

# **Course Introduction**

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

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University of Toronto

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## **Today:**

- ▶ Introductions
- ▶ Why study transportation?
- ▶ Course Outline
- ▶ Core Concepts
- ▶ Mode prioritization

# Introductions:

## About Me

- ▶ PhD Candidate in Geography
- ▶ Researches Urban Geography/Planning, Transportation, & GIS
- ▶ Cartography / Data Science Consulting

# Why Study Transportation?

# Why Study Transportation? Injuries and Death

The Washington Post  
Democracy Dies in Darkness

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Transportation

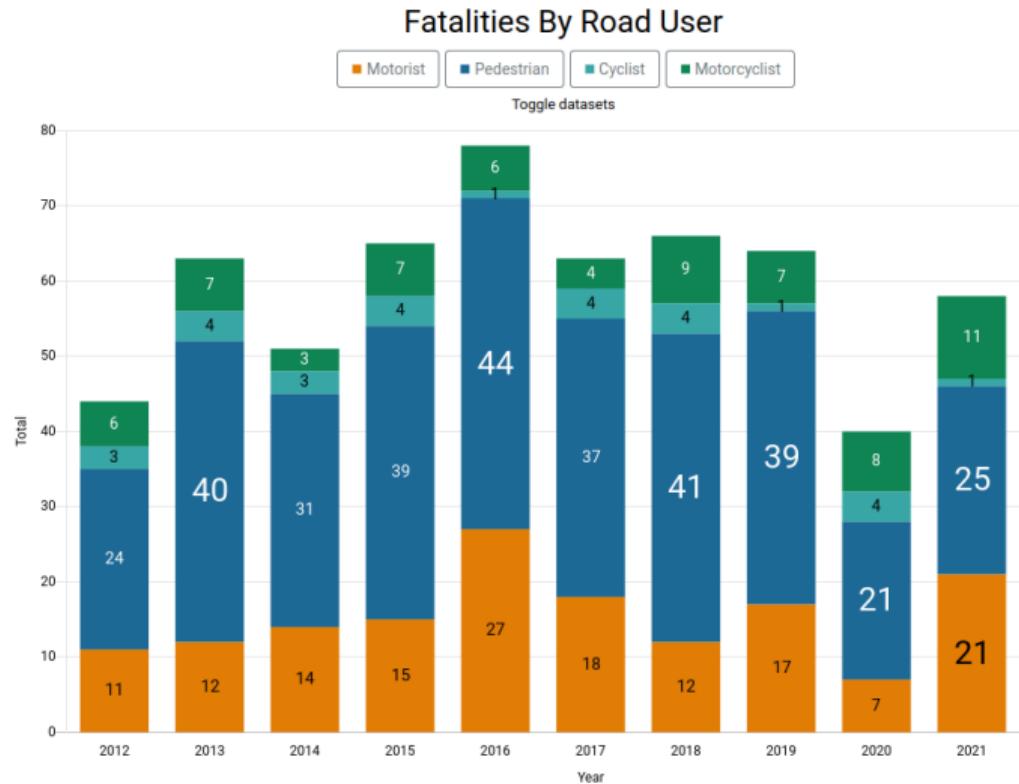
## More Americans have died in car crashes since 2000 than in both World Wars



Emergency personnel work at the scene of fatal crash along Interstate 465 in Indianapolis on July 14. (Rita L. Reith/Indianapolis Fire Department/AP)

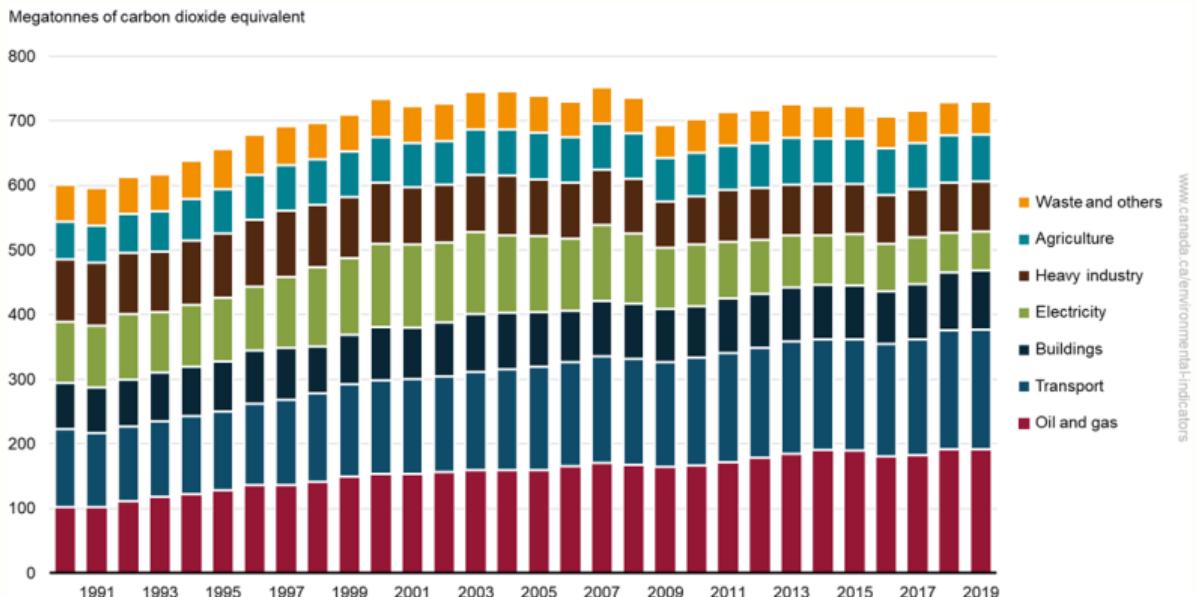
[https://www.washingtonpost.com/local/trafficandcommuting/more-people-died-in-car-crashes-this-century-than-in-both-world-wars/2019/07/21/0ecc0006-3f54-11e9-9361-301ffb5bd5e6\\_story.html](https://www.washingtonpost.com/local/trafficandcommuting/more-people-died-in-car-crashes-this-century-than-in-both-world-wars/2019/07/21/0ecc0006-3f54-11e9-9361-301ffb5bd5e6_story.html)

# Why Study Transportation? Injuries and Death



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

# Why Study Transportation? Environment

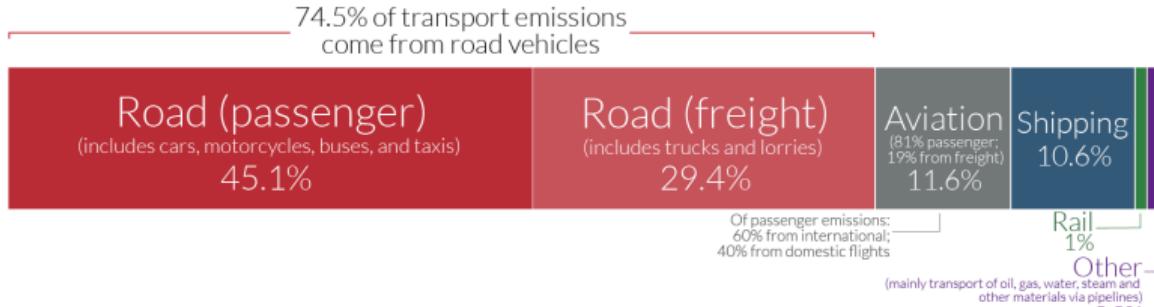


## Why Study Transportation? Environment

### Global CO<sub>2</sub> emissions from transport

This is based on global transport emissions in 2018, which totalled 8 billion tonnes CO<sub>2</sub>. Transport accounts for 24% of CO<sub>2</sub> emissions from energy.

Our World  
in Data



[OurWorldinData.org](https://ourworldindata.org/) - Research and data to make progress against the world's largest problems.

Data Source: Our World in Data based on International Energy Agency (IEA) and the International Council on Clean Transportation (ICCT).

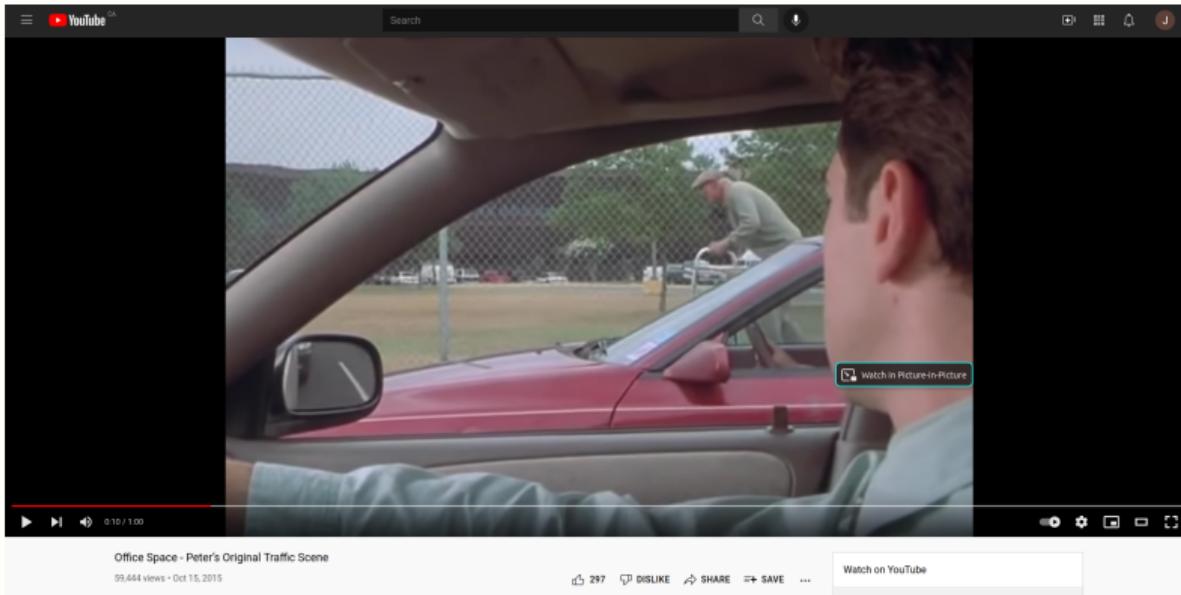
Licensed under CC-BY by the author Hannah Ritchie.

## Why Study Transportation? Congestion



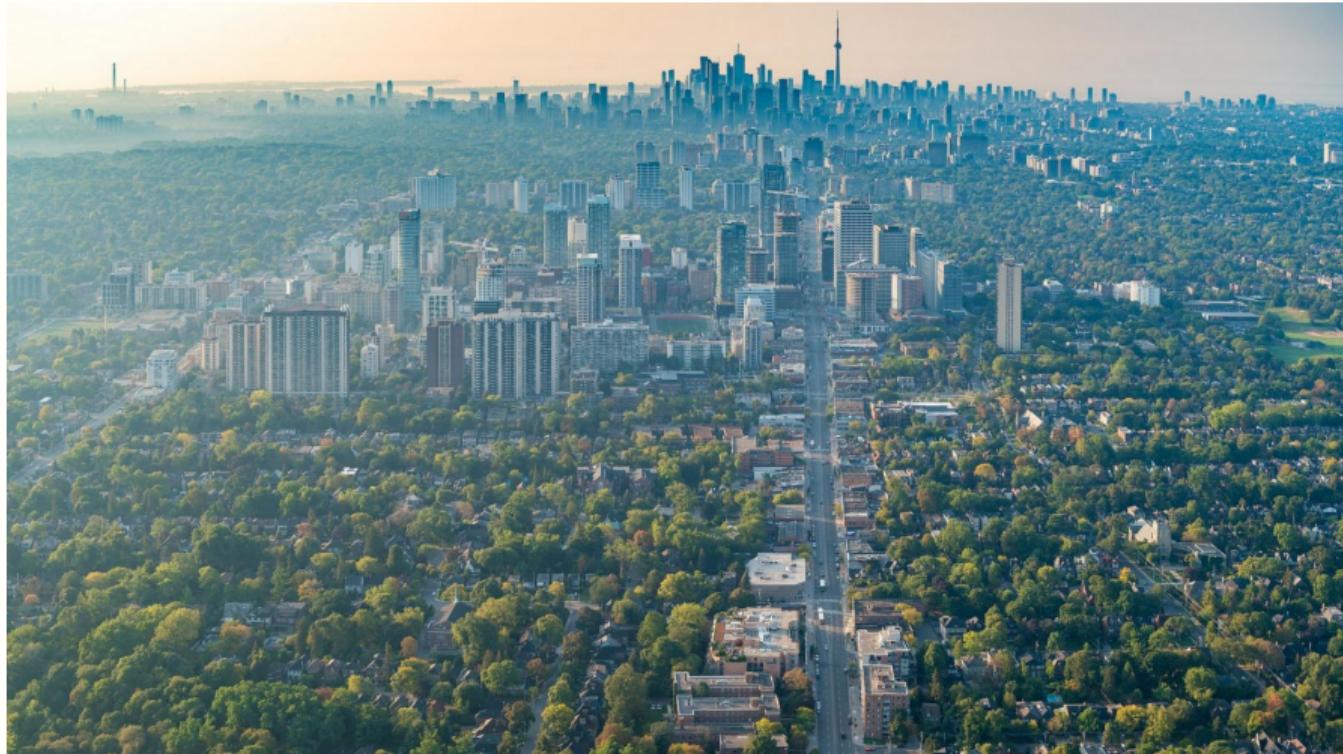
<https://www.shutterstock.com/video/clip-18150214-toronto-ontario-canada-july-2015-epic-rush>

# Why Study Transportation? Congestion

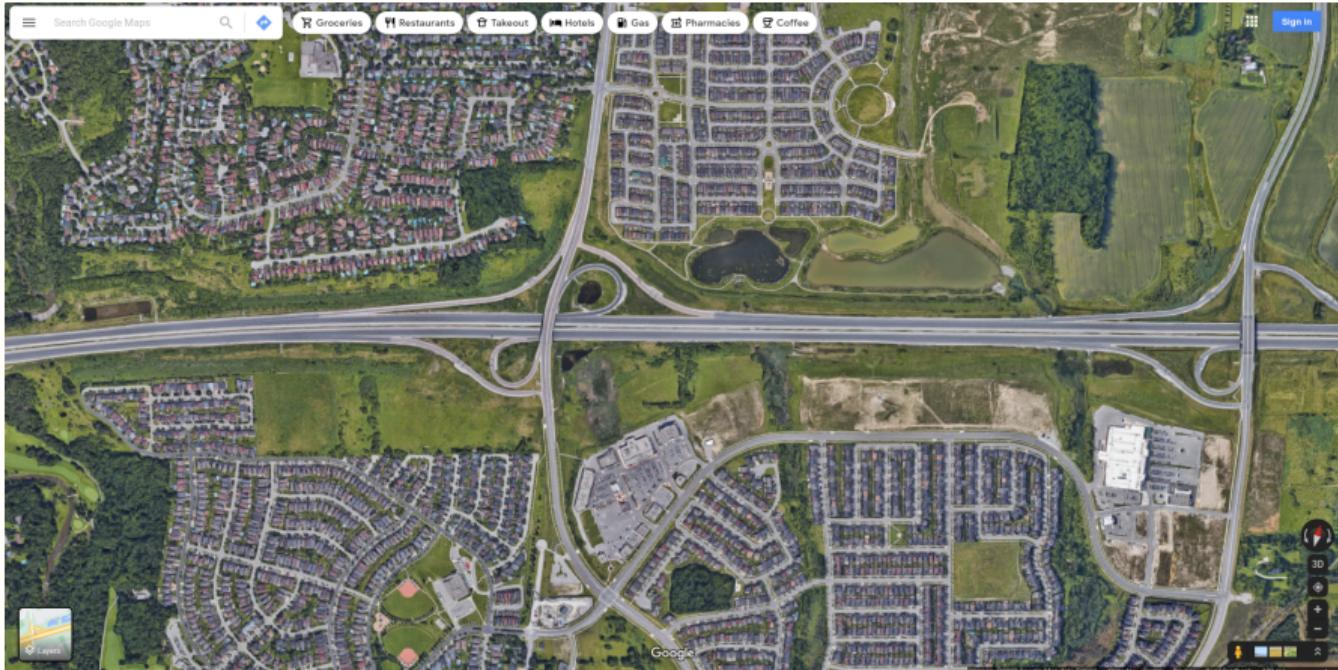


<https://www.youtube.com/watch?v=LcCdB46MybQ>

## Why Study Transportation? Land Use



# Why Study Transportation? Land Use



# Why Study Transportation? Land Use



International Journal of  
*Environmental Research  
and Public Health*



Article

## Associations between Urban Sprawl and Life Expectancy in the United States

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**Abstract:** In recent years, the United States has had a relatively poor performance with respect to life expectancy compared to the other developed nations. Urban sprawl is one of the potential causes of the high rate of mortality in the United States. This study investigated cross-sectional associations between sprawl and life expectancy for metropolitan counties in the United States in 2010. In this study, the measure of life expectancy in 2010 came from a recently released dataset of life expectancies by county. This study modeled average life expectancy with a structural equation model that included five mediators: annual vehicle miles traveled (VMT) per household, average body mass index, crime rate, and air quality index as mediators of sprawl, as well as percentage of smokers as a mediator of socioeconomic status. After controlling for sociodemographic characteristics, this study found that life expectancy was significantly higher in compact counties than in sprawling counties. Compactness affects mortality directly, but the causal mechanism is unclear. For example, it may be that sprawling areas have higher traffic speeds and longer emergency response times, lower quality and less accessible health care facilities, or less availability of healthy foods. Compactness affects mortality indirectly through vehicle miles traveled, which is a contributor to traffic fatalities, and through body mass index, which is a contributor to many chronic diseases. This study identified significant direct and indirect associations between urban sprawl and life expectancy. These findings support further research and practice aimed at identifying and implementing changes to urban planning designed to support health and healthy behaviors.

## Why Study Transportation? Inequality



# Why Study Transportation? Inequality



# Why Study Transportation? Benefits!



<https://en.wikipedia.org/wiki/Utrecht>

## Course Objectives

- ▶ Understand fundamental concepts and theories in urban transportation geography and planning.
- ▶ Identify and critically assess major social, political, economic, and environmental issues related to urban transportation.
- ▶ Analyze and visualize transportation-related data (including using GIS) to describe travel behaviour, transportation networks, land use, and accessibility.
- ▶ Apply the theoretical and practical knowledge you have acquired from the course to develop recommendations on improving urban transport systems.

# **Course Outline**

*(open up the syllabus)*

# Key Concepts in Urban Transportation

- ▶ Demand
- ▶ Activity Participation
- ▶ Utility
- ▶ Transport & Land Use
- ▶ Travel Behaviour

## **Next Week**

Cars, Roads, & Highways:

- ▶ Mobility VS Accessibility
- ▶ Rise of cars as the predominant mode of travel in Canadian cities.
- ▶ How the infrastructure of automobiles has transformed transportation and land-use and has affected daily life.