Bike Score:
Applying Research to Build Web-Based Tools to Promote Cycling

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Cycling: the way forward?

- Walking: most common form of leisure-time physical activity, few barriers, no cost
- Cycling: faster, more efficient, nearly as accessible and economical - may be a more likely substitute for car travel

- 20 min walking
- 20 min cycling

1 km 5 km

~ 1/2 of Vancouver commutes are <5 km; 4/5 are <10 km (Census, 2006)
~ 1/3 of trips are work trips, trips for work are the longest we make (Translink Trip Diary 2008)
Past focus on Walkability

Source: Larry Frank
cycling in cities research program
evidence on city design to increase cycling mode share & improve public health

survey qualitative focus groups GIS mapping

what is “bikeability”
1. **bike route density:**
availability and connectivity of bike routes

2. **bike route separation:**
whether routes are off-street or physical separated from traffic

3. **connectivity:**
intersection density of bike-friendly streets – paths, local roads, connector

4. **topography:**
average slope

5. **destination density:**
availability of destinations for cyclists-
neighbourhood commercial, educational, offices, and entertainment land uses
case study: bikeability map for Metro Vancouver
bikeability & component maps

Bikeability

High bikeability

Low bikeability

Topography

Destination density

Bike route density

Bike route separation

Connectivity
comparing cities
From “Bikeability” to “Bike Score”

Goal:
To take bikeability from a case study to a web-based tool for use by policy-makers, planners, and the public to promote cycling

Partners:
Simon Fraser University, University of British Columbia, and Walk Score

Funding:
Knowledge Translation Grant through Canadian Institutes for Health Research (in part)
• Seattle-based company that developed Walk Score in 2008
• Has ranked 2,500 cities in the US on walkability
• Had interest in Bike Score
• Great interactive website
• History of partnerships with researchers, planners and the real estate industry
Environmental factors associated with cycling:

1. cycling infrastructure
2. topography
3. desirable amenities and road connectivity (using Walk Score)

In the US, an additional social factor: 4. % of work trips by bicycle

Bike Score calculated for each location in a city, then mapped on “heat maps”

• Scores range from a low of 0 (deep red) to a high of 100 (dark green).
• Overall score, and component parts (bike lanes, hills, destinations) to determine which components may be driving the score.
Challenges: Data

- Deciding on pilot cities (10 Canadian, 16 US)
  - purposeful, not representative
- Making contacts in 26 cities
- Data sharing across cities, university & private industry
- Reconciling different data sources in US versus Canada
  - topography, population density
- Route categories
ROUTE TYPES INCLUDED:

cycle tracks
off street paths
residential bikeways
bike lanes

ROUTE TYPES EXCLUDED:
sharrows, shared bus/bike lanes, wide curb lanes, pedestrian trails
Select Large US Cities - Rankings

1. Minneapolis  
   Bike Score: 79

2. Portland  
   Bike Score: 70

3. San Francisco  
   Bike Score: 70

4. Boston  
   Bike Score: 68

5. Madison  
   Bike Score: 67

6. Washington D.C.  
   Bike Score: 65

7. Seattle  
   Bike Score: 64

8. Tucson  
   Bike Score: 64

9. New York  
   Bike Score: 62

10. Chicago  
    Bike Score: 62
US Small City Rankings

- Boulder: Bikescore: 86
- Fort Collins: Bikescore: 78
- Ann Arbor: Bikescore: 76
- Tempe: Bikescore: 75
- Eugene: Bikescore: 75
- Austin: Bikescore: 45
Challenges: Developing the Score

• Decisions, decisions....
  – Evidence-informed, where possible (e.g., thresholds for detour)
  – Weighting bike facility types
    • cycle tracks (2), off-street paths (2), residential bikeways (1.5), bike lanes (1)
  – Environmental factors versus social factors

• Key messages
  – Within cities versus between cities
Looking within Portland

Bike Lane Score

Destinations Score

Bike Commuter (only for US)

Hill Score
Bike Score versus Actual Cycling

% of Commute Trips By Bicycle (2006) Census

Average Bike Score
Uptake

- Launch May 14, 2012 – Bike Month in the US
- Radio: NPR, CBC, CKNW, News1130....
- Print:
  - Blogosphere and Twitter

- Key feedback – municipal planners
- Webinar in summer 2012
Conclusions

- Novel example of taking research into practice
- Success based on partnership, cooperation
- Key uses:
  - for transportation planners, to identify locations for new cycling routes
  - for engineers, to design bikeable facilities
  - for the public, to choose where to live that supports an active lifestyle, to advocate for change in low scoring areas, to motivate cycling in high scoring areas
- Beta version
  - 26 cities complete, more to come
  - currently only heat maps, location-based Bike Scores to come this year

Contact Walk Score for info on creating Bike Score in your municipality
thanks

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www.cyclingincities.spph.ubc.ca

Canadian Institutes of Health Research

www.walkscore.com/bike