

START THE CYCLE



Who Are We?

In January of this year eleven graduate students in the department of geography came together to found McMaster University's Geographers Without Borders (MacGWB). Geographer's Without Borders' primary mandate connects students with the greater community to foster intellectual support to social projects where skills obtained in the field of geography can provide a unique service to the organization seeking help.



Our first project started at home, here at McMaster University, where this fall we will begin organizing a \$5,000 funded SPICES (Student-proposed Projects for Intellectual Community and Engaged Scholarship) project to promote the transfer of knowledge from our discipline to all McMaster students through a lecture series. Students attending these lectures will receive a certificate of completion that will move McMaster Students towards a certification as future planners in the fields of Urban, Environmental, Economic, and Transportation planning.

Our second project tasks McMaster students and recent graduates with fostering a local legacy for the 2015 Pan American Games by aiding in the design of Hamilton's new Cannon Street bike path. Geographers Without Borders has been awarded \$25,000 dollars from TransCanada Trail Ontario to aid in project research, design, and promotion, in order to ensure that the path is used not only for the games but for years to come. Initial research for this project has shown that:

“Activities should be targeted at the whole community and at all ages but in particular the younger generation at school who generally have a greater propensity to change their behaviour and will provide a positive influence for their own children in the future. Encouraging cycling at school will be critical to influence people from a young age. This will enable cycling to become the norm in the future¹.”

i London Games Olympic and Paralympic Transport Legacy Action Plan (2012) “Leaving a Transport Legacy” Greater London Authority.

Out of this research Start the Cycle was born as an innovative world's first plan to encourage biking amongst school age and especially disadvantaged young people.

Start the Cycle is a social entrepreneurship venture founded by two McMaster Students – PhD Candidate Charles Burke and Masters of Science Candidate Justin Hall – each with research interests that fall in the field of transportation planning for active mobility. In short Start the Cycle operates a non-profit 'bike share' program for school aged children between the ages of 5 and 15 based on the same for profit bike share model used to promote bicycle use for transport in cities across Canada and the United States. The 2015 Pan American games Cannon Street bike path project provides an ideal opportunity to form a pilot project for Start the Cycle as it coincides with available funding and existing new infrastructure plans.

How Does it Work?



Photo: Forbes Magazine, Two young bike enthusiasts would be thrilled with bike share access

We all have heard of or even used ourselves city 'bike share' programs that allow adults to 'share' a bicycle by accessing it through credit card payment. Bikes are locked in stations at optimal locations across the city. Individuals borrow and return bicycles to these stations after a period of use.

Profitability of Bike Share

This model has been successful at fostering active mobility in major cities¹. However the profitability of the bike share in what is possibly Canada's most notable program has been doubtful². Start the Cycle overcomes profitability issues by working with cities on a not-for-profit basis. Furthermore because we focus on providing bike share infrastructure to school age children we may actually improve the profitability of current for profit bike share by 'piggy backing' on station infrastructure that has already been built. By combining for profit bike share for adults and not-for-profit bike share for children the synergies created by allowing for entire families to bike together may actually improve the profitability of current bike share programs which are restricted to adults.

Restrictions

One constantly recognized issue with bike share programs are its restrictions towards young people³⁴. First and foremost are the restrictive sizes of the bikes used in bike share programs which are built for use by individuals of average adult height. Currently biking of adults and children in bike share programs are not possible even if the adult did unlock access through credit card payment, since the size of the bike is restrictive.



Photo: Chad Rachman, New York Post,
Biking with Child is tough for Dad



Photo: YouTube
Clip on bike seat for school aged children

Second young people between the age of 5 and 15 do not themselves hold credit cards. While the purpose of using credit cards to access bikes is primarily to generate profit, it serves a secondary and equally important purpose to ensure return of the

1 Cripps, K. (2013) "Bike share boom: 7 cities doing it right" accessed June, 2014: <http://www.cnn.com/2013/12/05/travel/bike-share-boom-global-report/>

2 CBC News (2014) "Bixi owes \$50M, files for bankruptcy protection" accessed June, 2014: <http://www.cbc.ca/news/canada/mon-treal/bixi-owes-50m-files-for-bankruptcy-protection-1.2503974>

3 Klimas, L (2014) "Dad Invents Pop-on Kid's Seat for City's Bike-Sharing Program — Then He's Ordered to 'Cease and Desist'" accessed June, 2014: <http://www.theblaze.com/stories/2014/06/03/dad-invents-pop-on-kids-seat-for-citys-bike-sharing-program-then-hes-ordered-to-cess-and-desist/>

4 Bernstein, A. (2013) Your Bike Share Questions, Answered accessed June, 2014: <http://www.wnyc.org/story/295162-your-bike-share-questions-answered/>

bicycles. However if this same for profit model was used for libraries, a service where insurance of return is necessary for continued use of the program, children would similarly be restricted access to reading materials. Start the Cycle eliminates the use of credit card payment to access bike share bicycles by providing free bike helmets with unique pin codes through a partnership with our sponsors (potential retail sponsors are identified later). The pin on the helmet would be used to unlock the station as well as track its return. The advantage of free helmet model in lieu of credit card access is not only universal access for children but moreover the promotion of safe bicycle use. An additional benefit which is likely to attract sponsorship is the potential for increased sales for our partner. Helmets would be picked up onsite from the partner's retail location fostering greater foot traffic in store with the potential to increase sales.

Finally many current bike share programs set restrictions where the youngest riders allowed to use many bike share programs are set at 16 years of age⁵. This age floor is provides part of the reasoning behind Start the Cycle's target user group of ages 5 to 15.

Differences Between Start the Cycle and Other Bicycle Donation Programs

Start the Cycle is not only unique in the fact that currently no urban bike share for profit or not-for-profit targets school age children, the very individuals most in need of an urban bicycle, but it is also unique from other bike donations programs that currently exist to provide bicycles to youth.

A recent interview with a local bicycle donation charity in Hamilton illuminated the need for a sharing model. Although this organization did not keep track of how many bikes have been given to community youths, demand has always outstripped supply. Start the Cycle's model, given proper sharing, allows for one sole bike to service several to possibly dozens of children in the community at any one time. No more will lack of donations constrain demand for bicycles and charities will no longer have to choose which child is most in need of a bike that may mean the difference in healthy activity and mobility. In short we do what existing donation based charities do but reach a much wider audience with less.

Second, similar to the library program a bike share program fosters not only personal but social and civic responsibility. Children must 'share' a bike with others recognizing the importance of care and timely return of that bike to ensure someone like him or herself access. Fostering this particular kind of responsibility may spillover into understanding of greater social issues that can be tackled through larger cooperation like many local civic and global issues we face as a society.

Benefits of Youth Access to Bicycles

Community Benefits

A recent study has shown that the use of municipal bike lane and path infrastructure primarily benefits financially stable white males⁶. This finding degrades the benefits of taxpayer funded projects for a wide range of individuals in the community, individuals of all races and financial standing. On the basis of social justice one may argue that investments in bike paths and lanes may be better made somewhere else in the community to better benefit all. However this thinking is short sighted because removing the barrier to access can overcome this issue and foster continued use of cycling for all throughout an individual's life. These behaviour changes are not exclusive to one socioeconomic demographic, simply put financially stable white males likely have grown up with bicycle access their entire lives carrying over to increased use amongst this cohort today. Because of this American cities (including Baltimore and Albuquerque) have begun "a growing trend of teaching young people - especially those from demographic groups that historically haven't embraced biking - how to repair and ride bikes⁷."

Demographics of Baltimore's Bike Commuters

| | Black | White | Other |
|-----------------------|----------------------|-------------------|------------------|
| Racial Group | 8% | 87% | 5% |
| | Less than Bachelor's | Bachelor's Degree | Above Bachelor's |
| Highest Edu. Attained | 22% | 37% | 41% |

Source: 2007-2011 Census American Community Survey microdata obtained from IPUMS-USA, Minnesota Population Center

Safety Benefits

Translink Vancouver finds that:

"The most effective way to provide universal cycling skills training is to incorporate it into the elementary school curriculum, as is done in Denmark, the Netherlands, Germany, and the UK. In this way the next generation is more likely to cycle frequently and to have a higher level of cycling competence and awareness."

⁶ CTRF Annual Conference (2014) "Complete Streets Discussion" Windsor, Ontario.

⁷ Wogan, J.B. (2014) "Can Cities Change the Face of Biking?" Governing Magazine accessed June, 2014: <http://www.governing.com/topics/urban/gov-can-cities-change-face-biking.html>

Start the Cycle provides opportunities to target safety awareness events for school age children in conjunction with a physical activity curriculum. Furthermore children will be able to apply this learning regardless of whether or not he or she actually owns a bike.

Moreover a recent study found that, “Children in the high-income areas were consistently more likely to wear helmets, compared with children in the mid- and low-income areas⁸.” Start the Cycle’s use of a bike helmet to unlock the use of the bike share program will ensure children of all socio-economic backgrounds the use and safety of a bike helmet.

Health and Mobility Benefits

Current guidelines for healthy rates of physical activity for children and youth require 60 minutes of moderate to vigorous physical activity (MVPA) per day. Currently, more than 90% of Canadian children do not meet this standard⁹. Cycling is one of the most beneficial means of accruing MVPA because youth can reach the cardio training zone more readily than walking¹⁰. Promoting physical activity in youth requires focus on when they are already active. A recent study has found the majority of youth physical activity, 55%, is accrued by commuting to and from schools or other activity locations such as the mall or parks¹¹. In addition to improved physical health, youths who walked or biked to school performed measurably better on tasks demanding concentration than those who drove or took public transit¹².

Providing bikes for kids through Start the Cycle will enable children to be more independent and improve their mobility. Some children today have less independence than their parents did and this lack of independence can negatively impact their social behaviour development¹³. Children may lose some of the opportunities to make decisions independently, learning from mistakes and gaining confidence from their success¹⁴. A bike can extend the travel range for youth significantly providing increased access to recreation centres, parks, libraries and other services.

8 Parkin, P. C., Khambalia, A., Kmet, L., & Macarthur, C. (2003). Influence of socioeconomic status on the effectiveness of bicycle helmet legislation for children: a prospective observational study. *Pediatrics*, 112(3), e192-e196.

9 Garrigué, D. & Colley, R. C. (2012) Daily patterns of physical activity among Canadians. Components of Statistics Canada Catalogue: Health Reports. 82-003-X

10 Shepard, R. (2008) Is Active Commuting the Answer to Population Health. *Sports Med.* 38:9, 751-758.

11 Rainham, D., Bates, C., Blanchard, C., Dummer, T., Kirk, S., Shearer, C. (2012) Spatial Classification of Youth Physical Activity Patterns. *American Journal of Preventative Medicine.* 42:5, 87-96.

12 Sarah Goodyear (2013) The link between Kids who walk or Bike to School and Concentration. Accessed June, 2014 <http://www.citylab.com/commute/2013/02/kids-who-walk-or-bike-school-concentrate-better-study-shows/4585/>

13 Huttenmoser, M. (1995) Children and Their Living Surroundings: Empirical Investigations into the Significance of Living Surroundings for the Everyday Life and Development of Children. *Children's Environments.* 12:4.

14 Safe Routes (n.d.) What are the health benefits for children who walk or bicycle to school? Accessed June, 2014. <http://www.saferoutesinfo.org/program-tools/what-are-health-benefits-children-who-walk-or-bicycle-school/>

Benefits of Youth Access to Bicycles

Funding

Approximately \$15,000 from the TransCanada Trail Ontario- 2015 Pan American Games project has been designated to Start the Cycle. Start the Cycle will use these funds to implement a bike share pilot program for school aged youth in conjunction with the building of the Cannon Street bike path. As part of this pilot we hope to measure the use (time, distance) and return rate of bicycles amongst school aged children and the potential for theft and vandalism. We anticipate high use and a good rate of return.

Research and Data

Use will be tracked through the pin codes entered by the users which will be obtained when they collect their bike helmet. When the bikes are returned the pin code is inputted again allowing us to track the time of use and approximate distance. Each user will be given their own unique pin allowing us to measure the success of the project by the number of unique pins used to access the bike.

Although there are no comparable youth bike share programs many of the adult bike share programs have a return rate of 97% or higher (of course the penalties for non-return are significant in such programs). Furthermore cities have found that bike share programs have extremely low vandalism rates and that while authorities expected to lose approximately 10% or more bikes to crime each year the observed theft was only 0.3%.

Liability

Insurance will be purchased for Start the Cycle to cover any indirect liability issues. Direct liability will be the responsibility of the parents who must sign a waiver upon the child receiving their bike helmet and unique pin number.

Needs

Current needs for Start the Cycle is operating and meeting space, as well as continued funding and mentorship in the field of not-for-profit organizing. Key sponsorship partners for sustainable Start the Cycle bike share projects are identified in the following section.

Current Bike Share Programs and Potential Partners

Canadian Bike Share Programs

| City | Name | Link | Stations | Bicycles |
|-----------------|--|---|----------|----------|
| Hamilton | Hamilton Bike Share (Social Bikes) | http://www.hamiltonbikeshare.ca | 80 | 750 |
| Kitchener | Community Access Bicycles | http://www.theworkingcentre.org/community-access-bikeshare/523 | 5 | 11 |
| Montreal | Bixi Montreal | | 411 | 5120 |
| Ottawa-Gatineau | Capital Bixi | | 25 | 250 |
| Waterloo | Grand River Public Bike Share Inc. | http://grandriverpublicbikeshare.ca/ | 10 | 100 |
| Toronto | Bike Share Toronto (formerly Bixi Bikes) | | 80 | 1000 |
| Vancouver | Vancouver Public Bike Share (Alta Bicycle Share) | http://vancouver.ca/streets-transportation/public-bike-share-system.aspx | 25 | 250 |

Current and potential partners

The following have been identified as partners who would help the project progress forwards. Some have already been contacted.

| Company Name | Main Contact | Contacted |
|--|-----------------|-----------|
| Active Transportation, City of Hamilton | Daryl Bender | Yes |
| Trans-Canada Trails | Jim Patterson | Yes |
| Bike for Mike | N/A | no |
| Hamilton Cycling Committee | Daryl Bender | Yes |
| Transportation Demand Management, City of Hamilton | Peter Topalovic | No |
| City of Hamilton Public Health Services | Kelly Scott | No |
| Canadian Tire First Start | N/A | No |
| School Travel Planning | N/A | No |
| ParticipAction | Kelly Murumets | No |

Our Team

Charles Burke is a PhD Candidate in Transportation Planning working out of McMaster University's TransLab. He has a Master's Degree in Public Policy from the University of Windsor and a Bachelor's Degree in Environmental Science from Bishop's University in Sherbrooke, Quebec. His research interests include the addition of active transportation infrastructure to road networks and their effect on traffic congestion. Charles has been published in the journal of Transport Policy and has been a featured columnist for Canadian Geographic. Charles is a member of the Canadian Transportation Research Forum, Canadian Regional Science Association, and recently won Transportation Canada's Scholarship for Travel Safety and Security.

Justin Hall is a Masters Candidate in Transportation Planning working out of McMaster University's TransLab. He received his Undergraduate Degree in Community Design with an Honours in Urban Design from Dalhousie University in Halifax, Nova Scotia. Justin's research has focused on collision data collection and modeling active transportation habits and behaviours. Justin has also worked for School Travel Planning Nova Scotia assisting students, parents and school staff to identify and remediate built environment hazards around schools to promote safe active transportation routes to school.