
School travel mode share (% of trips) by jurisdiction and year (children and youth, 11–13 years of age) in the Greater Toronto Area, Canada (1986–2006).

<https://doi.org/10.1016/j.ypmed.2009.03.001>

## Satisfaction of travel

**Satisfaction with Commute by Primary Commute Mode – Lived in Arlington**  
**Percent Rating Commute a 4 or 5**

(Bike/walk n = 73, Bus n = 63, Metrorail n = 253 Drive alone n = 331, Carpool n = 21)



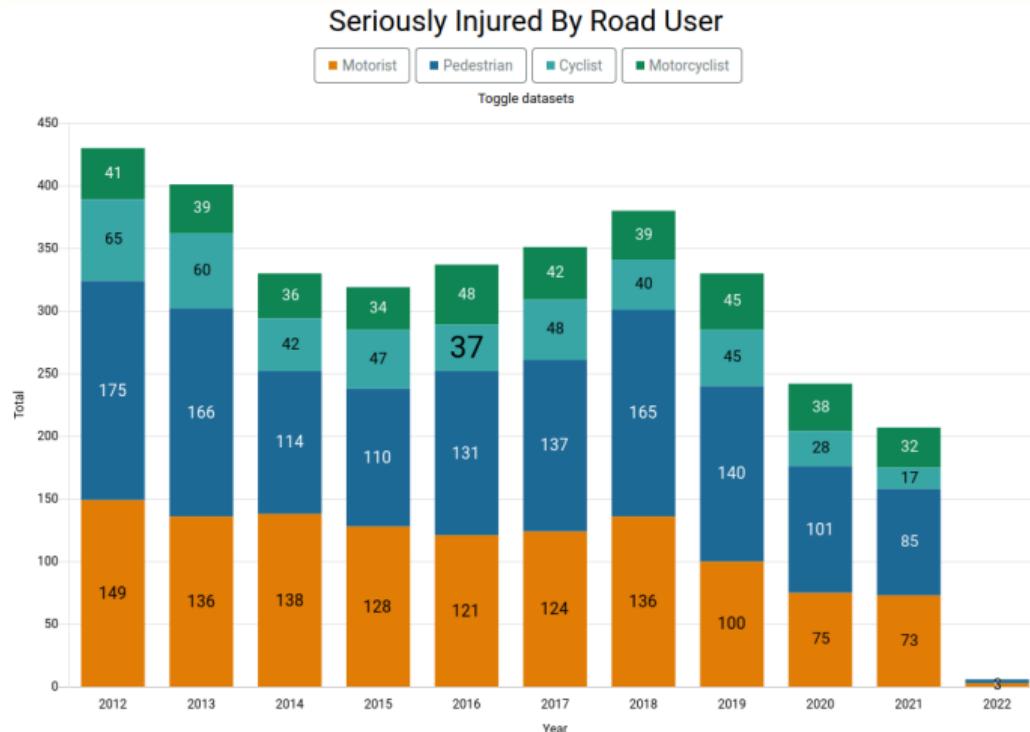
<https://mobilitylab.org/2020/09/29/the-pursuit-of-happiness-how-commute-mode-affects-commute-mood/>

## **Long commutes**

From the 2016 Canadian census:

- ▶ 9.7% have a commute greater than 60 minutes
- ▶ 3.5% have a commute greater than 75 minutes
- ▶ 2.5% have a commute greater than 90 minutes

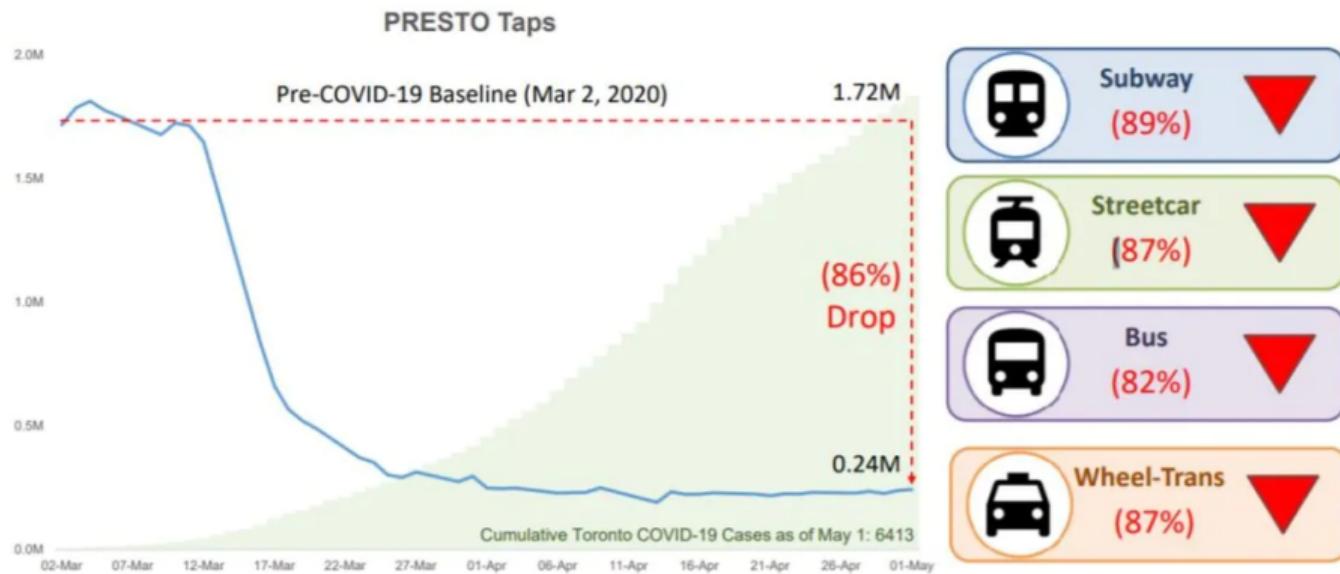
# Safety, e.g. Collisions



<https://www.toronto.ca/services-payments/streets-parking-transportation/road-safety/vision-zero/vision-zero-dashboard/seriously-injured-vision-zero/>

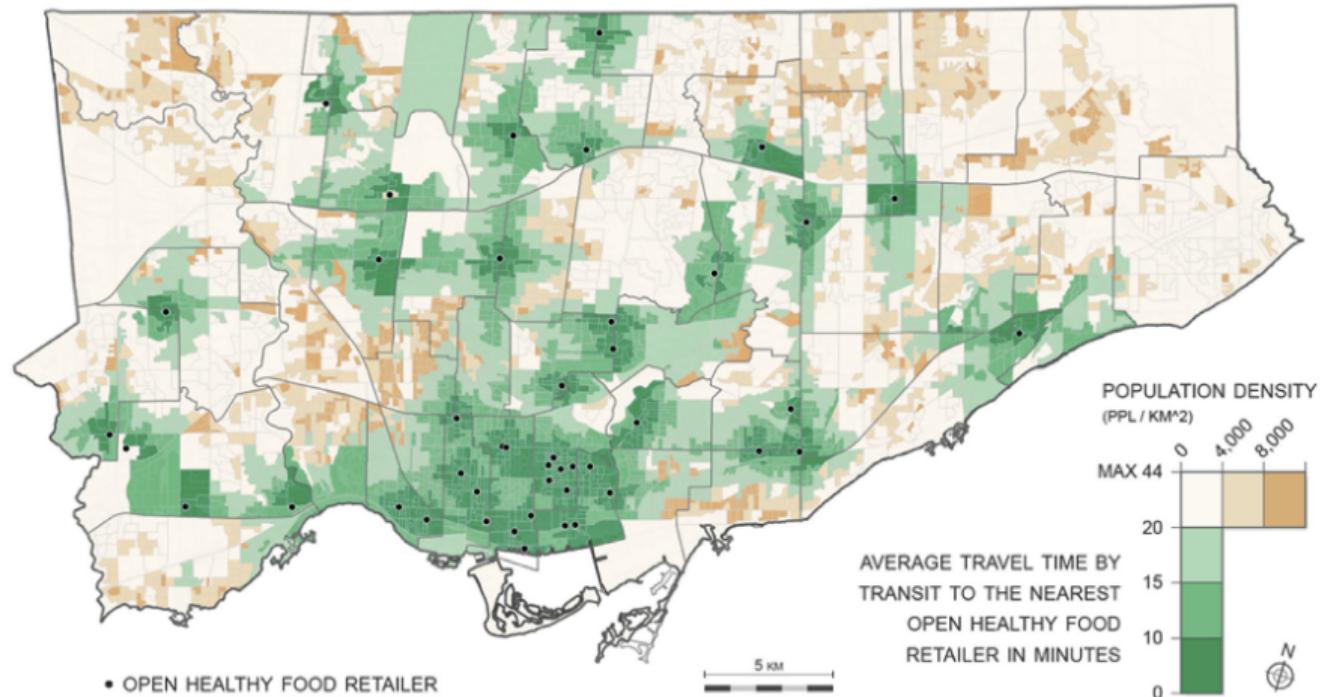
## Safety, e.g. COVID-19

### PRESTO Taps Impact: 86% drop from Pre-Covid-19



# Accessibility, e.g. to healthy food

TRANSIT ACCESS TO HEALTHY FOOD / MONDAY / 12:00AM TO 1:00AM



Source: Widener et al (2017) How do changes in the daily food and transportation environments affect grocery store accessibility?  
<https://doi.org/10.1016/j.apgeog.2017.03.018>

# Accessibility, e.g. to healthy food

Transit Accessibility to Food Banks in May, 2021

