Facts about Climate Change and Smarter Growth

Greenhouse gas emissions from transportation can be viewed as three-legged stool with one leg related to vehicle fuel efficiency, a second to the carbon content of the fuel itself, and a third to the amount of driving or vehicle kilometers traveled (VKT) per person (Ewing 2007). Provincial and Federal policies have focused on increasing vehicle efficiency (e.g. hybrid rebates, adopting California Emissions Standards, etc.) and promoting alternative fuel sources (e.g. biofuel subsidy**).** These are important measures for reducing our emissions, however, ***the most important factor affecting our ability to reduce greenhouse gases is to provide alternatives to driving through the shape and form of our communities***.

Smart growth communities are more climate-friendly communities. They are more mixed-use and compact which in turn makes them more walkable, better able to provide efficient transit, and more conducive to cycling as a competitive transportation option. Better transportation options help individuals drive less and reduce greenhouse gas emissions. New research has further strengthened the anecdotal evidence that land use and urban form are fundamental factors in determining how much people drive. Some of the most recent findings are below:

Vehicle Kilometers Continue to Grow

- Even though more North Americans are moving to larger urban centres with better access to transit, over the past decade the number of kilometers and trips by single occupancy vehicles continued to grow in Canada and the US (Turcotte 2008 and Ewing 2007). This trend is largely due to the fact that people are living in lower density, single-use residential neighbourhoods that are further from the locations where they work, play, go to school, and shop.

Density and Distance from City Centres

- New census data on Canada's urban neighbourhoods reveals that over 80% of residents of neighbourhoods characterized by a majority of low density housing made at least one trip by car (as the driver) during the day while less than half of people living in high-density neighbourhoods drove (Turcotte, 2008).

  In addition, travelling exclusively by car was far more common in low-density neighbourhoods. Only about one-third of residents in high-density neighbourhoods

were at the wheel for all of their trips during the day, compared with almost two-thirds of those who lived in low-density neighbourhoods.

- Likewise, the greater a home's distance from the centre, the higher the likelihood that residents will use a car for at least one of their trips. Specifically, people living in central neighbourhoods are 20% less likely to use their cars than people living up to 25 kilometers from the central neighbourhoods (*Turcotte* 2008).

Urban and Suburban Households

- In terms of energy use, the average urban household outperforms even the greenest suburban house with hybrid cars. Driving a fuel efficient automobile and making your suburban home extremely energy efficient will likely not make up for the increased automobile use. Those living on the outskirts of town centres will drive approximately 32,000 km annually in comparison to an urban dweller who will drive approximately 6,000 km annually. **Metro Vancouver**

- In the Metro Vancouver region, 51% of residents in high density neighbourhoods, 74% of residents in medium density neighbourhoods, and 77% of residents in low density neighbourhoods made all their trips by car (as a driver) (Turcotte 2008).

References

Ewing, Reid, et al. 2007. *Growing Cooler: The evidence on urban development and climate change.* Washington, DC: Urban Land Institute, Smart Growth America, Center for Clean Air Policy, and National Center for Smart Growth Education and Research. http://www.smartgrowthamerica.org/gcindex.html

Turcotte, Martin. (2008) *Life in metropolitan areas: Dependence on cars in urban neighbourhoods.* Canadian Social Trends. Statistics Canada. Catalogue No. 11-008. http://www.statcan.ca/english/freepub/11-008-XIE/2008001/article/10503-en.pdf

VandeWeghe, Jared R. And Christopher Kennedy. (2007) *A Spatial Analysis of Residential Greenhouse Gas Emissions in Toronto Census Metropolitan Area.* Journal of Industrial Ecology Volume 11 no. 2

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