Accelerating Cycling Adoption for Transportation

Early Results from a SSHRC Partnership Development Grant

Beth Savan, PhD, MCIP

Outline

Goals and Partners

Three Streams:

- Social and Civic Infrastructure
- Cycling Economy
- Knowledge mobilization

Future Direction

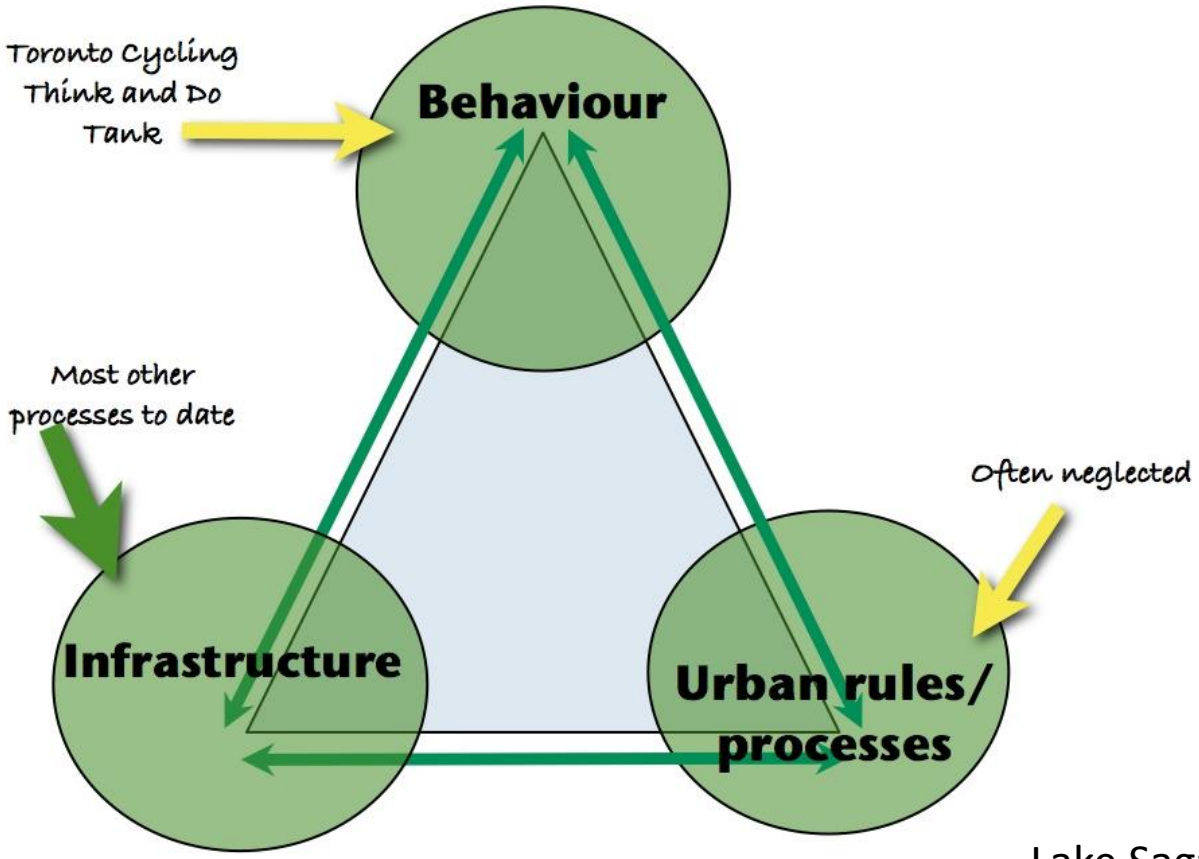
Policy Implications

Research Goals and Partners

- To understand how lessons from the field of behaviour change can be applied to cycling adoption for transportation, to hasten mode shift and to enhance the local economy, environment and social inclusion;

- To fill a gap in the literature about cycling adoption with a rigorous, evidence based study.

Drivers to Promote Cycling



Lake Sagaris, 2012

Cycling Trends in North America

Trend in share of workers commuting by Bicycle in North American Cities:

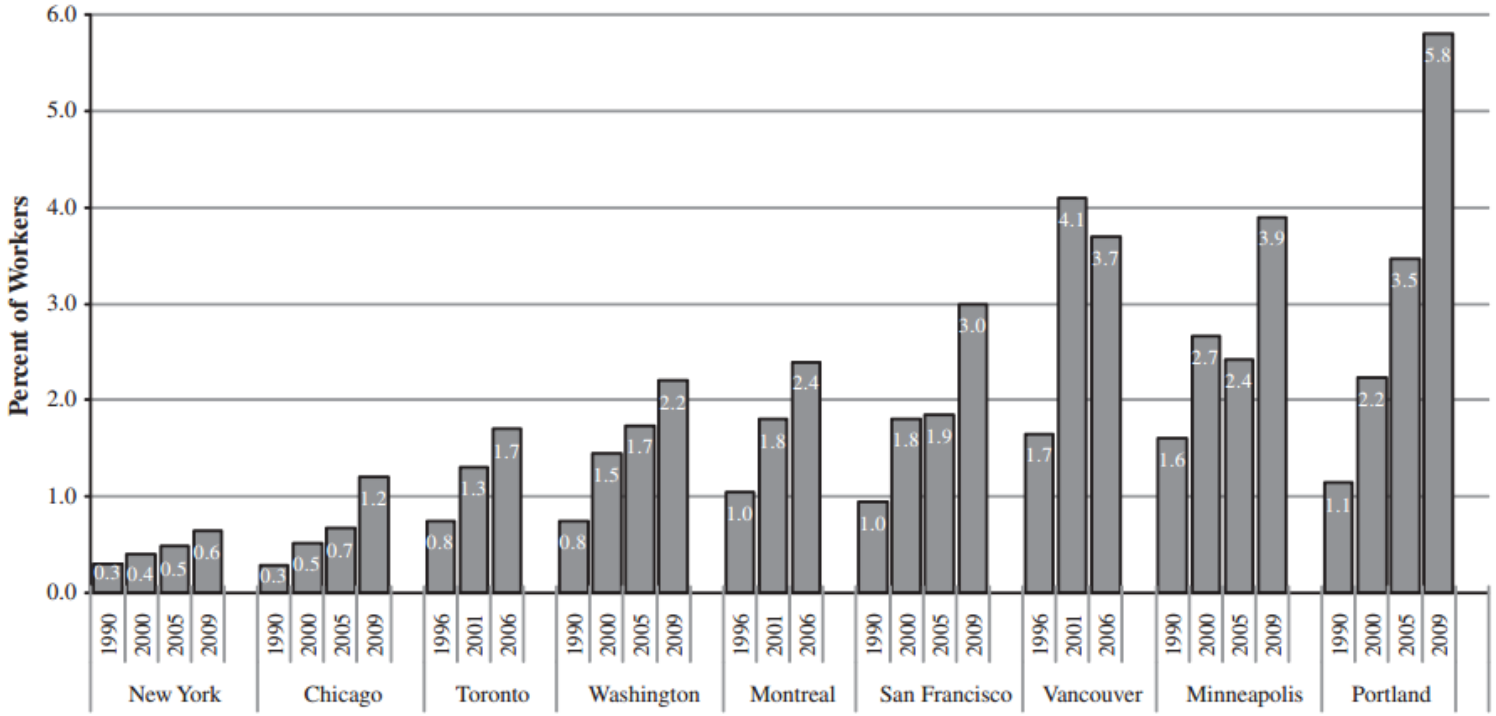


Fig. 4. Trend in share of workers commuting by bicycle in large North American Cities, 1990–2009. *Sources*: USDOC (1980–2000, 2010a); Statistics Canada (1996–2010).

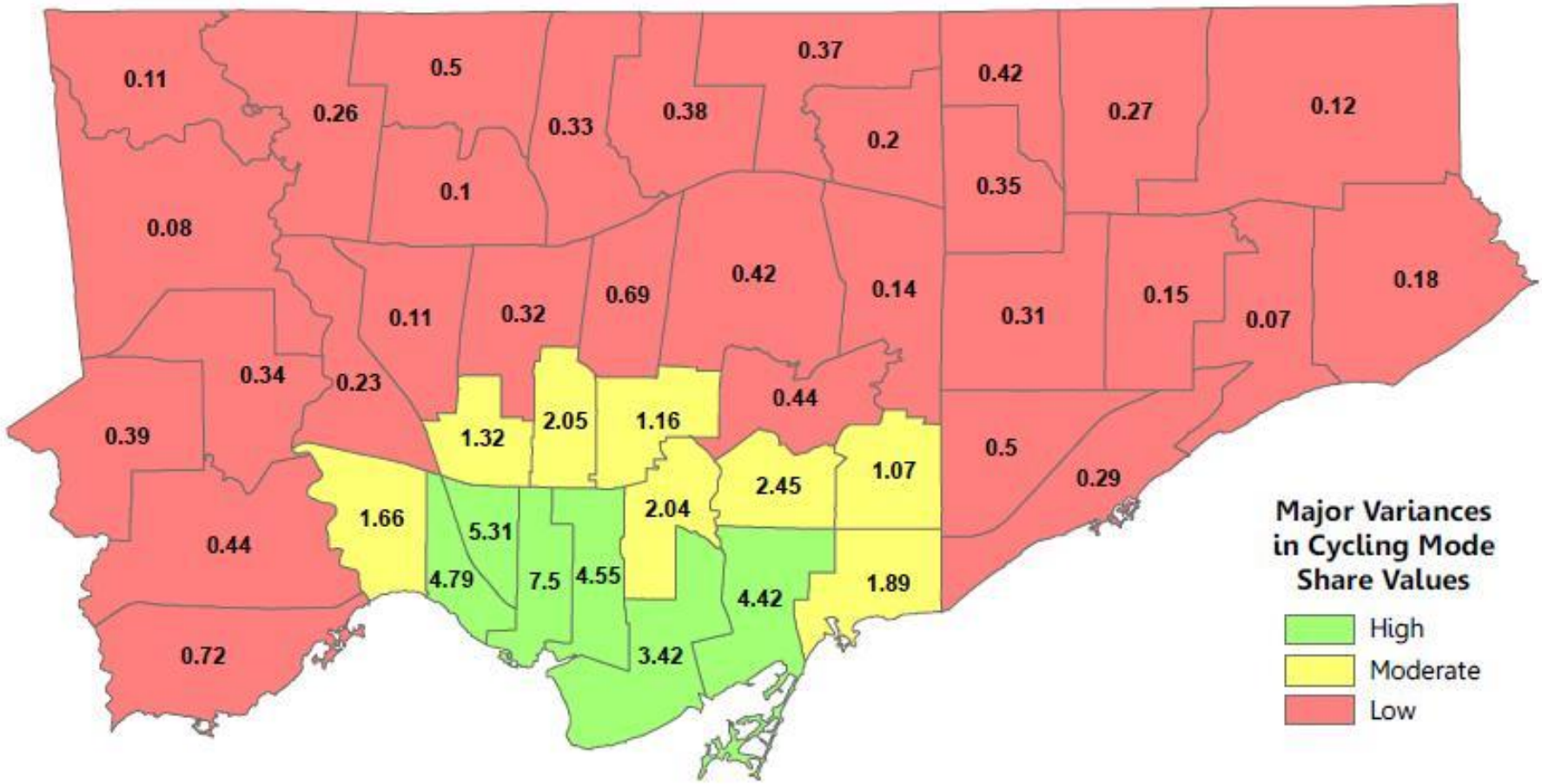
http://policy.rutgers.edu/faculty/pucher/TRA960_01April2011.pdf

Social and Civic Infrastructure

Goals:

- Demographic and physical determinants
- Barriers to participation
- Social strategies to increase participation
- Tool kit design
- Target populations

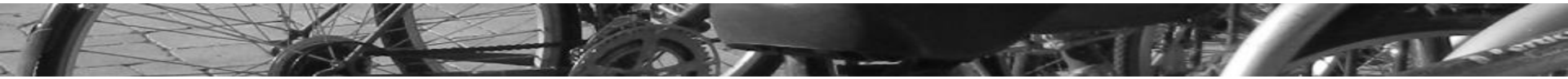
Cycling Mode Share

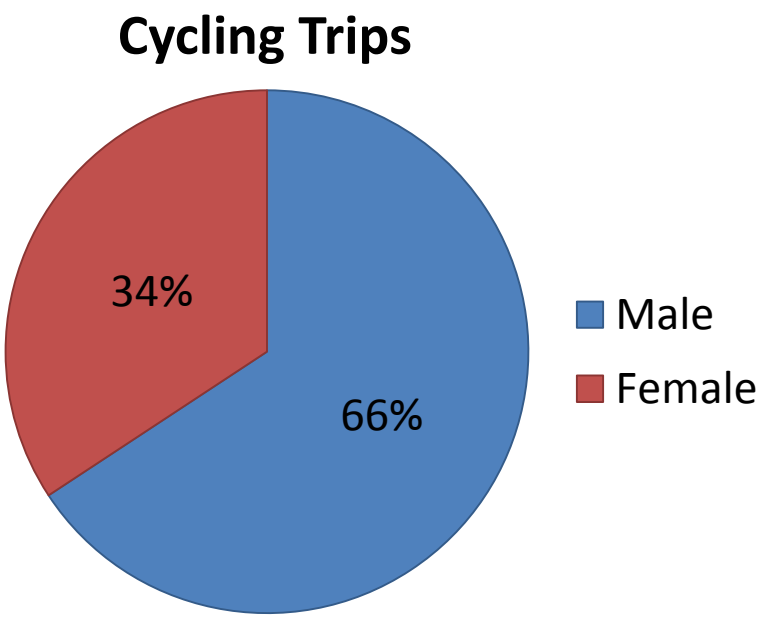


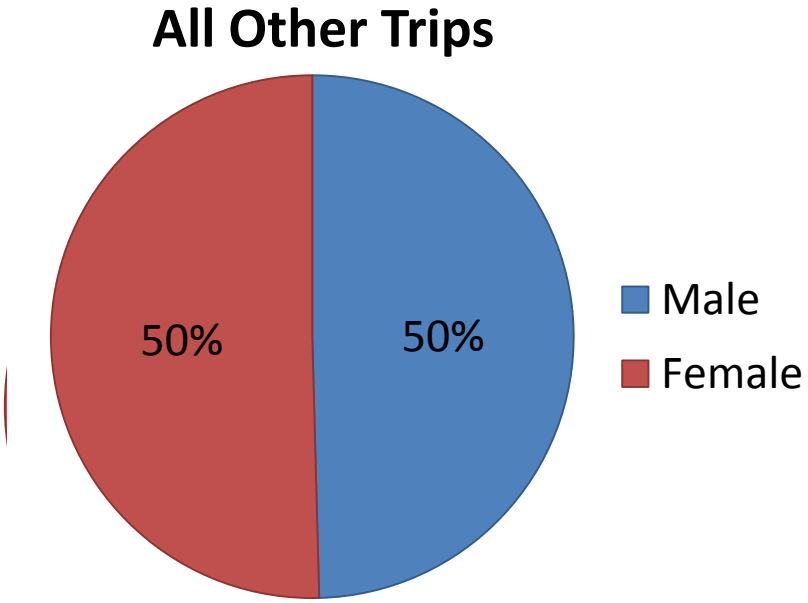
Data Sources: City of Toronto Open Data 2012 and Transportation for Tomorrow Survey, 2006

Emily Watt, 2012

Who Cycles?



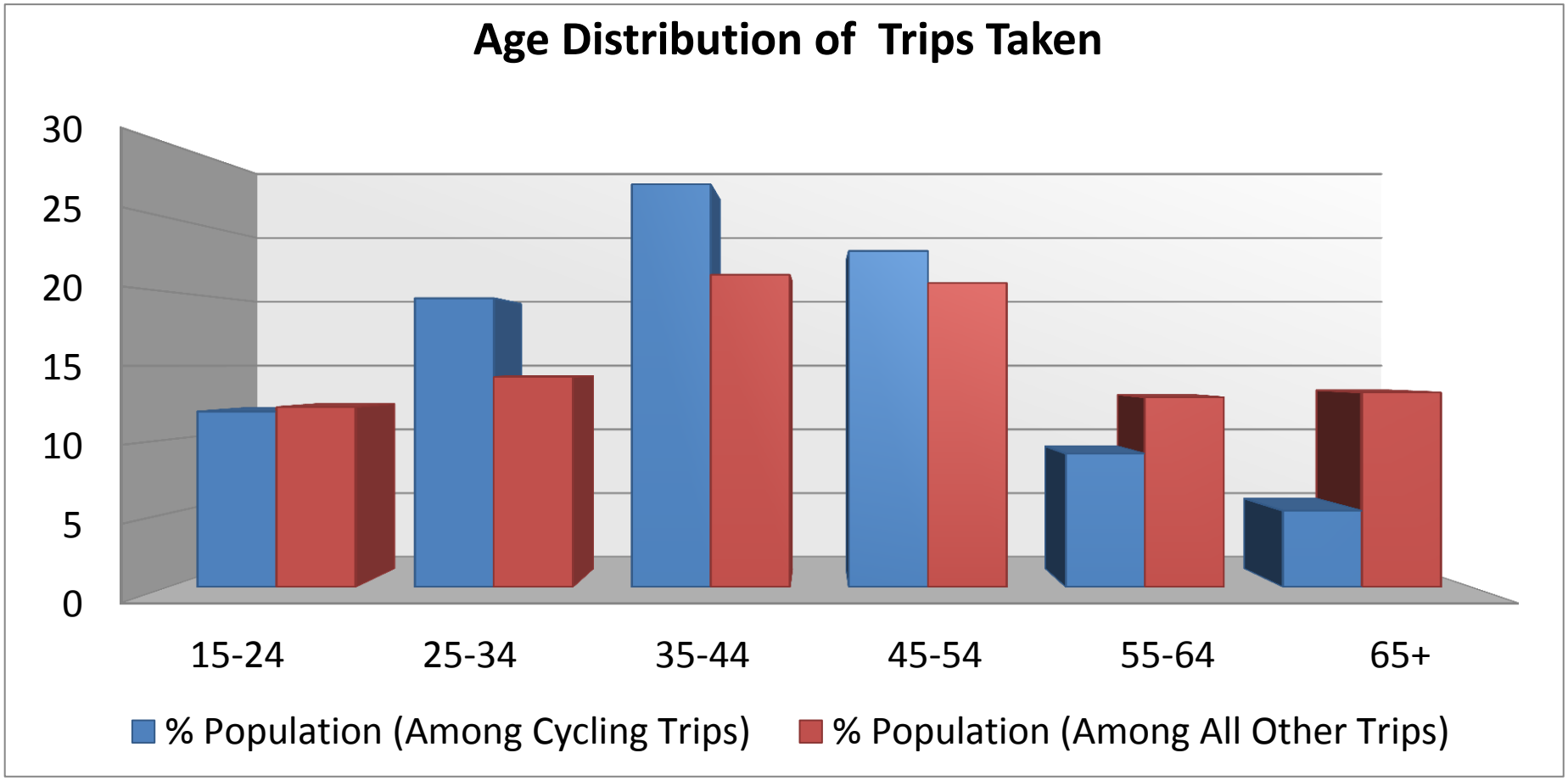




George Liu, 2012

Data Sources: Transportation for Tomorrow Survey, 2006

Who Cycles?



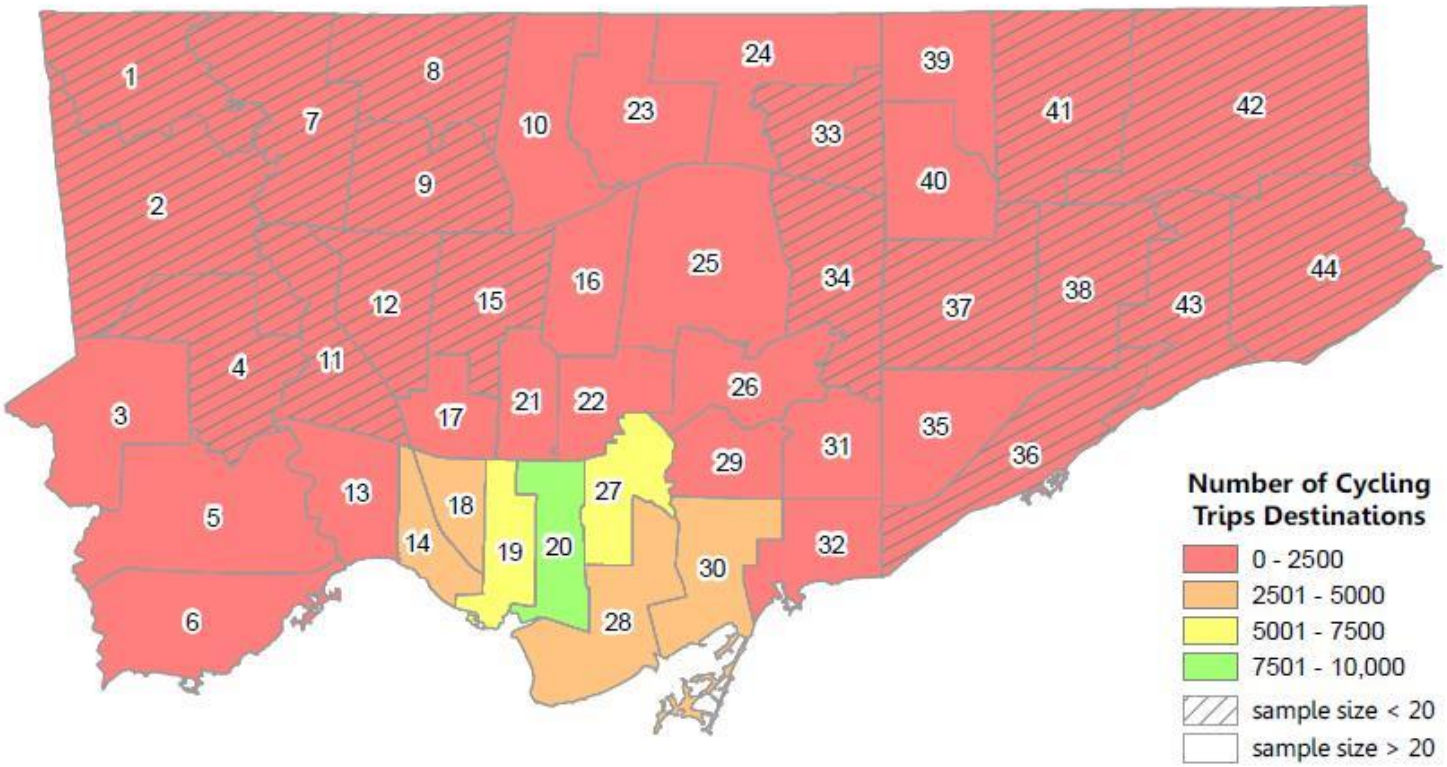
George Liu, 2012

Data Sources: Transportation for Tomorrow Survey, 2006

Trip Characteristics

Short: most are under 3 km. and even more are under 5 km.

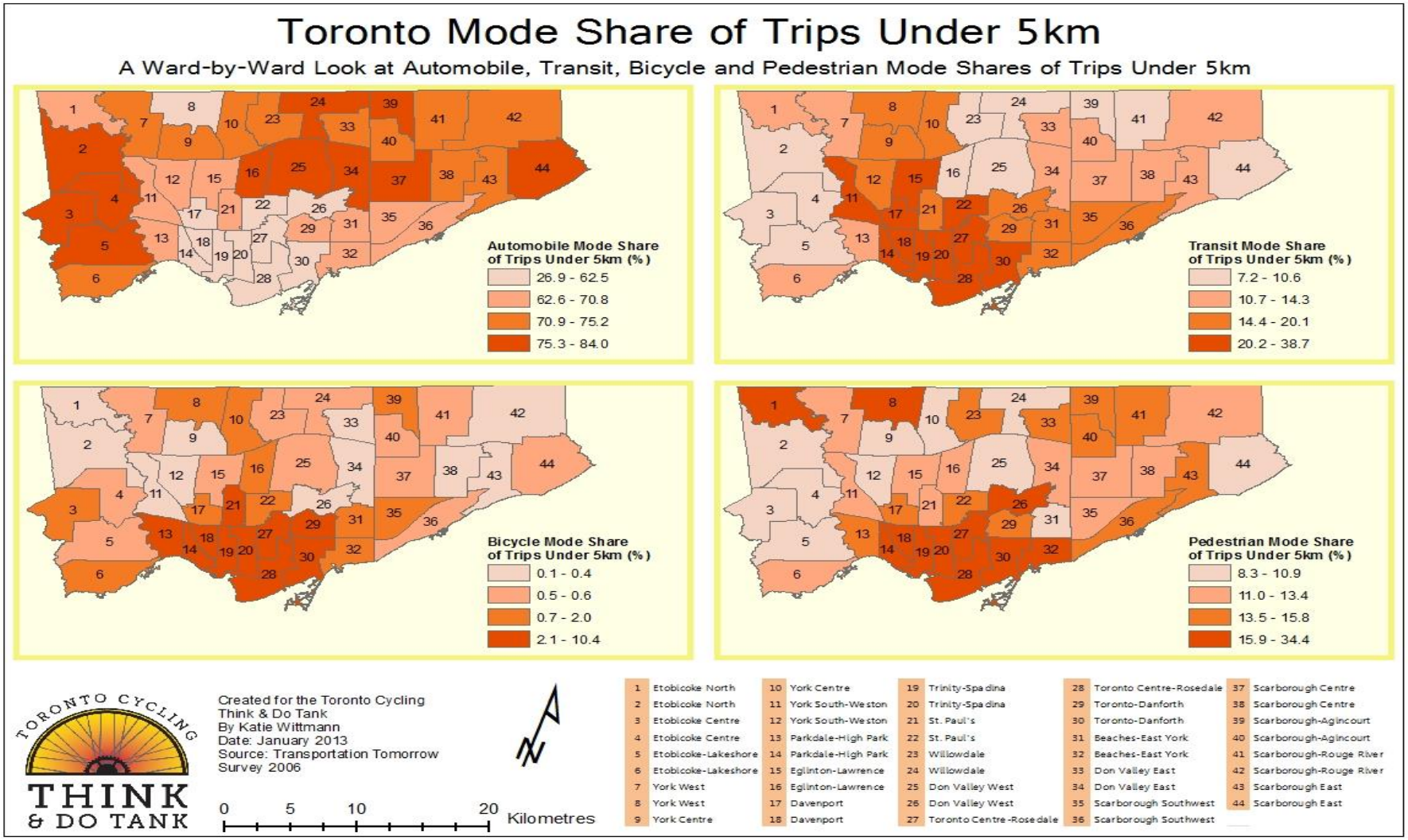
2 to 3 cycling trips per day.



Emily Watt, 2012

Data Sources: City of Toronto Open Data 2012 and Transportation for Tomorrow Survey, 2006

Trips Under 5 KM by mode



Bike Score ™

Discrepancy between Bike Score and Cycling Mode Share

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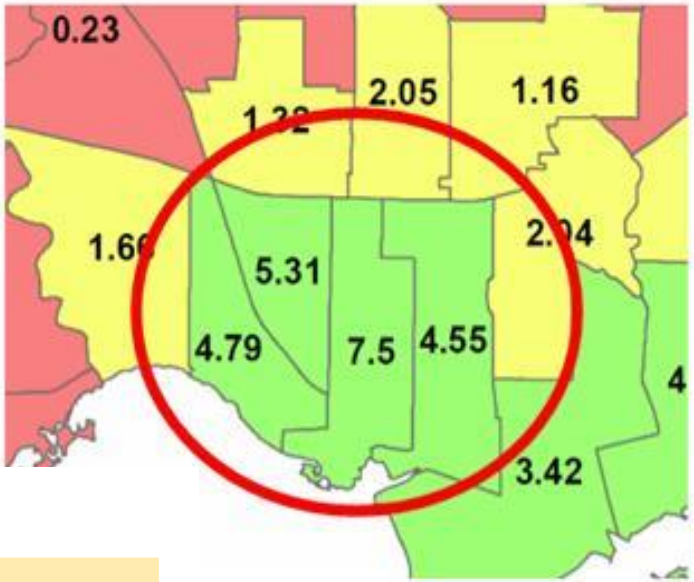
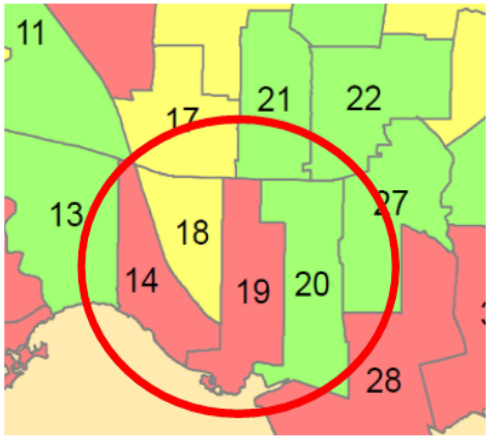
Bike Score ™





Bike Score™

- 3.4 - 5.4
- 5.5 - 6.8
- 6.9 - 8.9

Levels of Cycling Determined by Cycling Mode Share Vaules

- High
- Moderate
- Low

Is cycling independent of cycling conditions considered in Bike Score data?

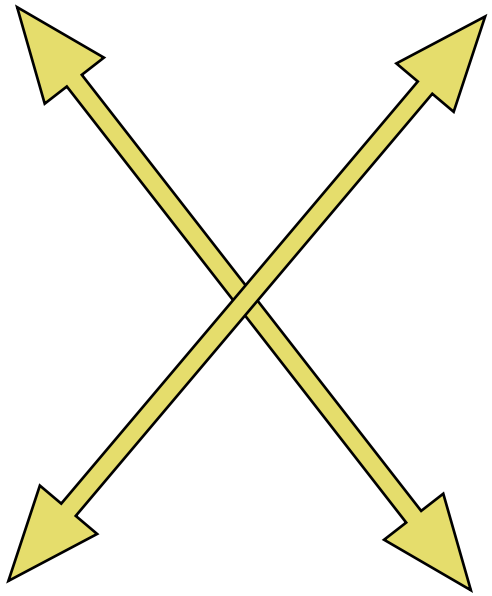
Emily Watt, 2012

Cycling Facilities

Katie Witmann, 20

Literature Review of Social Strategies

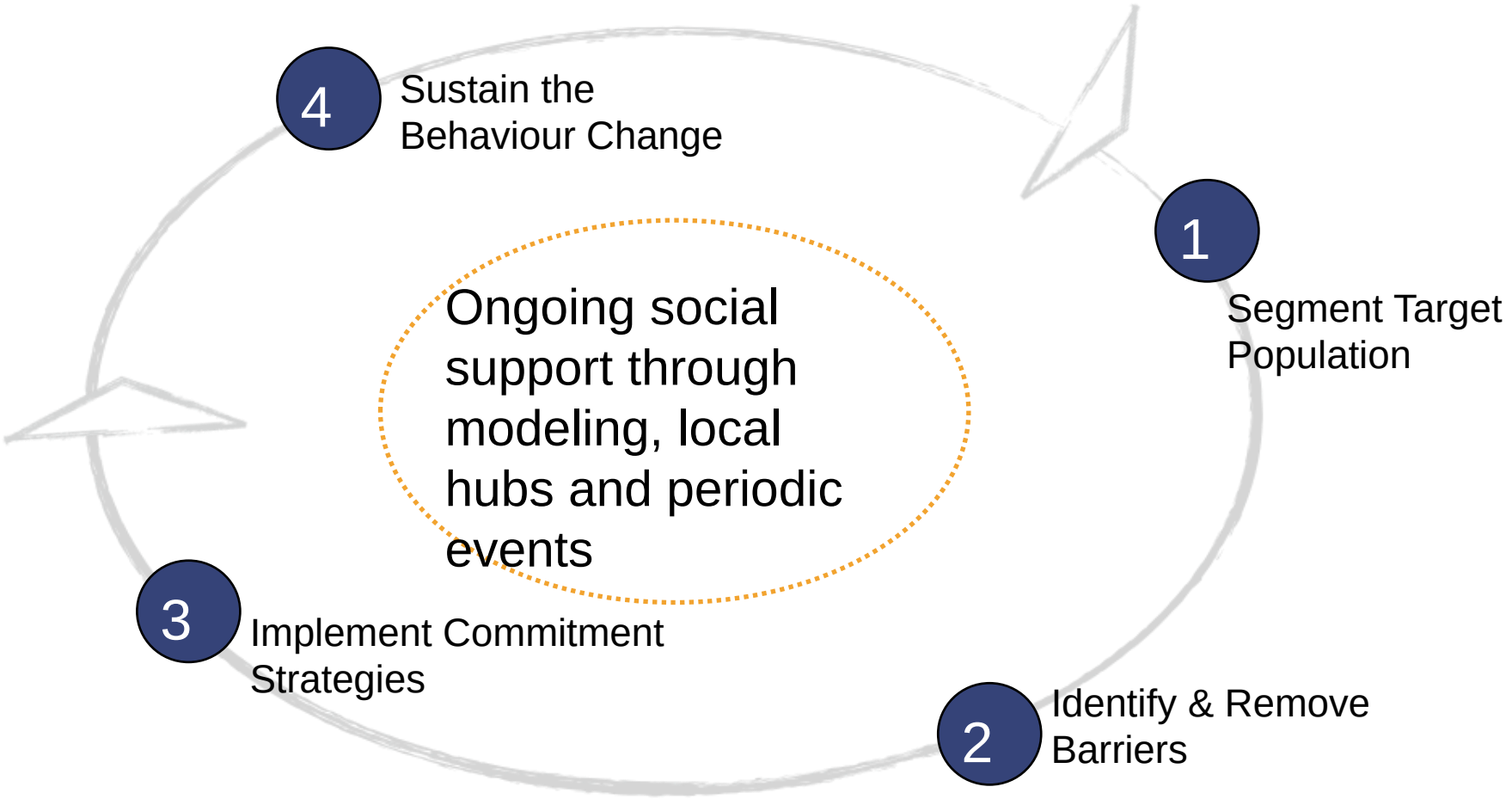
Behaviour Change Principle
Identify and Remove Barriers
Social Norms
Social Cues & Modeling
Local Hubs & Community Involvement
Foot in the Door & Pledges
Visual Images, Prompts & Reminders
Branding
Feedback
Incentives



Cycling Initiative
Open Streets
Safe Routes to School
Cycle to Work Schemes
Cycle Training and Education
Cycle Promotion Events
Bicycle Share Programs
Route Planning Tools
Advocacy

Emma Cohlmeyer, 2012

Social and Civic Infrastructure: Tool Kit



Emma Cohlmeyer, 2012

Social and Civic Infrastructure

Research Assistants:

Emma Cohlmeyer, research assistant, Master of Science in Urban Planning student at the University of Toronto

Trudy Ledsham, project coordinator, Masters of Arts in History (environment) University of Toronto, 2012

George Liu, statistics research assistant and Masters candidate in the Environmental Studies program at York University

Lake Sagaris, Ph.D.

Emily Watt, cartographer and GIS research assistant, Masters in Geography & Planning at the University of Toronto

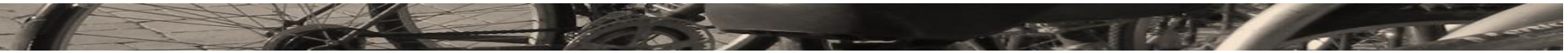
Katie Wittmann, research assistant, Master of Science in Urban Planning student at the University of Toronto

Cycling Economies

Goals:

- Inclusive business strategy
- Training workshop including policy and infrastructure facilitators
- Strategy to increase market through targeting of potential rather than existing cyclists
- Community based social marketing ToolKit.

Market Analysis: Toronto



- 2.6 million people- 54% own or use a bicycle (2009) up 6% since 1999,
- 29% of the population (2009) uses a bike for transport up 9% since 1999
- Stats Can estimates market is $568M or $16.70 per capita
- Industry sources estimate market at $700M or $20.59 (approx. 10% in Toronto)
- We believe that Independent Bicycle Dealers are responsible for $440MM or 63% of all revenue

http://www.suntimes.com/news/metro/14267923-418/more-bike-lanes-planned-for-city.html

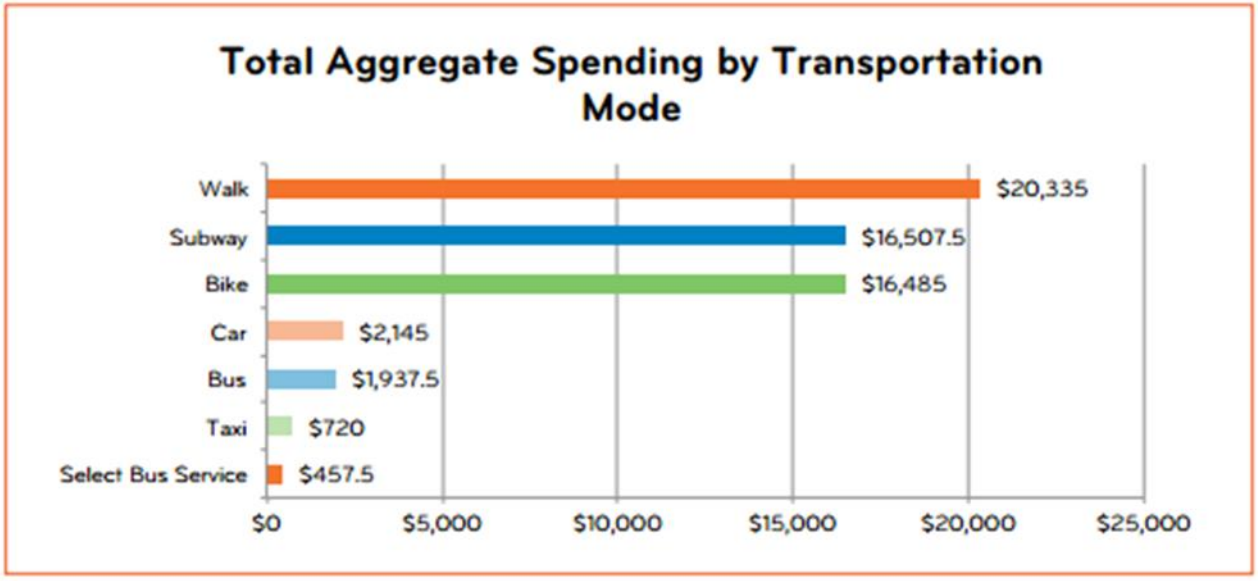
Cyclists: Great customers

In Toronto and Portland, after pedestrians, cyclists are responsible for the largest monthly per capita spending within a studied neighborhood.

-OTREC, 2012; TCAP, 2009; 2010

In New York's East Village – where bike lanes are in place – cyclists top all groups, including pedestrians, in monthly per capita spending.

-Transportation Alternatives, 2012



http://transalt.org/files/newsroom/reports/2012/EVSS_Final.pdf

D. Arancibia

Bike lanes: Good business

In New York:

"Up to **177% increase in bicycle volumes**" in First and and Second Avenues (buffered bike lanes were incorporated to both). Accompanied by "**47% fewer commercial vacancies**" compared to 2% more borough wide.

"**49% fewer commercial vacancies**" at Union Square (included widened sidewalks and a protected bike lane), compared to a 5% increase borough wide.

"**Up to 49% increase in retail sales**" in businesses located at 9th Ave. (where buffered bike lanes were added) compared to a 3% increase borough wides

- New York City Department of Transportation, 2012

D. Arancibia

Employers and Entrepreneurs

Many reports suggest that providing cycling infrastructure can help attract “creative class” employees, and that cycling is an upward trend in North America. (Walljasper, 2012)

D. Arancibia

Cycling Economies

Research Assistants:

Daniel Arancibia, research assistant, Evolutionary Biology student at the U of T

Mikey Bennington, lead researcher cycling economies

Shafiq Dharani, research assistant, MBA student at the U of T

Rosannagh MacLennan, research assistant, Masters in Kinesiology and Physical Education student at the U of T

Grant McLean, research assistant, M.Sc in Planning candidate at the UofT

David Mitchell, research assistant, MBA student at the UofT

James Tay, research assistant and MA in Public Policy & Governance candidate at the U of T

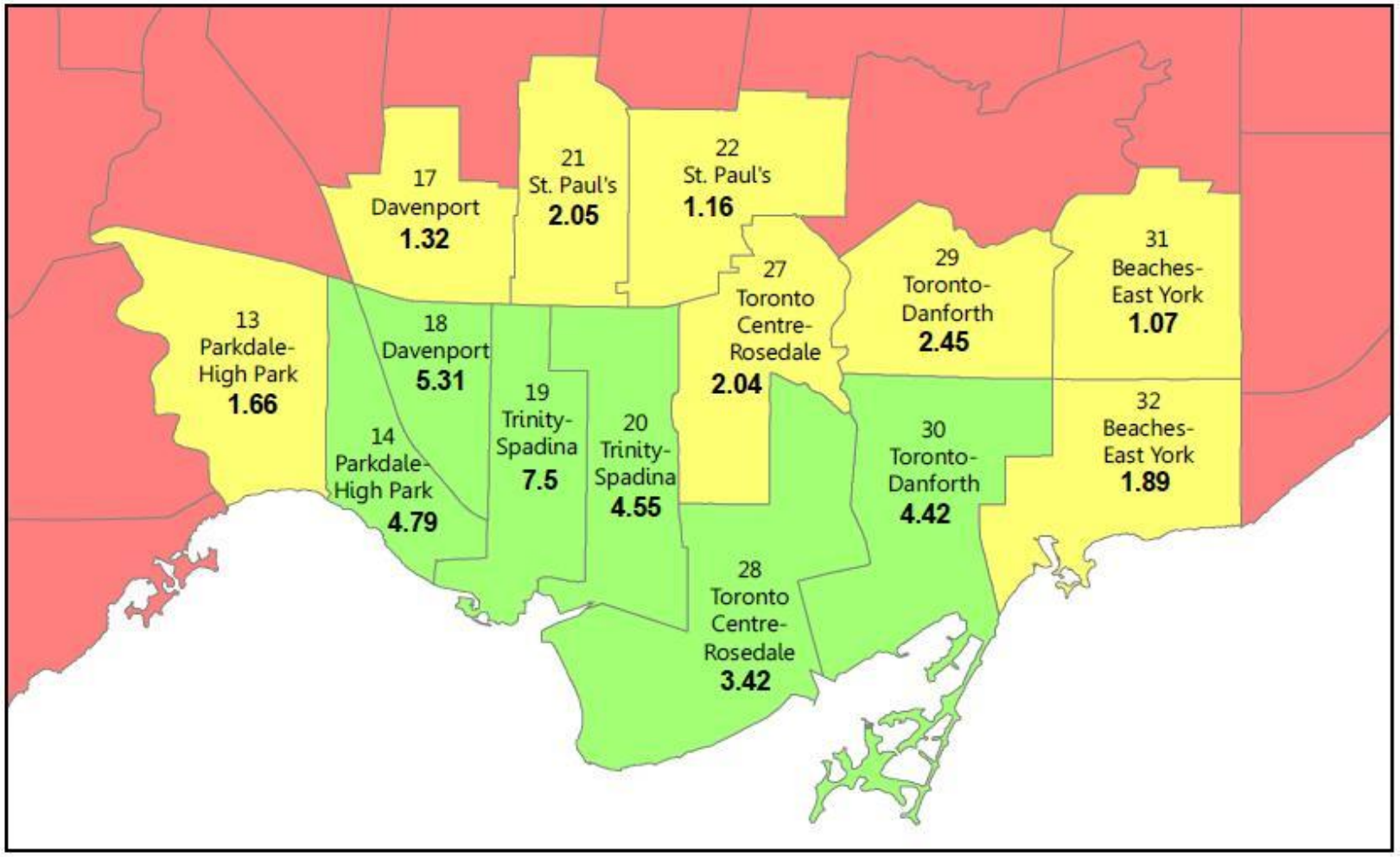
Knowledge Mobilization

Goal:

To take the research and new information developed by the project and disseminate it through popular sources such as a website, blogs and magazines, as well as oral presentations, workshops, study tours, conferences and academic publishing.

All Partners, Research Assistants and Students participate in these efforts

Wards of Interest



Data Sources: City of Toronto Open Data 2012 and Transportation for Tomorrow Survey, 2006

Emily Watt, 2012

Conclusion and Next Steps

Behaviour change initiatives can significantly accelerate cycling adoption at a fraction of the cost of physical infrastructure; our tool kit will be used to test this in two pilot projects with community partners this coming summer

Cyclists are strong economic accelerators; businesses should seize the opportunity and support investment in cycling behaviour and infrastructure to increase competitiveness.

Our business strategy will combine our tool kit with economic drivers to create a template for developing new markets using behaviour change to achieve mode shift.

Expanded research program will test these hypotheses in varied landscapes with more partners, exploring the relationship among behaviour change and infrastructure drivers

Thank You – Questions, Comments, Suggestions?

Guadalajara, Mexico

Photo credit: Emma Cohlmeyer

Some References

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