Avoiding car use

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Essential truths about local transport

• Travelling up to about 1 hr/day is tolerable, even desirable; more is mostly not

• If people have cars they will use them

• Extent of ownership depends on (a) income, and (b) density

• More transit helps reduce car ownership and use, BUT raising density (or reducing income) is the only truly effective way
Travelling about 1 hr/day is tolerable (even desirable); much more is mostly not.

People travel about an hour a day in a wide range of milieu. Thus, sprawling cities need fast transport.

Source: Crozet (2005)
If people have cars they will use them

The annual distance moved by each car on average is remarkably constant within countries
Extent of ownership depends on income

Car ownership rises with wealth; richer countries own more
Extent of ownership depends on density

- Residential density of developed part of urban region (persons/ha)
- Passenger cars per 1000 residents

- Affluent Asian
- Canadian
- U.S.
- Australian
- Western European

Cities:
- Atlanta
- Calgary
- Barcelona
- Singapore
- Hong Kong
Travel and energy use differences in the GTA

Most households in the core do not own a car; 95% of households in outer suburbs have one or more cars; latter use >2\(\frac{1}{2}\) times as much energy for transport.
The case of Hong Kong, 1

- Among the wealthiest cities in the world
- Has the lowest car ownership and use
- Ownership is costly and inconvenient
- “Carrying things” is the main reason for purchase
- The few car owners use their cars for everything
The case of Hong Kong, 2

- Among the densest of cities
- With astonishingly good public transport
- A major transport hub (airport and seaport)
- Good local transport is a business issue
- Accessibility makes business efficient
- Dense, steamy Hong Kong is a healthy place
EANO Planning Principle
EANO = Equal Advantage for Non-Ownership

Every part of an urban region should be developed and maintained so that the advantages of not owning a car are at least equal to the advantages of owning a car.
Amenities and services for living without a car, 1

• **safe and enticing routes** along which to walk or ride a bicycle

• **proximity**: schools, stores, and recreational and cultural facilities within a walk, a bicycle ride or a short public transport journey

• **good public transport**, which in lower-density areas will include demand-driven service to the door or to nearby pick-up and set-down points
Amenities and services for living without a car, 2

- ready access to places of employment and to the services that support home-based employment

- car-sharing services for longer or special trips

- delivery services for the carriage of purchased goods and for other purposes

- excellent information about all of the above.
The economics of no car ownership

- No imports of into urban areas of fuel and cars
- No massive infrastructure for roads and parking
- No infrastructure costs for sprawl
- No health costs from car pollution
- No working one or two days a week for a car
Some solutions for the GTA, 1

• Densify, densify, densify

• Planning goal could be to reduce the number of cars: e.g., 2-car households will have only one; 1-car households become car-free

• Apply EANO: focus on making life without a car as advantageous as life with a car
Some solutions for the GTA, 2

• Put in new transit only if fares will cover all costs; usually requires higher-than-expected or higher-than-acceptable densities

• Rule-of-thumb numbers of residents or jobs required up to 600 m around stops to cover capital and operating costs:
  ➢ Heavy rail: 40,000 (tunnel)！！，15,000 (surface)
  ➢ Light rail/BRT: 5-10,000 (surface)
  ➢ Regular bus: 3-5,000

• As gas prices rise, these numbers fall a little, but not much
Some solutions for the GTA, 3

- Add Spadina extension *if there is sufficient density*

- Extend Bloor-Danforth line, east and west, and Yonge line north, *if there is sufficient density*

- Add LRT—or BRT then LRT—as much as possible *where there is sufficient density*

- Well-empowered development corporations may be required to deliver density required for no-cost transit