

# Active Transportation Backgrounder

*(Compiled by Beth McKechnie, Green Commuting Initiatives, Resource Conservation Manitoba)*

Active Transportation includes any form of human-powered travel, primarily walking and cycling, but can include other modes such as in-line skating and skateboarding.

A growing body of research is available to support the important role of Active Transportation in terms of improving physical and mental health, creating liveable and vibrant communities, and mitigating climate change. Below is a compilation of key research findings addressing the following questions:

- *Is there a link between obesity and modes of transportation?* [refer p.2]
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## *Is there a link between obesity and modes of transportation?*

- **A study by the Canadian Population Health Initiative found that in sectors [geographic areas] where over 95% of residents go to work by car, 54% of the population is overweight. In sectors where less than 60% of residents rely on automobiles to go to work, 42% of the population is overweight. Moreover, reliance on mass transit and cycling displays an inverse relationship: the more residents rely on these modes of transportation, the less overweight they are.**

Source: Urban Transportation, a Question of Health. 2006 Annual Report on the Health of the Population, Province of Quebec, p. 74-75. Original research cited: Canadian Institute for Health Information. 2006. *Improving the Health of Canadians: Promoting Healthy Weights*, 131 p.

- **There is a direct link between transportation habits and the likelihood of being obese. Indeed, each km travelled every day on foot is linked to a reduction of nearly 5% in the likelihood of being obese. Inversely, each additional 60-minute segment per day spent in a motor vehicle as driver or passenger corresponds to a 6% increase in the likelihood of being obese.**

Source: Urban Transportation, a Question of Health. 2006 Annual Report on the Health of the Population, Province of Quebec, p. 74-75. Original research cited: Frank, L., Andersen, M.A., Schmid, T.L. 2004. "Obesity Relationships with Community Design, Physical Activity and Time Spent in Cars", *American Journal of Prevention Medicine*, 27 (2), p. 87-97.

- **In western [European] countries where obesity rates are lower than in Canada or the U.S., active transportation is much more widespread. For example, the modal share of active transportation stands at 28% in Italy, 39% in Sweden, 41% in Denmark and 46% in the Netherlands, but only 12% in Canada and 7% in the U.S. Indeed, obesity is more prevalent in industrialized nations in which the modal share of AT is the lowest (i.e. U.S., England and Canada).**

Source: Urban Transportation, a Question of Health. 2006 Annual Report on the Health of the Population, Province of Quebec, p. 72. Original research cited: Pucher J. and Dijkstra L. 2003. "Promoting Safe Walking and Cycling to Improve Public Health: Lessons from the Netherlands and Germany", *American Journal of Public Health*, 93 (9) p. 1509-1516.

## *What are Winnipeggers' transportation habits?*

- **Driving as the main mode of travel used most often to commute to work [in Winnipeg] increased from 68.7% to 72.9% between 2000 and 2004.**

Source: 2004 Active Transportation Survey Report. City of Winnipeg, Public Works Department, Customer Services Division. *The City of Winnipeg Active Transportation Study*, February 2005. Appendix B, p. 5. Available at [www.winnipeg.ca/services/Transportation](http://www.winnipeg.ca/services/Transportation). Accessed: 29-Jan-07.

- **In a spring 2004 telephone survey by the City of Winnipeg’s Public Works Department, 79.7% of respondents indicated they travel by car most often to work, 86.4% travel by car most often to shop, and 85.2% travel by car most often to social or recreational events. In the same survey, 4.3% of respondents indicated they walk most often to work and 2.8% indicated they cycle to work. A total of 6% of respondents walk most often to social and recreational events and 6.1% walk most often to shop.**

Source: Marr Consulting and Communications Ltd. February 2005. *The City of Winnipeg Active Transportation Study*, p. 75. Available at [www.winnipeg.ca/services/Transportation](http://www.winnipeg.ca/services/Transportation). Accessed: 29-Jan-07.

- **According to Manitoba parents, only 27% of children aged 5-17 use entirely active modes to travel to and from school each day, while 42% of children aged 5-17 rely solely on inactive modes of transportation to get to school.**

Source: Winnipeg *in motion*. See: [www.winnipeginmotion.ca/communities/facts.php](http://www.winnipeginmotion.ca/communities/facts.php) Accessed: 06-Dec-06. 2000 Physical Activity Monitor, Canadian Fitness and Lifestyle Research Institute. Available at: [www.cflri.ca/eng/provincial\\_data/pam2000/manitoba.php](http://www.cflri.ca/eng/provincial_data/pam2000/manitoba.php)

## *What are the obesity and activity levels in Manitoba and Canada?*

- **Manitoba children (2-17 years old) are more overweight and obese than Canadian children in general, with 31% of Manitoban children classified as overweight or obese compared to 26% of Canadian children.**

Source: Province of Manitoba, Healthy Schools. [www.gov.mb.ca/healthyschools/issues/physical.html](http://www.gov.mb.ca/healthyschools/issues/physical.html)  
Please see website for list of original source citations. Accessed: 06-Dec-06.

- **In Canada, 71% of Canadian men and 47% of women aged 20-64 years old are overweight or obese.**

Source: Manitoba *in motion*. See: [www.manitobainmotion.ca/adults/facts.php](http://www.manitobainmotion.ca/adults/facts.php) Original source cited: Tremblay, M.S., Katzmarzyk, P.T., and Willms, J.D. (2002). Temporal trends in overweight and obesity in Canada, 1981-1996. *International Journal of Obesity and Related Metabolic Disorders*, 26 (4), p. 538-43.

- **Only about 10% of Manitoban children meet the level of activity recommended in Canada’s Physical Activity Guidelines of 60 minutes of moderate activity and 30 minutes of vigorous activity per day (or at least 5 days per week).**

Source: *in motion* Baseline Survey, University of Manitoba (in partnership with Manitoba *in motion* and Winnipeg *in motion*), February 2007. Available at: [www.manitobainmotion.ca](http://www.manitobainmotion.ca) or [www.winnipeginmotion.ca](http://www.winnipeginmotion.ca). Accessed 06-Feb-07.

- **About 30% of Manitoban adults report not getting even the minimum daily physical activity recommended in Canada’s Physical Activity Guidelines (60 minutes of light activity daily, or 30 minutes of moderate activity 4 days a week, or 20 minutes of vigorous activity 4 days a week).**

Source: *in motion* Baseline Survey, University of Manitoba (in partnership with Manitoba *in motion* and Winnipeg *in motion*), February 2007. Available at: [www.manitobainmotion.ca](http://www.manitobainmotion.ca) or [www.winnipeginmotion.ca](http://www.winnipeginmotion.ca). Accessed 06-Feb-07.

- **Excess weight and inactivity are resulting in the risk of serious health complications for our youth. For example, 4 in 10 Canadian children have a least one risk factor for heart disease due to inactive lifestyles and the appearance of type 2 diabetes in children is increasing.**

Source: Province of Manitoba, Healthy Schools. [www.gov.mb.ca/healthyschools/issues/physical.html](http://www.gov.mb.ca/healthyschools/issues/physical.html)  
Please see website for list of original source citations. Accessed: 06-Dec-06.

- **The most common barrier Manitobans report that “gets in the way of them being as active as they would like” is “other commitments”, cited by over half of all adults surveyed. This included working, volunteering, lack of time, too busy, childcare, family or household responsibilities and school work – indicating that most adults Manitobans are needing time efficient ways to be more physically active.**

Source: *in motion* Baseline Survey, University of Manitoba (in partnership with Manitoba *in motion* and Winnipeg *in motion*), February 2007. Available at: [www.manitobainmotion.ca](http://www.manitobainmotion.ca) or [www.winnipeginmotion.ca](http://www.winnipeginmotion.ca). Accessed 06-Feb-07.

- **About 50% of adult Manitobans reported getting “some” activity, but less than 20% reported getting “lots” of activity by “going places” – indicating significant potential to improve the number of adults using active transportation as a means to increase their level of activity.**

Source: *in motion* Baseline Survey, University of Manitoba (in partnership with Manitoba *in motion* and Winnipeg *in motion*), February 2007. Available at: [www.manitobainmotion.ca](http://www.manitobainmotion.ca) or [www.winnipeginmotion.ca](http://www.winnipeginmotion.ca). Accessed 06-Feb-07.

## *How does physical activity influence mental health?*

- **A sedentary lifestyle is generally associated with increased odds of a below-median score on a standardized mental health subscale regardless of weight. [In other words, regardless of weight, your mental health may suffer if you are sedentary.]**

Source: Craig, C.L., Bauman, A., Phongsavan, P., Stephens, T., Harris, S.J. 2006. “Jolly, fit and fat: Should we be singing the ‘Santa Too Fat Blues?’”, *Canadian Medical Association Journal*. 175 (12), pp. 1563-1566.

- **Physical activity appears to relieve symptoms of depression and anxiety and improves mood. Regular physical activity may reduce the risk of developing depression.**

Source: *A Report of the Surgeon General: Physical Activity and Health*, U.S. Department of Health and Human Services. 2006.

## *What are the economic costs of physical inactivity and obesity?*

- **Overweight and obesity are linked to heart disease, certain types of cancer, type 2 diabetes, stroke, arthritis, breathing problems, and psychological disorders such as depression.**

Source: Winnipeg *in motion*. See: [www.manitobainmotion.ca/adults/facts.php](http://www.manitobainmotion.ca/adults/facts.php) Original source cited: Office of the Surgeon General (2003). Overweight and obesity: health consequences. U.S. Department of Health and Human Services: Washington, District of Columbia. Available URL: [www.surgeongeneral.gov/topics/obesity/calltoaction/fact\\_consequences.htm](http://www.surgeongeneral.gov/topics/obesity/calltoaction/fact_consequences.htm). Accessed: 04-Dec-03.

- **A 2000 study estimated that obesity-related illnesses cost the Manitoba health care system \$140 million annually or 7.3% of total direct health care costs in the province. When productivity losses due to obesity, including premature death, absenteeism and disability, are added, the total cost of obesity to the Manitoba economy is estimated at between \$270 million and \$305 million a year, equal to 1% of the province's GDP.**

Source: Colman, R. December, 2000. *Cost of obesity in Manitoba*. GPIAtlantic. Available at: [www.gpiatlantic.org/pdf/health/obesity/man-obesity.pdf](http://www.gpiatlantic.org/pdf/health/obesity/man-obesity.pdf) Accessed: 16-Jan-07.

- **About \$2.1 billion, or 2.5% of the total direct health care costs in Canada, were attributable to physical inactivity in 1999. About 21,000 lives were lost prematurely in 1995 because of inactivity. A 10% reduction in physical inactivity has the potential to reduce direct health care expenditures by \$150 million a year. This saving does not include indirect costs such as lost productivity due to illness, premature death, or a range of other health conditions, including mental illness and poor quality of life.**

Source: Katzmarzyk, P.T., Gledhill, N., Shephard, R.J. 2000. "The economic burden of physical inactivity in Canada", *Canadian Medical Association Journal*, 163 (11), p. 1435-40.

- **A study update on the financial costs of physical inactivity and obesity in Canada estimated the country's economic burden at \$4.3 billion in 2001.**

Source: Katzmarzyk, P.T. and I. Janssen, "The Economic Costs Associated With Physical Inactivity and Obesity in Canada: An Update", *Canadian Journal of Applied Physiology*, Vol. 29, No. 1, 2004, p. 104.

## *Is it cost effective for workplaces to invest in physical activity?*

- **In companies with employee physical activity initiatives, the improvements in productivity and reductions in absenteeism, turnover and injury can result in a benefit of \$513 per worker per year.**

Source: Campbell, R. and M. Wittgens, Better Environmentally Sound Transportation. 2004. *The Business Case for Active Transportation: The Economic Benefits of Walking and Cycling*. Go for Green, p. 25. Original source cited: World Health Organization, *Economic Benefits of Physical Activity*, 2003.

- **Canada Life in Toronto showed a return on investment of \$3.40 on each corporate dollar invested through reduced employee turnover, productivity gains and decreased medical claims.**

Source: Public Health Agency of Canada. "The Business Case for Active Living at Work" Available at: [www.phac-aspc.gc.ca/pau-uap/fitness/work/trends\\_e.html](http://www.phac-aspc.gc.ca/pau-uap/fitness/work/trends_e.html). Accessed: 05-Dec-06.

- **B.C. Hydro employees enrolled in a work-sponsored fitness program had a turnover rate of 3.5% compared with the company average of 10.3%.**

Source: Public Health Agency of Canada. "The Business Case for Active Living at Work" Available at: [www.phac-aspc.gc.ca/pau-uap/fitness/work/trends\\_e.html](http://www.phac-aspc.gc.ca/pau-uap/fitness/work/trends_e.html). Accessed: 05-Dec-06.

- **In a Canadian government study, the Canada Life Assurance Company saw a 4% increase in productivity among staff participating in an employee fitness program. Furthermore, 47% of program participants reported that they felt more alert, had better rapport with their co-workers, and generally enjoyed their work more.**

Source: Source: TravelSMART Employer Pack, p. 25. TravelSmart Victoria, Australia. Original research cited: Shephard, Roy. "Employee Health and Fitness: The State of the Art (The Canadian Employee Fitness and Lifestyle Project)" *Preventative Medicine*, 1983:12 644-653.

- **The total benefit per year possible if all 12.2 million Canadian workers who commute were physically active is \$6,258,600,000. Each 1% increase in physical activity results in a benefit of \$625,586,000.**

Source: Campbell, R. and M. Wittgens, Better Environmentally Sound Transportation. 2004. *The Business Case for Active Transportation: The Economic Benefits of Walking and Cycling*. Go for Green, p. 26.

- **Businesses that encourage staff to cycle to work benefit from increased productivity as a result of improved fitness and mental health. Staff who cycle are more punctual and take fewer sick days due to improved health.**

Source: TravelSMART Employer Pack, p. 25. TravelSmart Victoria, Australia. Original research cited: Queensland Transport and Main Roads. 1999. *Cycle South East. Integrated Cycle Strategy for South East Queensland*. Brisbane: Queensland Government.

- **Absenteeism has been shown to be reduced by having healthier employees. For example, a two-year study by the DuPont Corporation of the effect of its comprehensive health promotion program on absences among workers found that employees involved in the programs had a 14% decline in the number of days off. Overall, the company saved more than 11,000 days that would normally be lost to absenteeism.**

Source: TravelSMART Employer Pack, p. 25. TravelSmart Victoria, Australia. Original research cited: Bertera, R. *The Effects of Workplace Health Promotion on Absenteeism and Employee Costs in a Large Industrial Population*. American Journal of Public Health, September 1990: 1101-1105.

- **Swedish investigators found that mental performance was significantly better in physically fit workers than in non-fit workers. Fit workers committed 27% fewer errors on tasks involving concentration and short-term memory, as compared with the performance of non-fit workers.**

Source: TravelSMART Employer Pack, p. 25. TravelSmart Victoria, Australia. Original research cited: Sjoberg, Hans. *Physical Fitness and Mental Performance During and After Work*. Ergonomics, 1983: 23 977-987.

## *What is the role of Active Transportation in physical activity levels?*

- **In 1998, the proportion of Quebecers 15 years of age or over who reached the minimum level of physical activity recommended increased from 43% to 54% when active transportation is added to leisure time physical activity. The contribution made by active transportation to the attainment of the recommended volume of physical activity is thus decisive.**

Source: Urban Transportation, a Question of Health, 2006 Annual Report on the Health of the Population, Province of Quebec, p. 70. Original research cited: Nolin, B., Pampalon, R., Hamel, D. 2005. *Marche et bicyclette utilisées comme moyen de transport au Québec : un regard selon les milieux de vie*, Québec, INSPQ, JASP, Québec, novembre.

- **While leisure time physical activity has become more widespread, it is still not practised sufficiently. Active transportation could overcome these shortcomings.**

Source: Urban Transportation, a Question of Health. 2006 Annual Report on the Health of the Population, Province of Quebec, p. 72-73.

- **Multi-level, multi-strategy approaches directed to achieve environmental, policy, community and individual outcomes are likely to be most effective in promoting sustained increases in physical activity in the population.**

Source: Queensland Health, Public Health Services. 2001. *Supportive Environments for Active Living – a strategic framework for action to assist in creating, enhancing and sustaining environments that support active living*. Brisbane: Queensland Health. Original research cited: Donovan, R.J. and Owen, N. 'Social Marketing and Population Interventions' in *Advances in Exercise Adherence*, ed. R.K. Dishman, Human Kinetics, Hampaign, Illinois, 1994, and World Health Organization, *The Jakarta Declaration on Leading Health Promotion in the 21<sup>st</sup> Century*. WHO: Geneva, 1997.

## *What are the long-term health benefits of Active Transportation?*

- **In Denmark, where active transportation is very popular, 46% of adults 25 years of age or over cycle to work year round and 70% do so during the summer. Longitudinal studies that take into account all other risk factors, including leisure time physical activity, reveal that Danish adults who do *not* cycle to work display a general mortality rate 40% higher than that of adults who cycle to work. These findings focus on a population that devotes on average three hours per week to active transportation, a duration that is easy to achieve.**

Source: Urban Transportation, a Question of Health. 2006 Annual Report on the Health of the Population, Province of Quebec, p. 80. Original research: Lars Bo Andersen, Peter Schnohr, Marianne Schroll, Hans Ole Hein. 2000. "All-Cause Mortality Associated with Physical Activity During Leisure Time, Work, Sports, and Cycling to Work", *Archives of Internal Medicine*, 160 (11), p. 1621-1628.

## *What are the benefits of Active Transportation specific to children?*

- **A British government survey of teachers revealed that, based on their professional observations, 9 in 10 believe that children who walk to school arrive more alert and better able to concentrate. 87% believed that walking to school gives children a chance to wake up fully before they reach the classroom, and 60% felt that children who walked to school "settled down" better once in the classroom.**

Source: Walkingschoolbus.com ([www.walkingschoolbus.com](http://www.walkingschoolbus.com)) Original research: Department for Transport, Local Government and the Regions, U.K. 2001.

- **Promotion of active/safe routes to school may have shown cognitive benefits, as children who walk to school have shown stronger perceptual and observational skills, as seen in community map-making skills, in comparison to their classmates who are driven to school.**

Source: Active/Safe Routes to School, Canadian Institute of Child Health and Go for Green. Original source cited: Kennedy, J. Greenest Cities Project Toronto. Personal communication, June 1998.

- **A Canadian study of children in urban, rural and Old Order Mennonite communities indicates that physical activity embedded in daily routines, such as active transportation, physically active playtime and by doing chores, may result in better fitness levels than organized sports in an otherwise sedentary lifestyle.**

Source: Medical Post August 23, 2005 Volume 41 Issue 28  
or CIHI [http://secure.cihi.ca/cihiweb/dispPage.jsp?cw\\_page=media\\_05jul2005\\_e](http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=media_05jul2005_e)

## *What are the social and economic benefits of Active Transportation?*

- **Walking and cycling allow much more personal interaction between people than driving. People who are walking and cycling are more likely to meet and converse with each other. This interaction can lead to a stronger sense of community.**

Source: Campbell, R. and M. Wittgens, Better Environmentally Sound Transportation. 2004. *The Business Case for Active Transportation: The Economic Benefits of Walking and Cycling*. Go for Green, p. 23.

- **In his popular book *Bowling Alone*, Robert Putnam (2000) found [car] commute time to be the strongest predictor of civic involvement. In fact, every 10 additional minutes commuting was associated with a 10% drop in community involvement.**

Source: Frank, L., S. Kavage, and T. Litman. Prepared for SmartGrowthBC. 2006. *Promoting public health through Smart Growth*. Available at: [www.smartgrowth.bc.ca/downloads/SGBC\\_Health%20Report%20Final.pdf](http://www.smartgrowth.bc.ca/downloads/SGBC_Health%20Report%20Final.pdf) Accessed: 16-Jan-07.

- **Improving active transportation facilities and reducing motorized traffic can help communities become more "liveable", thus increasing property values and retail activity.**

Source: Campbell, R. and M. Wittgens, Better Environmentally Sound Transportation. 2004. *The Business Case for Active Transportation: The Economic Benefits of Walking and Cycling*. Go for Green, p. 23.

- **Motor vehicles cause various types of noise, including engine acceleration, tire/road contact, braking, horns and vehicle theft alarms. Vehicle noise imposes disturbance and discomfort. Non-motorized [active] travel tends to replace driving on noise-sensitive, residential streets, and peak-period trips occur during early morning when noise sensitivity is high.**

Source: Campbell, R. and M. Wittgens, Better Environmentally Sound Transportation. 2004. *The Business Case for Active Transportation: The Economic Benefits of Walking and Cycling*. Go for Green, p. 21.

- **Accommodating active transportation has been shown to increase property values. Properties near trails and neighbourhoods with pedestrian friendly features such as narrow streets, sidewalks, curb bulges and traffic circles are proving to be popular with buyers and will command higher prices.**

Source: Campbell, R. and M. Wittgens, Better Environmentally Sound Transportation. 2004. *The Business Case for Active Transportation: The Economic Benefits of Walking and Cycling*. Go for Green, p. 32.

- **A 1999 study of four new pedestrian-friendly communities determined that homebuyers were willing to pay a \$20,000 premium for homes in them compared to similar houses in surrounding areas.**

Source: Local Government Commission, Center for Livable Communities. "The Economic Benefits of Walkable Communities" Available at: [www.lgc.org/freepub/PDF/Land\\_Use/focus/walk\\_to\\_money.pdf](http://www.lgc.org/freepub/PDF/Land_Use/focus/walk_to_money.pdf) Accessed: 07-Dec-06. Original research cited: Eppli, M.J. and C.C. Tu. 1999. *Valuing the New Urbanism: The Impact of the New Urbanism on Prices of Single-Family Homes*. Urban Land Institute.

- **According to a 1998 analysis, real estate values over the next 25 years will rise fastest in “smart communities” that incorporate traditional characteristics of successful cities, including a mix of residential and commercial districts and a “pedestrian-friendly configuration”.**

Source: Local Government Commission, Center for Livable Communities. “The Economic Benefits of Walkable Communities” Available at: [www.lgc.org/freepub/PDF/Land\\_Use/focus/walk\\_to\\_money.pdf](http://www.lgc.org/freepub/PDF/Land_Use/focus/walk_to_money.pdf) Accessed: 07-Dec-06. Original research cited: *Defining New Limits: Emerging Trends in Real Estate*. 1998. ERE Yarmouth and Real Estate Research Corporation.

- **Recent downtown revitalization efforts across the [U.S.] within the past few decades have sought to embrace the density of downtown by increasing pedestrian friendliness and reversing the effects of accommodation to the automobile that was common in the 1950s and 1960s. Rather than being viewed as a burden, density is now being embraced by planners, architects, engineers, and businesses. Density creates an ideal environment for entrepreneurship, innovation and creativity, which are more important for a business’ success today more than ever before.**

Source: Steele, D. December 2003. *Transportation and Future of Downtown*. University of Wisconsin Milwaukee. Available online: [www.uwm.edu/Dept/CUTS/2050/downtown.pdf](http://www.uwm.edu/Dept/CUTS/2050/downtown.pdf) Accessed: 06-Dec-06.

- **Walkable communities will attract “new economy workers”. In a 1998 report, a Silicon Valley think tank profiled the connections between the physical design of communities and dynamic elements of the new knowledge-driven, service-oriented economy. The contemporary economy thrives on land use patterns that harken back to the towns of early industrial years, with city centers, corner stores and streetcar suburbs. Walkable downtowns with a mix of restaurants, offices and housing promote interaction. Interaction is key since the new economy thrives on accessibility, networking and creativity.**

Source: Local Government Commission, Center for Livable Communities. “The Economic Benefits of Walkable Communities” Available at: [www.lgc.org/freepub/PDF/Land\\_Use/focus/walk\\_to\\_money.pdf](http://www.lgc.org/freepub/PDF/Land_Use/focus/walk_to_money.pdf) Accessed: 07-Dec-06. Original research cited: *Linking the New Economy to Livable Communities*. 1998. Collaborative Economics.

- **Walkability is good for retail sales. Downtown Lodi, California launched a \$4.5 million public-private pedestrian-oriented project, including a retrofit of five main street blocks from building face to building face. The city credits the pedestrian improvements, as well as economic development incentives, with the 60 new businesses, the drop in the vacancy rate from 18% to 6%, and the 30% increase in downtown sales tax revenues since work was completed in 1997.**

Source: Local Government Commission, Center for Liveable Communities. “The Economic Benefits of Walkable Communities” Available at: [www.lgc.org/freepub/PDF/Land\\_Use/focus/walk\\_to\\_money.pdf](http://www.lgc.org/freepub/PDF/Land_Use/focus/walk_to_money.pdf) Accessed: 07-Dec-06.

## *What are the issues around Active Transportation and crime/personal safety?*

- **By increasing levels of walking, cycling and public transport usage in local communities, the levels of perceived and actual safety also increase, as there are “more eyes on the street” for natural surveillance, an important factor in crime prevention.**

Source: Queensland Health, Public Health Services. 2001. *Supportive Environments for Active Living – a strategic framework for action to assist in creating, enhancing and sustaining environments that support active living*. Brisbane: Queensland Health. Original research cited: O'Hare, D. and Westbrook, D. 2000. *Toward Supportive Environments for Physical Activity in Queensland: Report to the Project Reference Group*. Southport: Queensland Health.

- **There is strong evidence to suggest that an increase in the number of cyclists on a road decreases the risk of cycling. If the number of cyclists doubles, the number of fatalities only increases by 25% thus reducing the risk of cycling by 37%. It is likely that this is due to the increased expectation of drivers that there will be cyclists around, thus increasing the likelihood that they will drive in a manner that is less likely to injure cyclists.**

Source: Campbell, R. and M. Wittgens, Better Environmentally Sound Transportation. 2004. *The Business Case for Active Transportation: The Economic Benefits of Walking and Cycling*. Go for Green, p. 15.

## *What are the potential infrastructure cost savings associated with Active Transportation?*

- **A shift to active transportation will lead to lower roadway costs. A roadway can carry 7 to 12 times as many people per metre of lane per hour by bicycle compared to by automobile at similar speeds in urban areas. Paths for pedestrians are even more efficient, handling 20 times the volume per hour than roads for cars in mixed traffic.**

Source: Campbell, R. and M. Wittgens, Better Environmentally Sound Transportation. 2004. *The Business Case for Active Transportation: The Economic Benefits of Walking and Cycling*. Go for Green, p. 13-15.

- **Active transportation improves the efficiency of the transportation system. Congestion can be reduced by providing paved shoulders for cyclists at a cost of \$50,000 to \$100,000 per km or paved pathways at a cost of \$250,000 per km rather than by widening a two lane urban arterial road to four car lanes, which costs approximately \$1.3 million per km.**

Source: Campbell, R. and M. Wittgens, Better Environmentally Sound Transportation. 2004. *The Business Case for Active Transportation: The Economic Benefits of Walking and Cycling*. Go for Green, p. 13-15.

- **Parking is a significant cost of automobile use. When car use is reduced, fewer parking spaces are needed. Bicycle parking costs much less, as up to 20 bicycles can be stored in the space of one automobile. No parking is required for pedestrians.**

Source: Campbell, R. and M. Wittgens, Better Environmentally Sound Transportation. 2004. *The Business Case for Active Transportation: The Economic Benefits of Walking and Cycling*. Go for Green, p. 17-18.

- **The cost of constructing a parking space for a bicycle is approximately 5% of the cost of a parking space for an automobile. This applies both when a parking bay on a street is compared to a space in an outdoor bicycle [parking facility] and when a space in an indoor bicycle storage area is compared to a stall in underground parking or in a parkade.**

Source: Campbell, R. and M. Wittgens, Better Environmentally Sound Transportation. 2004. *The Business Case for Active Transportation: The Economic Benefits of Walking and Cycling*. Go for Green, p. 17-18.

- **The cost of a typical parking space in a parking structure can be up to \$10,000 compared to \$125 to manufacture and install a post-and-ring bike stand accommodating two bicycles, or \$1,000 for a high security bicycle locker.**

Source: Introduction, City of Toronto Bike Plan: Shifting Gears.

## *How does transportation contribute to climate change?*

- **Greenhouse gases emitted by [ground] transportation include carbon dioxide, methane and nitrous oxide.**

Source: Statistics Canada, Human Activity and the Environment: Transportation. 2006.

- **Transportation activities generated more than one-quarter of Canada's total greenhouse gas (GHG) emissions in 2004 and accounted for 28% of their growth from 1999 to 2004. The growing use of heavy-duty trucks to move goods and a shift towards greater use of light trucks (vans, SUVs and pickups) for transporting people are major contributors, accounting for 86% of that growth.**

Source: Statistics Canada, Human Activity and the Environment: Transportation. 2006.

- **Canadians have come to rely more and more on their cars and trucks. In 1951, there were nearly five people for every vehicle registered in Canada. This declined to fewer than two people per vehicle by the mid-1980s and has remained steady ever since.**

Source: Statistics Canada, Human Activity and the Environment: Transportation. 2006.

- **Every litre of gasoline used by your vehicle produces 2.4 kg of carbon dioxide, a major greenhouse gas.**

Source: *Your Guide to the One-Tonne Challenge*. 2003. Government of Canada.

- **Passenger road transportation accounts for half (49.9%) of total personal GHG emissions by Canadians.**

Source: *Your Guide to the One-Tonne Challenge*. 2003. Government of Canada.

- **Traffic congestion is a major contributor of GHG emissions due to idling.**

Source: Statistics Canada, Human Activity and the Environment: Transportation. 2006.

- **Besides greenhouse gases, transportation is a major emitter of pollutants that contribute to poor air quality [smog] in and around urban centres.**

Source: Statistics Canada, Human Activity and the Environment: Transportation. 2006.

- **In urban areas, vehicle exhaust can account for up to two-thirds of smog-producing pollutants. Smog is particularly harmful to the health of children, the elderly and people with cardio-respiratory problems.**

Source: *Your Guide to the One-Tonne Challenge*. 2003. Government of Canada.

### *What are the environmental benefits of Active Transportation?*

- **Cycling and walking are two of the cleanest and most energy-efficient forms of transportation. For each motorized trip that is switched to cycling or walking, a 100% reduction in vehicle emissions results for that trip.**

Source: *Transportation Demand Management: A Policy Challenge*. 1994. Canadian Energy Research Institute.

- **For each motorized trip that is switched to cycling or walking, it avoids releasing [on average] 2.6 grams of hydrocarbon, 20 grams of carbon dioxide and 1.6 grams of nitrogen oxide per passenger-mile.**

Source: *Sectoral Task Force Report on Transportation*. 1992. Ontario Round Table on Environment and Economy.

### *How can Active Transportation save people time and money?*

- **Cycling is often the fastest mode of transportation from door to door for distances up to 10 km in urban cores.**

Source: Introduction, City of Toronto Bike Plan: Shifting Gears. Available at: [www.toronto.ca/cycling/bikeplan/pdf/chapter01.pdf](http://www.toronto.ca/cycling/bikeplan/pdf/chapter01.pdf) Accessed 07-Dec-06. Original source cited: U.S. National Bicycle and Walking Study, 1994.

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- **For distances under 5 km, cycling is usually the fastest mode of travel door to door. For distances under 2 km, walking is even simpler and nearly as fast as cycling.**

Source: Travel Options Manual, BC Transit. Available at:  
[www.bctransit.com/traveloptions/introduction\\_new/](http://www.bctransit.com/traveloptions/introduction_new/) Accessed 07-Dec-06.

- **The Canadian Automobile Association calculates the annual ownership and operating costs associated with driving an average van at \$10,227.30. (Based on a 2005 Dodge Caravan, 3.3 litre, 6 cylinder for 18,000 km per year.)**

Source: Canadian Automobile Association, "Driving Costs: 2005 Edition". Available at:  
<http://www.carpool.ca/pdf/CAA-driving-costs-05.pdf> Accessed 02-Feb-07.

- **A 1997 survey of North American bicycle commuters determined the average cost of bike purchase and annual operating expenses at \$714.00.**

Source: William E. Moritz, Ph.D., Human Powered Transportation, University of Washington. Available at:  
[www.bicyclinglife.com/Library/Moritz1.htm](http://www.bicyclinglife.com/Library/Moritz1.htm) Accessed 02-Feb-07.

## *What motivates people to choose Active Transportation?*

- **The top five reasons for choosing both walking and cycling as a mode of transportation in Canada are: exercise/health, pleasure, convenience, environmental concern, and saving money.**

Source: Marr Consulting and Communications Ltd. February 2005. *The City of Winnipeg Active Transportation Study*, p. 73. Original source cited: 1998 National Survey on Active Transportation. Prepared by Environics International for Go for Green. Available at: [www.goforgreen.ca/at/Eng/PDF/AT\\_Survey.pdf](http://www.goforgreen.ca/at/Eng/PDF/AT_Survey.pdf) Accessed 07-Dec-06.

- **In a 2000 survey of commuting cyclists in Calgary, respondents identified the following motivators in order of priority: exercise, cheaper, faster, fun, less stressful, and environmental benefits. Exercise was noted as the number one reason by 55% of respondents.**

Source: Commuter Cyclist Survey 2000, City of Calgary. Available at:  
[www.calgary.ca/DocGallery/BU/planning/pdf/cyclist\\_survey\\_2000/part\\_1.pdf](http://www.calgary.ca/DocGallery/BU/planning/pdf/cyclist_survey_2000/part_1.pdf) Accessed 07-Dec-06.

## *What are the opportunities for Active Transportation in Winnipeg?*

- **There is general agreement that trips of 8 km or less by bicycle and 3.2 km or less on foot are the thresholds at which individuals will choose active modes of transportation... Two out of three (67%) of Canadians live less than 30 minutes on foot (2.5 km) from at least one habitual destination and 84% live less than 30 minutes by bicycle (8 km).**

Source: Urban Transportation, a Question of Health. 2006 Annual Report on the Health of the Population, Province of Quebec, p. 76.

- **The average commuting distance in Winnipeg to work is less than six kilometres, the lowest of any Canadian city with a population over 500,000.**

Source: Province of Manitoba. Top 10 reasons to live, work and raise a family in Manitoba. Available at: [www.gov.mb.ca/right\\_choice/top.html](http://www.gov.mb.ca/right_choice/top.html) Accessed 07-Dec-06.

- **Results of an on-line survey placed on the City of Winnipeg's website (June 22-July 5, 2004) showed that 46.8% of respondents live less than 8 km from their workplace, while 33.3% of participants in an "Active Transportation in Winnipeg Telephone Survey" conducted by Prairie Research Associates Inc. (October 1-21, 2004) indicated they live within 8 km to their workplace.**

Source: Marr Consulting and Communications Inc. February 2005. *The City of Winnipeg Active Transportation Study*, p. 80.

- **Each Canadian makes an average of 2,000 car trips of less than 3 km each year, trips that could easily be made on foot or by bike.**

Source: AT Facts, Go for Green. See: [www.goforgreen.ca/at/eng/about/facts.aro](http://www.goforgreen.ca/at/eng/about/facts.aro) Accessed: 06-Dec-06.

- **In a 1998 Environics survey on active transportation, 52% of Manitoba respondents indicated they walk as a mode of transportation "sometimes" and 79% would "ideally like to walk more" as a mode of transportation. The same survey found that 30% of Manitoba respondents cycle as a mode of transportation "sometimes" and 65% would "ideally like to cycle more" as a mode of transportation.**

Source: Marr Consulting and Communications Ltd. February 2005. *The City of Winnipeg Active Transportation Study*, p. 73. Original source cited: 1998 National Survey on Active Transportation. Prepared by Environics International for Go for Green. Available at: [www.goforgreen.ca/at/Eng/PDF/AT\\_Survey.pdf](http://www.goforgreen.ca/at/Eng/PDF/AT_Survey.pdf) Accessed 07-Dec-06.

# AT Quick Facts

- Active transportation (AT) is an easy way for Manitobans to achieve the recommended minimum level of daily physical activity.
- Walking is ideal for short trips of 3km or less, while cycling is well suited for trips of 8 km or less. For walking longer distances, the trip can be combined with public transit.
- With an average commuting distance less than 6 km, Winnipeg is the optimal city size for active modes of transportation.
- Active transportation is time efficient and cost effective.
- Walking or cycling for transportation allows you to turn what would otherwise be sedentary time into active time.
- Most Winnipeggers use their car as their primary mode of transportation, including driving their kids to school. Given the direct link between obesity and transportation, a change from driving to walking and cycling for our daily travel routine could improve our health.
- Daily commuting contributes significantly to the overall greenhouse gas emissions generated by vehicle transportation.
- Active modes of transportation, such as walking and cycling, create zero greenhouse gas emissions.
- When more people walk and cycle, it provides natural surveillance with more 'eyes on the street', which can help make our streets safer.
- More pedestrians and cyclists in the city center contribute to a more vibrant, progressive and economically viable downtown.
- Property and commercial retail values are higher in pedestrian-friendly neighbourhoods and communities.
- Cost savings to the community created by a change from driving to walking and cycling for transportation can include: infrastructure (less roadway maintenance and vehicle parking required); healthcare (less demand with a healthier population); and employee productivity (fewer sick days, improved alertness, etc).