

Small Steps Toward Active School Transportation: A Midtown Toronto Case Study

A major paper submitted to the Faculty of Environmental Studies in partial fulfillment of
the requirements for the degree of Master in Environmental Studies (Planning)

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Foreword

This major paper is in partial fulfillment of the degree requirements for a Master of Environmental Studies (Planning), and the final component to the degree. The paper, marks the conclusion of my research, and combines the knowledge I have gathered through primary research into this topic, courses taken over the duration of my Master's degree at York University, numerous research papers written and knowledge acquired through conversations with professors and peers.

This paper has been framed by my Plan of Study, a document that has been constantly edited and reshaped by insight gained throughout the course of my two-year degree. My Plan of Study is focused on neighbourhood walkability, health and urban design. This led to my curiosity in the ways residents navigate their neighbourhood on an everyday basis, the pathways that they take in order to do so, and the effects urban design and neighbourhood navigation have on the health of individuals living in the area. I had the privilege of growing up in the neighbourhood that my study is centered on, and I believe that this particular neighbourhood embedded walking behavior into my everyday life. I wanted to discover the neighbourhood's successes and failures in supporting movement and healthy lifestyles. I provide it as a case study on walkability and active school transit.

These research interests have ultimately led to the culmination of this major research paper. From my interests in walkability and neighbourhood design, I realized that further investigation into active school transportation in Toronto was needed. A great deal of congestion, traffic and neighbourhood chaos results from families trying to chauffeur their children to and from school. This paper, hopes to encourage residents to

participate in some form of active school transportation. It illustrates smart planning when it comes to urban design and neighbourhood layout. Urban design and neighbourhood layout has a great impact on the ability of residents to navigate the neighbourhood on foot. I hope my research will add to the growing discussion of active school transportation and its impact on both neighbourhood and individual health.

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Finally, this paper is dedicated to my mom, Helen, and dad, John. I would not be who I am today without all that you've done for me.

Abstract

The way in which a neighbourhood is planned greatly impacts its overall flow and function. Planning influences how residents interact with space on an everyday basis. Planning for healthy, active and sustainable neighbourhoods is essential for the longevity of the neighbourhood and the ability of residents to safely and efficiently navigate the neighbourhood on foot.

Neighbourhood congestion has a plethora of causes, one of which is the routes children take to and from school each day. Whether their journeys take place by automobile, public transportation, walking or biking, each mode of transportation can impact neighbourhood congestion and individual safety.

I examined children's pathways to John Wanless Public School, situated in Midtown Toronto, as a Case Study for examining the topic of Active School Transportation. I interviewed residents and made observations of the neighbourhood. Results show that resident behavior highly favours active school transportation in the neighbourhood. However, there are areas of concerns for residents that may impact future active travel behavior for school-aged children. These include concerns over future development and spaces in schools for their children, added congestion, construction and safety concerns that all add to the decline in the participation of active school transportation. Overall findings conclude that individual behavior varies widely on individual perceptions of neighbourhood safety resulting in the participation of active school transportation. To increase participation in active school transportation, walkability needs to be addressed on the neighbourhood level to change the behaviors of residents.

1. Introduction

The pathway travelled by children to and from school can have a significant impact on their health and wellbeing and continues to be one of the most important journeys of their everyday life. The built environment can either encourage or discourage active forms of travel for school aged children, and determine the development of their travel behavior in the future. Active school transportation (AST), is defined as “actively walking, cycling for school transportation, a behavior that has been identified as a potential opportunity for the accumulation of moderate to vigorous physical activity among children and youth (Mitra & Buliung, 2011, p. 51). The travel to and from school each day is an opportunity for children to engage in their surroundings and develop positive physical activity habits at an early age. Attention needs to be focused on how they are getting to school and if they are participating in some form of active travel. Healthy and active neighbourhoods have the potential to decrease our carbon footprint, improve the health of individuals, and ingrain positive walking habits into children from a young age (Frank, Greenwalk, Winkelman, Chapman, & Kavage, 2010). The wish to reside in sustainable, livable and vibrant neighbourhoods has drawn many to neighbourhoods that boast pedestrian oriented infrastructure, walkability and urban design that favour those on foot.

While it seems that many tend to favour walkable neighbourhoods in Toronto, we continue to see the growth of regions expanding well outside of the City, with the importance placed on automobile ownership (Cervero & Duncan, 2003). Toronto and the entire Greater Toronto Hamilton Region (GTHA) has been growing at an exponential rate, and the need for urban planners to plan and manage this growth is essential to the

urban fabric. Current sprawling suburban developments are popping up in the periphery of major cities, including around Toronto and eliminate the ability for children to participate in active school transportation. These sprawling suburban developments require everyday access to an automobile to be able to complete the necessary movements of everyday life including grocery trips, access to retail or commercial areas, access to employment areas and access to social services. Suburban developments are creating major issues for cities, including an influx of automobiles that are navigating city streets, creating congestion and compromising pedestrian safety. Whether urban or suburban, the decline of active school transportation is causing a plethora of congestion, health and environmental issues plaguing our atmosphere. The practice of active school transportation is integral, both in the city and in suburban areas, as the growth of peripheral regions that favour the automobile pose issues for residents' future health and behavior when it comes to physical activity and health (Sallis & Glanz, 2006).

Cities today should gear infrastructure to promote walking and regular physical activity, especially for children, such as wide sidewalks, bike lanes and ensure that the infrastructure is maintained. Physical infrastructure such as sidewalks and bike lanes create a perceived safety enhancement for pedestrians (Zhu & Lee, 2008). We see many trips everyday continually completed by use of an automobile, many of which can be easily achieved on foot or by bicycle. This dependency on the automobile has shifted individual behavior and resulted in excessive use of the automobile to complete the daily necessities and journeys of everyday life.

This paper is centered on one of the most essential journeys for young people: the travel to and from elementary school. It is an important area of focus because it sets the

stage for the development of good habits of routine and physical activity early on and allows for the pattern of behavior to develop at a young age. Traffic congestion caused by pick up and drop off times for schools in local neighbourhoods can cause a plethora of negative residual effects on the neighbourhood and the health of the individual. This congestion also poses issues for pedestrian traffic and the safety of all.

The decline in active school transportation can be linked to the growing trend in the last few decades of a decline in physical activity for young children (Buliung, Mitra & Faulkner, 2009). This alarming trend has had many effects on the way neighbourhoods function and continues to put stress on arterial roads and local neighbourhood streets. Throughout this paper, barriers to active school transportation will be analyzed both through literature and from primary data collected in order to discover why there seems to be a very apparent decline in active forms of commuting, despite health benefits for the individual (McDonald, 2007). The aim of this paper is to:

- a) Bring attention to the issue of active school transportation
- b) Discover why behaviors have shifted in recent years, and
- c) Examine the relationship of neighborhood built environment on behavior.

I examined children's pathways to John Wanless Public School, situated in Midtown Toronto, as a Case Study for examining the topic of Active School Transportation. My research focuses on highlighting the importance of walkability. I analyze the trends and behaviors of individuals with regards to daily school transportation

in the hope of discovering why active school transportation has been declining in recent years.

I want to discover why active school transportation is declining in Canada's largest city - Toronto, particularly in the context of high traffic congestion and automobile use. I focused on researching a midtown Toronto neighbourhood that is highly accessible by public transportation and foot, with multiple elementary schools that are woven into the urban fabric. The intention for choosing a highly accessible neighbourhood is to discover trends and behaviors of those who live in highly walkable neighbourhoods, yet still choose to rely daily on the automobile as their primary mode of school transportation. Finally, this paper will investigate individual neighbourhood perceptions and explore the reasoning behind resident's transportation choices in order to grasp a good understanding of why the automobile continues to be favoured over walking.

2. Literature Review

Active school transportation is a topic widely discussed in the literature and continues to motivate urban planners and professionals to create neighbourhoods that cater to the pedestrian. The literature written on '*Active School Transportation*' can be organized in terms of its relationship to two broad themes:

- a) Urban Planning
- b) Public Health

For a well-rounded discussion on the topic, I will also address the growing issue of urban sprawl as active school transportation can be a positive solution to help tackle this topic and aide to significantly decrease the negative environmental effects.

2.1 Active School Transportation and Urban Planning

The field of urban planning can intersect and influence many aspects of our everyday life, but one of the most important facets of everyday life continues to be the way in which individuals navigate their surroundings. This navigation plays a large part in the daily function and ease of completing necessary tasks such as but not limited to, accessing: grocery shopping, employment areas, health and leisure activities and educational resources like elementary, middle and secondary public schools. Mitra & Buliung (2012) suggest that the built environment, the distribution of land, and higher density plays a key role in active transportation in a neighbourhood and can promote and encourage individual active transportation behavior.

There are two conflicting sides to the argument that the built environment and increased density can promote and encourage active behavior among school-aged children. The common belief is that higher density neighbourhoods, combined with pedestrian oriented infrastructure and streets that boast the ability to navigate with ease, will encourage walkability and active school transport. The contrasting argument suggests that increased density causes safety concerns, increased congestion and decreases active transport (Kerr, Rosenberg, Sallis, Saelens, Frank & Conway, 2006). Active school transportation relies on two critical factors that planners must address: (a) the built environment of the particular neighbourhood and (b) urban design elements and infrastructure favouring the pedestrian.

2.1.1 The Influence of the Built Environment

The built environment can both aid and hinder an individual from choosing to participate in some form of active school transportation. The built environment can weave multiple aspects into its fabric to help pedestrians navigate their surroundings safely, and efficiently. Mitra & Buliung (2012) found that active school transportation is already reasonably well practiced in the City of Toronto, with 49% of children participating on a daily basis (p. 52). However, one of the major deterrents constantly mentioned by scholars revolves around the layout of the built environment and our auto-dependent culture (Chapman, 2007). The need to address this issue at the neighbourhood level is paramount. The shift to more walkable neighbourhoods with pedestrian oriented infrastructure has the potential to create beneficial impacts for residents with regards to their health and wellbeing. While the automobile has allowed for increased efficiency of travel over large distances, it has posed many issues for urban planners who have to make

trade-offs when deciding whether to cater to automobiles or pedestrians. The built environment not only impacts the way individuals navigate the neighbourhood but also influences everyday interaction that is vital to creating social capital.

There has been much discussion about the physical layout of urban space, the built environment and an increased sense of community (Talen, 1999; Dempsey, Bramley, Power & Brown, 2011). Putnam (1995) argues that neighbourhood interaction and social engagement has been on the decline since the 1960's because of "the movement of women into the labour force, mobility, demographic transformations, and the technological transformation of leisure" (p. 8). The more we become attached to our automobiles and technology, the more we become detached from our outside surroundings. This detachment can take a toll on the individual both physically and mentally, as it affects their sociability and sense of belonging in a community. The built environment holds the key to developing and bridging relationships among strangers who live in the same geographical area and creating spaces where individuals from different backgrounds can intertwine.

New residential developments that favour the automobile and an autonomous lifestyle have led to fewer neighbours connecting. Auto-dependent developments require an individual to spend a significant amount of time in their automobile. They promote an individualistic lifestyle, one that does not harbour any interaction with the environment or community members. Putnam (2000) believes that an increase of 10 minutes spent commuting decreases a person's will to get involved with their community by 10%. Similarly, a study conducted by Leyden (2003) explained, "persons living in walkable neighbourhood have increased level of social capital compared to those living in car-

oriented suburbs. Respondents living in walkable neighbourhoods are more likely to know their neighbours, participate politically, trust others and be socially engaged” (p.1). Urban neighbourhoods are no longer providing their residents with the resources they need such as access to public transportation or grocery stores within walking distance in order to continue seamlessly with their everyday life. Residents are continuing to turn to their car and seek services outside of the neighbourhood causing the individual to withdraw and avoid interaction within the community.

Dempsey, Bramley, Power & Brown (2011) also stress neighbourhood design as “sense of place attachment relates to the physical environment in which they live, the socio-spatial interpretation of neighbourhood, and acknowledged attachment that residents have to the people living there” (p.7). A sense of attachment is fostered in the services and shops that are present and embedded into neighbourhoods. Witten, Exeter & Field (2003) believe that embedding goods and services within walkable distances such as parks, recreation centres and material goods will help to eliminate social withdrawal and spark social interaction among community members. The built environment can be used to encourage or discourage social interaction depending on neighbourhood layout, which ultimately affects an individual’s social health and wellbeing.

Finally, Berke, Koepsell, Moudon, Hoskins, & Larson’s (2007) study concluded that higher incidence of individuals walking in their neighbourhood was directly connected to the neighbourhood characteristics in which they lived. “Aesthetics, convenience to destinations, availability of paths and sidewalks, and other environmental attributes are believed to influence the walkability of a neighbourhood” (p.7). The built environment plays a crucial role in developing positive walking practices for residents,

and can aide in the ability to sway the resident away from their car and towards a healthy-active, walkable lifestyle.

2.1.2 The Influence of Urban Design

Woven into the built environment are elements of urban design, which play a key role in neighbourhood function and specifically active school transportation. Researchers have attempted to bridge the connection between urban design and increased levels of active school transportation among children. Urban design includes neighbourhood features such as lighting, sidewalks, and access to nature that is interwoven into streetscape. Urban design also aids in the function of the neighbourhood and gives the neighbourhood its own unique character and charm. Urban design can singlehandedly determine why residents choose to reside in certain neighbourhoods depending on what facets of the design appeal to them most and what they look for when choosing a home in a certain neighbourhood. Saelens & Handy (2008) believe that there is a “preponderance of evidence that suggests community scale urban design and land use policies and practices can be effective in increasing walking and bicycling and that mixed land use and sidewalk quality and connectivity are “helpful practices,” as are improved lighting and enhanced aesthetics at the street scale” (p. 9).

The physical infrastructure that is in place in neighbourhoods can successfully encourage individuals to take a more active form of transportation or hinder an individual to step out and navigate the neighbourhood on foot. Neighbourhoods with strong urban design catering to the pedestrian would include design features such as wide pedestrian

sidewalks and adequate lighting in order to make an individual feel safer when walking at night (Saelens & Handy, 2008).

Shepard (2008) believes urban design is the biggest hurdle to getting individuals to participate in active transportation and that changes to urban design infrastructure are incredibly important in order to create a change in the behavior of travellers. A study conducted by Kerr, Rosenberg, Sallis, Saelens, Frank & Conway, (2006), showed that the design of the neighbourhood combined with the interconnectedness of the streetscape proved to encourage walkability especially among children to and from school, and provided a sense of relief for parents who knew that children had a safe route home. Similarly, McMillan (2005) suggests that accessibility of pedestrian oriented infrastructure and the quality of this infrastructure helps determine walking behavior among individuals. While the quality and accessibility of pedestrian oriented infrastructure is important, the prevalence of children walking to and from school each day lies heavily in the perceived safety of the neighbourhood that the parents have (McMillan, 2005).

The decline in children choosing an active form of travel to get to school each day is linked with parental behavior and the perception of the travelling route that is needed to get a child to and from school safely and efficiently.

When discussing active school transportation and urban design, common design features such as sidewalks and street lighting are facets of the neighbourhood that residents would like embedded. Ensuring that travel routes are safe for the pedestrian, and so that there are necessary elements that provide an increased level of safety when

choosing to walk a particular neighbourhood. While ‘sharing the road’ is a common sentiment that most major cities have, it is not always practiced on a day-to-day basis, as drivers believe that the road is their domain. Recent examples include a study conducted by York University, which concluded that before and after school is the most dangerous part of the day for children and that the decline in active school transportation in the GTA is linked to pedestrian safety and automobile collisions (Kalinowsky & Rushowy, 2016).

The key to changing behavior and encouraging active school transportation among children is targeting the parent as well as the child, as they ultimately make the decision to let their children walk or not. Urban design should look to eliminate any perceived safety concerns in the neighbourhood studied (McMillan, 2005). The perception of neighbourhood safety for parents is integral, and vital for parents to allow children to walk to school each day. Urban design can greatly change the perception of neighbourhood safety as Mitra, Buliung & Roorda (2010) believe “sidewalks may change the perception of traffic safety, while busy streets and (busy) intersections could discourage walking” (p. 16). The challenge for urban planners and municipalities is to create new residential developments that include facets of urban design favouring walkability, and try to construct pedestrian oriented infrastructure into existing developments as well.

2.2 Active School Transportation and Health

There have been many studies attempting to correlate active school transportation and individual health and well-being. Walking is one of the most accessible forms of physical activity and can be easily integrated into everyday lifestyle. Numerous studies

have proven that active school transportation has incredible impacts on children's health and leads to increased levels of physical activity and health benefits (Faulkner, Buliung, Flora & Fusco, 2009). Walking daily can influence positive health habits for children, and ingrain the importance of a healthy active lifestyle into the young minds of children at their earliest stages. Urban planners can encourage healthy active lifestyle through neighbourhood design and the physical layout of space. Jackson (2003) speaks to quality neighbourhood design and the links it may have to increased public health and wellbeing, stating that “neighbourhood design includes: public buildings, open space, mixed land use and pedestrian walkways increase of physical exercise and enhance civic life” (p. 191). Developments favouring the automobile eliminate the ability for residents to navigate the neighbourhood on foot as it tends to be much more inefficient and the prevalence of walking in these neighbourhoods is lower. Residents often compromise their health when choosing to reside in automobile driven developments, as they are “not motivated to use gymnasiums and trails and also suffer from the lack of walkable destinations” (Jackson, 2003, p. 195). Not only do pedestrian-oriented neighbourhoods encourage an increased level of public health, but they also increase an individual's attachment to space (Jacobs, 2003). On foot, you are constantly interacting with space and people differently than you do in an automobile and learning to navigate the neighbourhood in your own way, creating your own pathways.

In recent years, child obesity has become a major issue in North America. Recent research suggests that child obesity can be linked to sprawling communities and to the decline in active school transportation, which can offer a vital component of physical exercise for children (Lubans, Boreham, Kelly, Foster, 2011). Walking or biking to

school provides an outlet for children to experience increased levels of physical activity, especially with the majority of their day being so sedentary in the classroom. Studies have shown the benefits of walking or biking to school and how children are much more likely to meet daily goals of physical activity rather to those who get dropped off at school each day (Davison, Werder, Lawson, 2008).

Active school transportation and encouraging walking behavior in children can act as a solution to help combat the decreasing levels of physical activity in children and increasing levels of childhood obesity. A lower rate of obesity and its correlation with walkable environments is a topic well researched by Saelens, Sallis, Black & Chen (2003).

The aim of this paper and research is to bring attention to active school transportation, discover why behaviors have shifted away from AST in recent years and if the built environment has directly influenced this decline in active school transportation. This shift away from participating in daily active school transportation will pose major issues for children in the future with regard to health and wellbeing.

[2.3. The Decline of Active School Transportation](#)

The decline of active school transportation is not only resulting in congestion for major cities, but can also affect the health and wellbeing of individuals from a young age. Saelens, Sallis, Black & Chen (2003) believe that there are correlations between residents living in walkable neighbourhoods boast increased physical activity and lower rates of obesity in comparison to residents living in less walkable neighbourhoods. Similarly, Doyle, Kelly-Schwartz, Schlossberg & Stockard (2006) linked walkable environments to

increased levels of individual health, lower Body Mass Indexes (BMI), and safer neighbourhood environments. Neighbourhood walkability and its connections with individual health are all dependent on the built environment in which an individual lives and if the built form is conducive in creating a highly walkable neighbourhood.

Active school transportation has been declining, with more children getting to school via automobile and ultimately decreasing their overall level of physical activity and health (Buliung, Mitra & Faulker, 2009). This decline can be attributed to the way in which the built form is changing and shifting to a more auto-centric pattern that does not place prevalence on walkability and as Buliung, Mitra & Faulker (2009) conclude, “over the last 20 years has been a period of rapid suburbanization, economic growth and increased auto-ownership” (p. 6). Urban planners today must discover ways to shift back to policies, regulations and bylaws that increase health promotion through the design of our neighbourhoods and increase participation in active school transportation as it is a vital part of childhood development (Buliung, Mitra & Faulker, 2009).

Some of the onus for this decline in AST participation from students should fall onto the school board. It is within their purview to ensure that effective policies and initiatives are carried out in partnership with each neighbourhood school to develop a plan of how to encourage both children and parents to want to participate in AST. In the Toronto context, the Toronto District School Board (TDSB) has made its own pledges to help encourage students to participate in some form of active school transportation. From the TDSB Charter for Active, Safe and Sustainable Transportation the TDSB will:

- Invest resources to support active safe and sustainable transportation to and from school, including efforts made within the school itself;

- Identify and remove barriers to getting to and from school actively by partnering with stakeholders to work as a coordinated team;
- Connect students' active transportation to and from school to their learning in health, environmental, technological, and physical education, and other curriculum areas;
- Collaborate with internal and external partners to facilitate the implementation of school travel plans and road safety education along with other measures to expand on existing programs within schools and;
- Increase students' overall physical activity and mental health through positive interactions with peers, parents, and staff.
 - TDSB Charter for Active, Safe and Sustainable Transportation (2016).

Davison, Werder & Lawson (2008) suggest that significant investment from the federal government into school programming is essential and greatly needed in order for schools to develop strong initiatives for active behavior that will spark a change in the sedentary behavior of children and their parents. Not only is physical activity as part of the school curriculum essential, but the TDSB has pledged to support methods of active school transportation to ensure that children have the choice to walk, bike, scooter or rollerblade to and from school if they wish (TDSB Charter for Active, Safe and Sustainable Transportation, 2016). Ensuring that physical activity is part of the everyday routine of children, starting from their early morning commute will hopefully help address the rising rates of childhood obesity, and have a positive effect on the state of our environment.

3. Research Methods

To meet my research objectives: I conducted a literature review (summarized above) and adopted a case study approach. I conducted 17 in-person interviews with parents of children attending John Wanless Public School, staff at the school and one crossing guard. The majority of the sample of parents interviewed were middle-aged females, and the mother of at least one child who is currently attending JWPS. Most of the sample had two or more children, under the age of 12. Since JWPS is an elementary school, all of the parents in this study accompanied their children to and from school each and every day.

Primary research was collected in the form of one on one interviews, which were conducted during the interviewee's regular walk to and from school with their children. Interviews originated from outside participants' place of residence; generally the interview was conducted during the walk to school with the children, and back with the parent or guardian. My intention was not to sway the interviewees from their normal route to and from school, but to both conduct the interview and observe the daily venture to and from school with everything it entails. From walking with the interviewee, I was able to firsthand experience both what encourages individuals into walking to school and what may hinder walkability.

Initially, I recruited participants through personal networks. Parent interviewees were selected based on the minimum criteria that they had at least one child who is currently attending John Wanless Public School within Ward 16 Eglinton-Lawrence. Snowball sampling was employed by asking participants to refer me to other potential

parents, until I determined that theoretical saturation had occurred. Theoretical saturation occurs when the researcher “reaches a point at which there is no more point in reviewing old data or collecting new information to see how it fits with concepts or categories; new data are no longer illuminating” (Bryman, Teevan, & Bell, 2009, p. 252). Since snowball sampling was used, the majority of contacts I was able to speak with were the mother of a child who referred me to another mother of a child attending JWPS, therefore the results discussed are not a good representation of male opinion on AST.

Interview questions posed to interviewees centered on the topic of active school transportation and their transportation method of choice when travelling from school to home. Questions were posed to the parents and guardians of children who currently attended John Wanless Public School to generate an understanding of the current condition of active school transportation in the neighbourhood and gauge some areas for improvement when it comes to neighbourhood walkability. Questions posed to residents aimed to discover the duration of their walk to school, their preferred mode of transportation, if the built environment impedes them from walking, their perceived safety, main concerns with walking the neighbourhood, if they think walking to school is important for their children’s health, etc. Interviews were also conducted with a crossing guard who has serviced the neighbourhood for over 15 years, and a teacher of the school in study to generate different perspectives on active school transport in the neighbourhood.

Interviewees were provided a map of the area and asked to illustrate their route to and from school with a highlighter. The purpose of this was to learn about the most common street arteries used by interviewees, to see if other interviewees in my study

heavily traveled the route, and to discover if interviewees who travelled the same path to and from school mentioned any similar concerns about the area they were navigating. Interviewees were then asked to take me with them as they took their regular route to and from school, with the starting point being outside their home. Depending on the length of the trip to school, interviewees extended the interview to the walk home after dropping their children at school to finish the interview questions. Interviewees had a range of ways that they got to and from school each day (e.g., walking, driving, biking, and scooter).

After completing my primary data collection through interviews, I employed a grounded theory framework that allows the researcher to “develop a theory out of data and an iterative or recursive approach in which data collection and analysis proceed in tandem, repeatedly referring back to each other” (Bryman, Teevan, & Bell, 2009, p. 252). Each interview completed was recorded through an audio device, transcribed after the interview was completed, and then underwent a coding process to determine recurring themes and key points that arose throughout the data compiled. The coding process allowed for similar themes to be given labels (Bryman, Teevan & Bell, 2009). By applying a grounded theory approach, I was able to inductively use data collected and categorized to theorize around themes for this paper.

An open coding process was employed that included going through line by line, sentence by sentence and assigning codes to the data. Several codes such as active, time consuming, connectivity, access, environment, convenience, safety, social networks, health, sidewalks, physical factors and weather, emerged from the data as recurring responses from interviewees. The codes were then grouped together into broader thematic

categories. Two major themes emerged from the data: individual behavior and environmental factors. These two themes were decided on as each code that was developed through the data could be related back and be naturally connected to these two themes. Leading to the main theory that AST to and from John Wanless Public School is significantly linked and dependent on an individual's perceived view of the physical environment. This individualistic view determines their participation in AST and encompasses the reasoning behind their choice of travel method. The challenge would be to develop strategies that transform and revitalize the topic of AST and approach it at the neighbourhood-level rather than the individual. Walking to and from school is just one journey that children have to take on a daily basis. Developing strategies and placing importance on neighbourhood walkability will in turn reflect positively on active school transport.

3.1 Case Study: John Wanless Public School

The level of participation in AST varies from area to area, especially in the City of Toronto, which has such a diverse landscape. I chose to study a heavily walkable neighbourhood situated in Midtown Toronto as I believed it could provide an understanding of why even when a neighbourhood is so walkable by foot, many still choose to travel the neighbourhood by automobile. John Wanless Public School (JWPS) is used as a case study and happens to be the elementary school I went to as a child. I continue to have many ties to the school and neighbourhood through local participation and active engagement in the community, which provided ease in interviewing, as I knew much about the neighbourhood. I personally walked to and from the elementary school everyday when I was a child, accompanied mostly by my parents, older brother or

grandmother. I strongly believe that walking to and from school each day, especially at such a young age, had many beneficial impacts on both my health and my overall development. I also believe that it set up good walking habits for me to continue into adulthood and ingrained the importance of walking to and from your destination whenever possible. As a child, I developed my own pathways of navigating my neighbourhood, and experience the neighbourhood differently than an individual would when driving in a car.

John Wanless Public School (JWPS) is an elementary school located in the heart of Ward 16 Eglinton Lawrence. It is well sought out by parents living within the neighbourhood. JWPS is situated between Yonge Street and Avenue Road, 8 blocks north

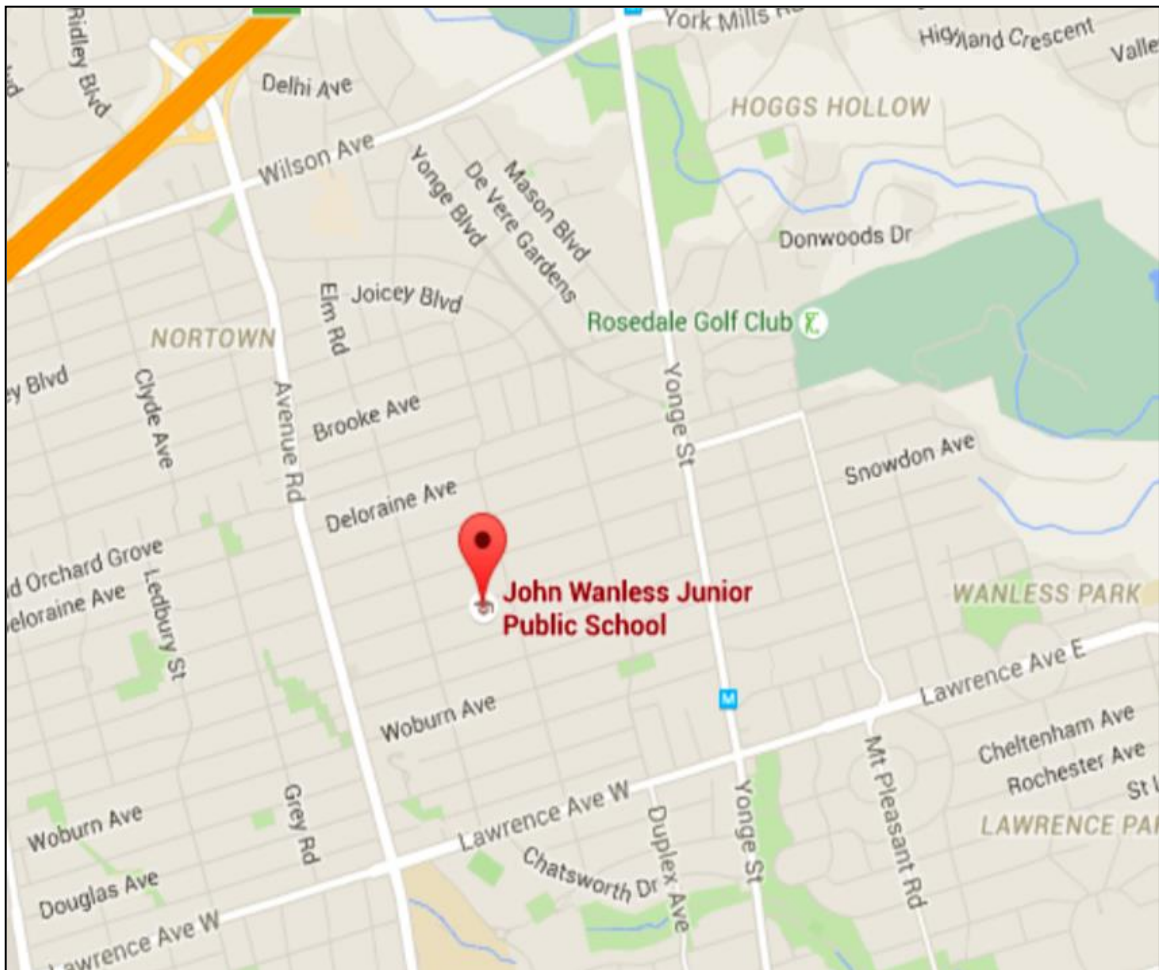


Figure 1 - Location of John Wanless Public School

of Lawrence Avenue West. Figure 1 above illustrates its location within the neighbourhood and the red pin is where the school site is situated. The neighbourhood in which its situated is bounded by Wilson Avenue to the North, Yonge Street to the East, Avenue Road to the West and Lawrence Avenue to the South). The elementary school was built in 1927, with several additions and renovations since its construction (John Wanless, 2014). The school has a total of 784 students that range in grade from Junior Kindergarten to Grade 6 (John Wanless, 2014). JWPS is uniquely situated in the middle of the neighbourhood; the school sees students come from all corners of its immediate neighbourhood and even from outside the neighbourhood as it has a very good academic reputation.

3.2 Ward 16 Eglinton-Lawrence Profile

Ward profiles, compiled by the City of Toronto's Strategic Initiatives, Policy and Analysis division, provide an intricate look at the characteristics of areas dispersed throughout the City of Toronto. With 10,565 total children living within the Ward as of the 2011 Census, John Wanless Public School is one of eight Elementary Schools in Ward 16 Eglinton-Lawrence (Ward 16-Eglinton Lawrence City of Toronto Ward Profile, 2011). Ward 16 is primarily composed of single detached houses with one family living in the private residence, with just over 60% living in houses (Ward 16-Eglinton Lawrence City of Toronto Ward Profile, 2011).

As you can see from Figure 2 pictured below, Ward 16 has many streets that intersect each other and that stretch North, South and East West along the Ward, making it easier for pedestrians to navigate the neighbourhood without getting lost (Ward 16-

Eglinton Lawrence City of Toronto Ward Profile, 2011). The connectivity and urban fabric of the neighbourhood has led to numerous streets being the main arteries of the neighbourhood, giving residents ample choice of routes and ease of navigation.

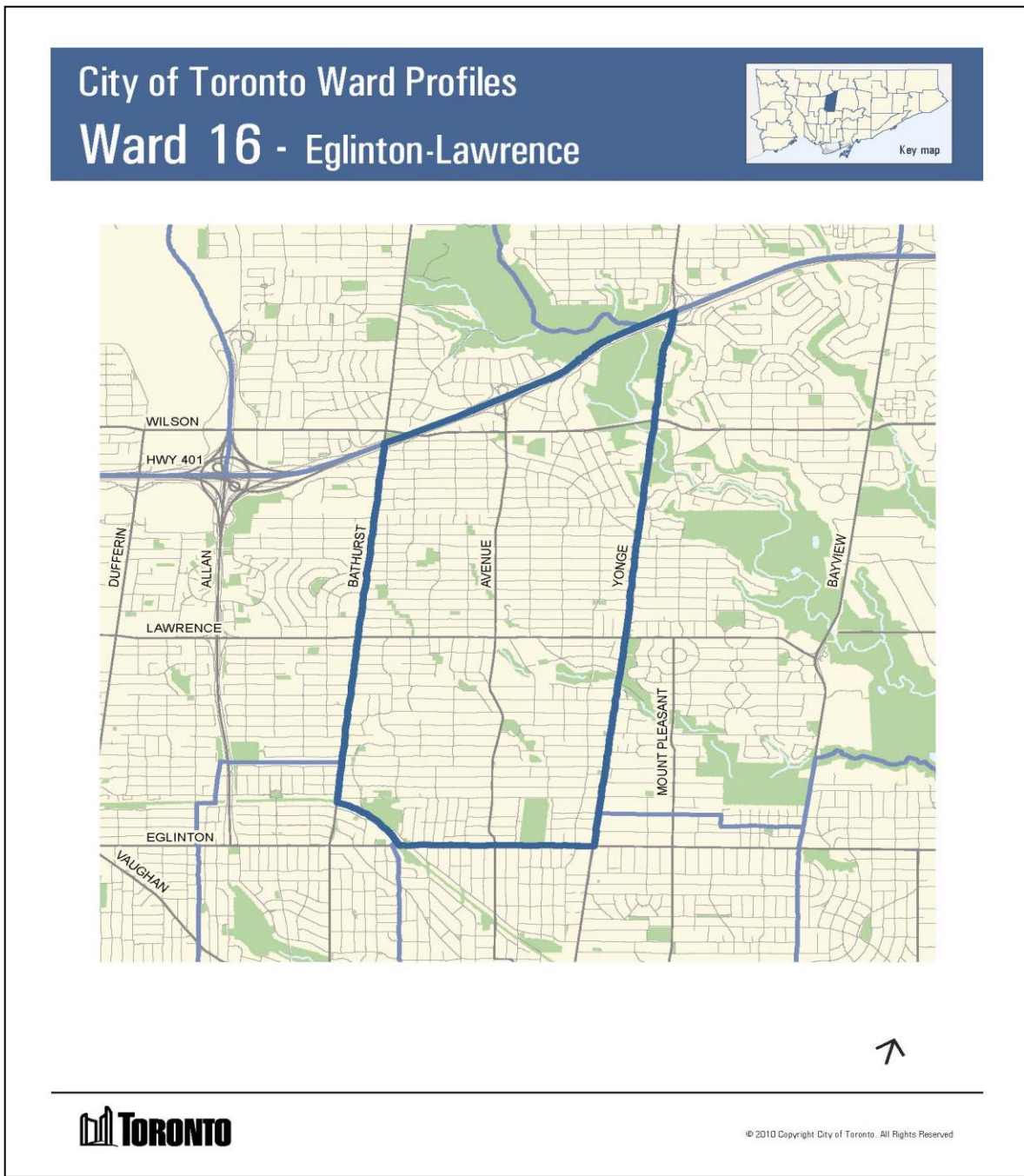


Figure 2 - Ward 16 Eglinton Lawrence

The average household income in Ward 16 is very high in comparison to the rest of the City of Toronto at \$175,528 (Ward 16 - Eglinton Lawrence City of Toronto Ward Profile, 2011). With a high average household income, residents have more choice when it comes to their preference of mode of transportation, whether it be walking, using a personal automobile or taking public transit that is easily accessible in the neighbourhood. Personal automobile ownership is evident in the neighbourhood, as the majority of housing dwellings in the neighbourhood have a front driveway pad large enough for at least one vehicle. In addition, the neighbourhood has numerous cars that are parked on street, likely owned by the residents on the street.

The neighbourhood is highly accessible by public transit: it has two TTC subway

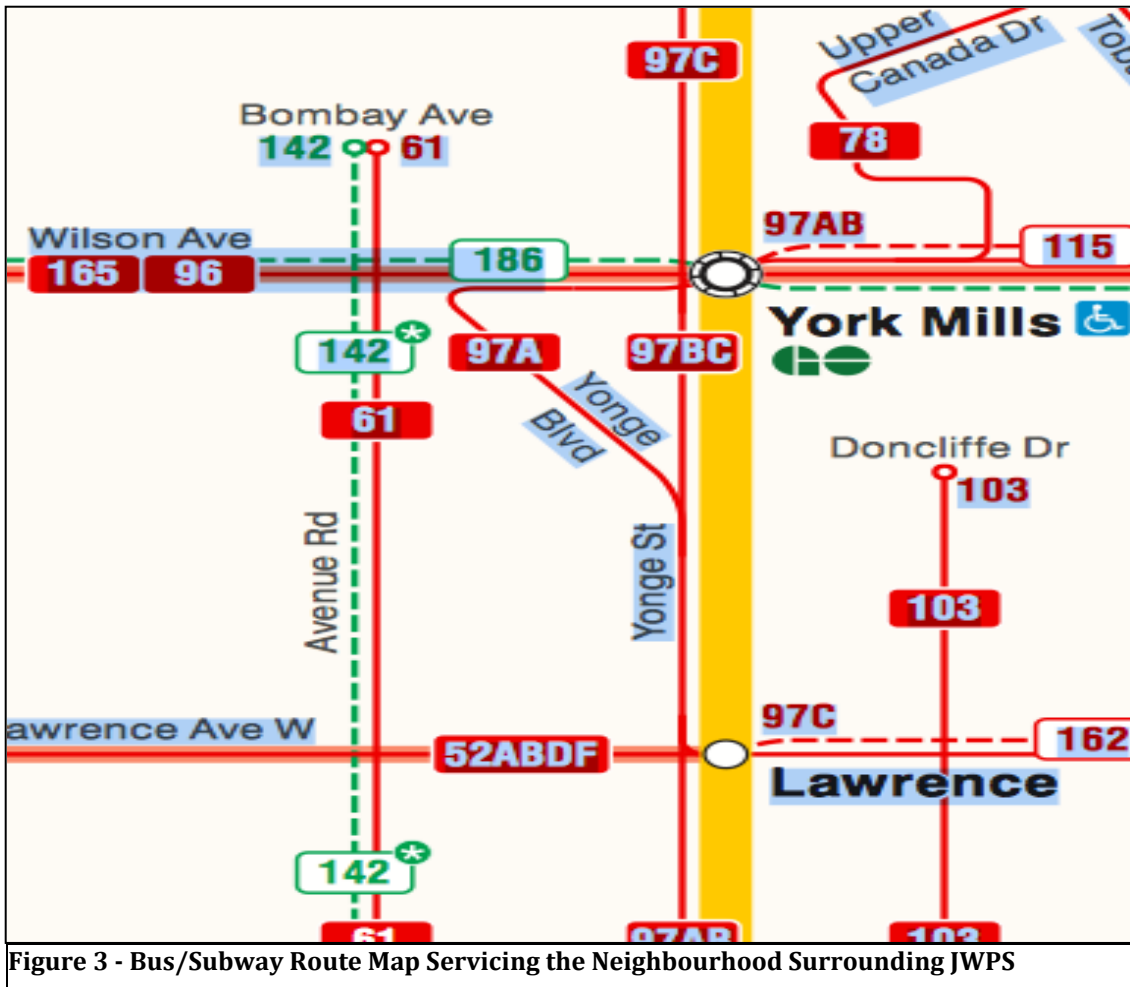


Figure 3 - Bus/Subway Route Map Servicing the Neighbourhood Surrounding JWP5

stops directly embedded in the neighbourhood. Moreover, the neighbourhood is serviced by multiple bus routes including buses that flow along Avenue Road (Bus Route 61), Yonge Street (Bus Route 91), Lawrence Avenue West (Bus Route 52) and Wilson Avenue (Bus Route 96). Illustrated in Figure 3 above, the neighbourhood is accessible through York Mills Subway Station and Lawrence Subway Station on the Yonge-University-Spadina Line, and also has numerous bus lines that intersect and flow into both subway stations.

4. Findings

Some general overall observations can be drawn from the fieldwork conducted in the neighbourhood in and around John Wanless Public School. Firstly, the neighbourhood is very well travelled, whether it is by pedestrians, bicyclists, individuals on scooters or rollerblades, or driving in a private automobile. Evident from walking the neighbourhood during data collection, there are numerous individuals walking throughout the neighbourhood daily. There seems to be quite a large population of children in and around the neighbourhood who either walk to school by themselves or are accompanied by a parent, sibling or guardian. The neighbourhood sees a great deal of activity in the morning, especially around rush hour when individuals are trying to get to work, school, or run daily errands.

When I conducted the interviews, most were during the morning walk or commute to school and it was paramount that myself and the interviewees were aware of the surroundings to ensure our safety. During morning rush hour to work and school, the neighbourhood is bustling and sees a great deal of congestion, which tends to make the walk to school a bit more hazardous as pedestrians and drivers must be aware of multiple encounters. However, most travel to and from John Wanless Public School is within the boundaries of the neighbourhood, and interviewees that travel to and from home to school do not usually need to cross major intersections with multiple lanes of traffic. Most travel is done within the neighbourhood, on local streets that see one lane of traffic each way, which makes the walk to and from school less hazardous and safer for commuters. Speed limits are limited to 40km/hr throughout most of the neighbourhood streets and school zones.

There is a presence of pedestrian oriented infrastructure throughout the neighbourhood, which made the ease of walking and conducting interviews while on route much safer. Sidewalks are present, with the exception of a series of blocks in the most northern part of the Ward towards Wilson Avenue that lack sidewalks on either sides of the road. The neighbourhoods streets are largely tree lined, well shaded and provide access to nature and its surroundings providing a pleasant walk through the neighbourhood.

5. Results

The majority of families that participated in my study resides within walking distance of the school and enjoys participating in an active form of transportation to get their children to and from school. One resident, who has lived in the neighbourhood for over 25 years stated “this neighbourhood is one of the best in Toronto, you don’t see many parents dropping their children off in a vehicle each morning, they take the time out of their day to walk their children to school and get them there themselves” (Weaver, Personal Interview, May 2016). Evident from most of the interviews conducted, the majority of respondents do participate in active school transportation, however, there were many concerns drawn about the future of active school transportation because of changes to the neighbourhood which could ultimately result in a decline. Pictured in

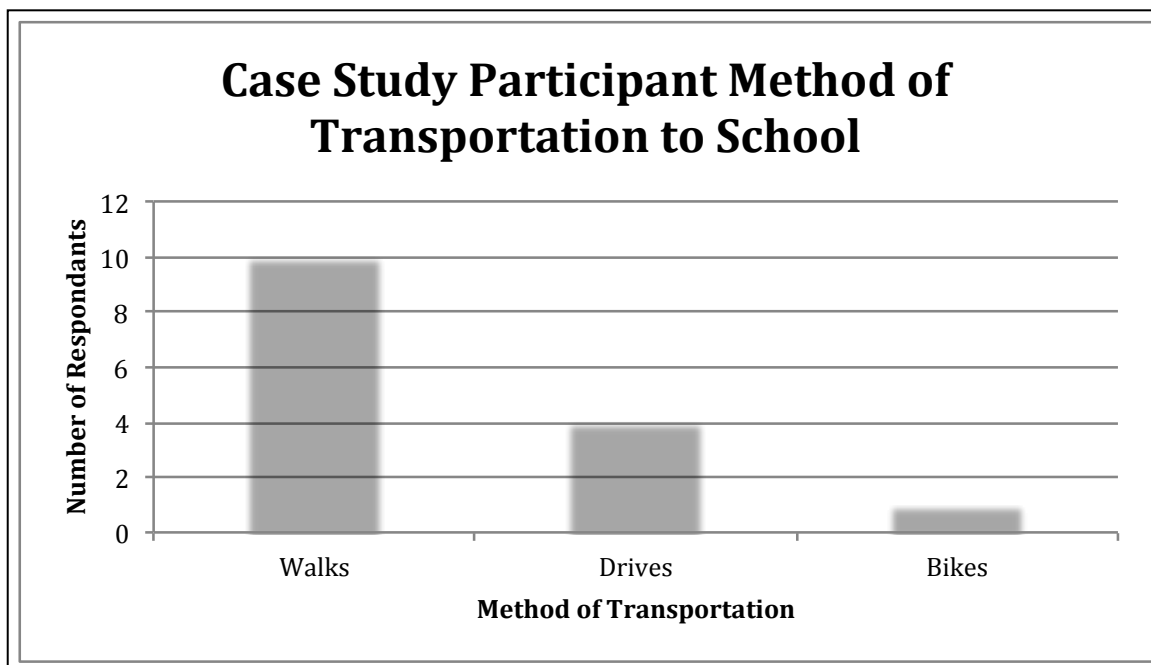


Figure 4 - Method of Transportation for Participants

figure 4, showcases a table that measures the responses from interviewees on their method of transportation to and from JWPS. It is clear that most favour walking to and from the case study school, with ten out of the fifteen interviewed indicated walking as their primary method of transportation. Four interviewees drove to and from school each day, with just one indicating that their primary mode of transportation was via bicycle.

Interestingly, when I asked respondents if they considered their place of residence to be within walking distance from JWPS, a total of twelve indicated that they believed they lived within walking distance, where as three indicated they felt they did not live within walking distance.

For the ten respondents from the study who indicated that they walk to and from school as their primary mode of transportation, the majority of respondents would combine their walk to and from school with their children with other daily activities.

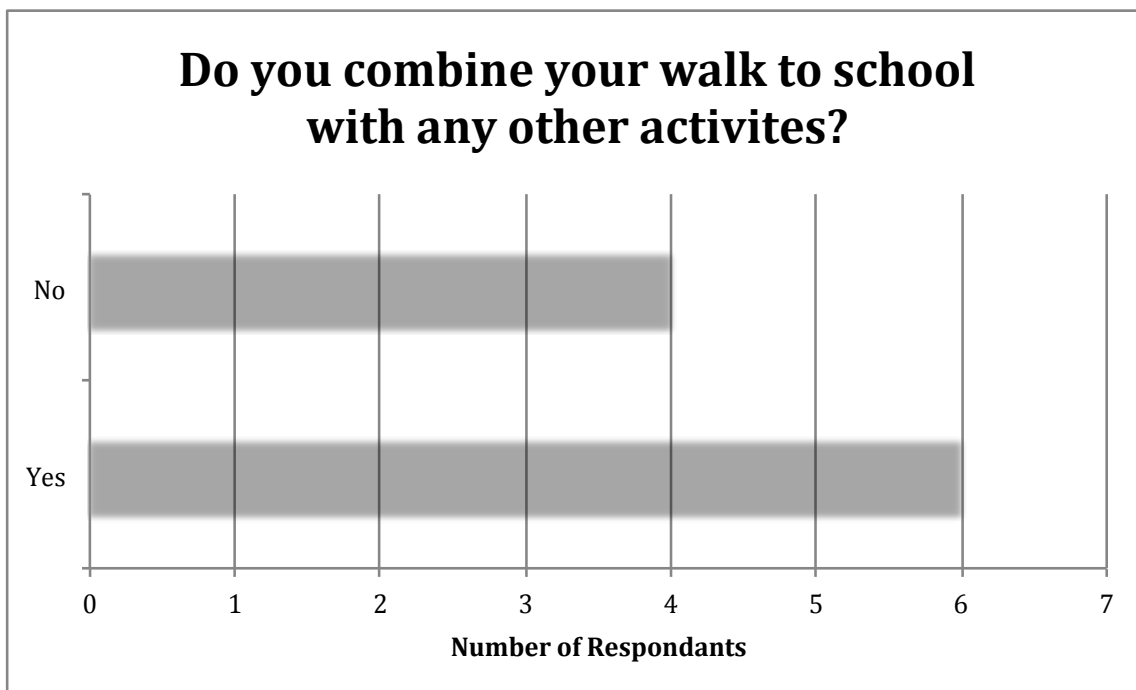


Figure 5 - Combined Activity Travel

Illustrated in the figure 5 above, indicates the number of respondents who combine their travels with other activities. Other activities, as noted by the interviewees ranged from walking the dog, grocery shopping, running errands, coffee runs, and personal exercise.

The interviewees were asked if they believe the built environment of the neighbourhood hinders or aids in their ability to participate in active forms of transportation. The intention was to provoke conversation about the physical elements and urban design of the neighbourhood. Eleven total interviewees believed that the built environment aids in active school transportation, with interviewees noting proper infrastructure such as sidewalks, lighting, and tree canopy for shade as elements that made the walk more preferable. Whereas four noted that they felt that the built environment hindered their ability in participating in active school transportation. Interviewees mentioned high levels of construction, environmental factors, parked cars and driveways at the front of houses to be main deterrents of AST.

Interviewees were asked what they consider the greatest barrier to participating in active school transportation, regardless on whether they indicated that they participated or not. Pictured in figure 6 below, is a word graphic I constructed showcasing the prominent words that arose from respondents when asked their greatest barrier to AST. Words such as safety, time, trust and congestion were recurring words that kept on arising from the parents interviewed. While most respondents in this study participated in AST, it does not necessarily mean they have no concerns about the safety of their children and elements of the neighbourhood that may one-day hinder their ability for their children to participate in active school transportation.



Figure 6 - Word Graphic of Major Barriers of AST

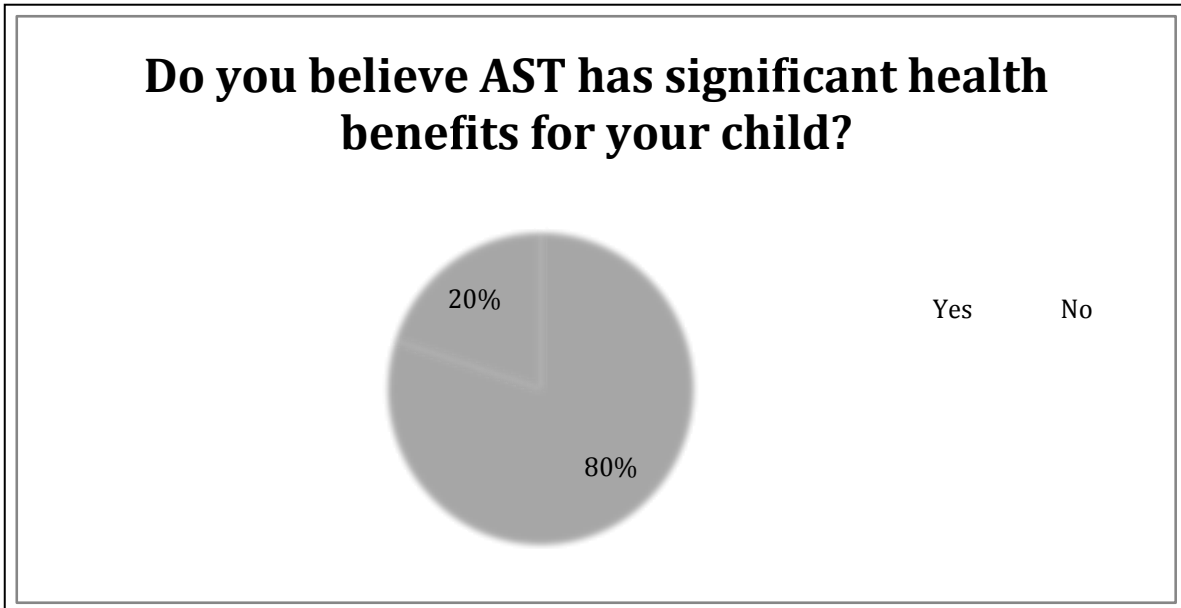


Figure 7 - Percentage of Respondents Who Believe Health Is Important

Finally, relevant to this research paper, interviewees were asked a series of questions on the topic of active school transportation and the health of their children. Two prominent research questions revolved around whether or not respondents felt AST was important for the health of their children and if they believed AST could have any impacts on their learning behavior inside the classroom. Pictured in figure 7 above, the majority (80%) believes that AST is vital to their child's health, where as 20% did not believe that AST offered an important health impact to their child's everyday life. Interestingly, respondents were also asked if they believe that AST could have an impact on their child's in class learning and participation. The results were much more mixed, with only 60% of respondents believing that AST could impact their child's ability to learn in class.

While respondents acknowledged mostly that AST could be a vital component of the health of their children, they did not overwhelmingly believe that it has any ramifications on their overall learning behavior in class. Respondents were additionally asked about any influence that JWPS had on encouraging/discouraging their students from participating in active forms of transportation to and from school. Results were mostly mixed as well from respondents, with 60% of those interviewed believing that the school is doing enough to encourage AST, and 40% believing that the school could do more, with regards to encouraging their students to participate in AST geared programs. Most interviewees were not aware of any specific programs the school was doing in order to encourage AST of their students.

Overall, it would seem that from the case study neighbourhood, AST is well practiced in the neighbourhood but is faced with challenges that it must overcome in

order to sustain this participation. These challenges are presented in the following section that goes into depth about some of the concerns raised by respondents with regards to AST and the case study neighbourhood. Major issues mentioned were sorted into three key themes for urban planners to consider when planning for active and safe neighbourhoods. These three include: neighbourhood planning, urban design and healthy communities.

5.1 Neighbourhood Planning

Residents of the neighbourhood had many suggestions for improving the overall form and function of the neighbourhood and the ability for them to walk to and from school with their children each day.

The neighbourhood surrounding John Wanless Public School is currently experiencing a great deal of development and change. Many residents in the neighbourhood continue to worry about the future of the neighbourhood and increased congestion caused by development and constant construction. Concerns over the future development of the neighbourhood raised questions about the overall path and vision for the neighbourhood and how they feel disconnected and in the dark about the plan for the neighbourhood in the coming years. Neighbourhood planning encourages the participation of the local community into planning decisions that affect the everyday lives of individuals living in the neighbourhood (Gallent & Robinson, 2012). Local residents expressed concerns regarding the overall plan for their beloved neighbourhood and how it may affect their future decisions to walk their children to school, or allow for their children to walk themselves to school when they attend future institutions such as high school and are old enough to walk by themselves. Many residents, expressed concerns over recent mid-rise developments in the neighbourhood adding to overall congestion, with one resident explaining that “recent construction of condos have impacted our daily walk as we now have to navigate not only with cars but with large bulldozers weaving in and out of the streets, on some days when they’re working on our street I choose to drive the kids” (Fullerton, Personal Interview, May 2016). Residents constantly brought up

feeling like their neighbourhood is in a constant state of flux. They report not being notified about what is going on and being surprised by new developments that keep popping up.

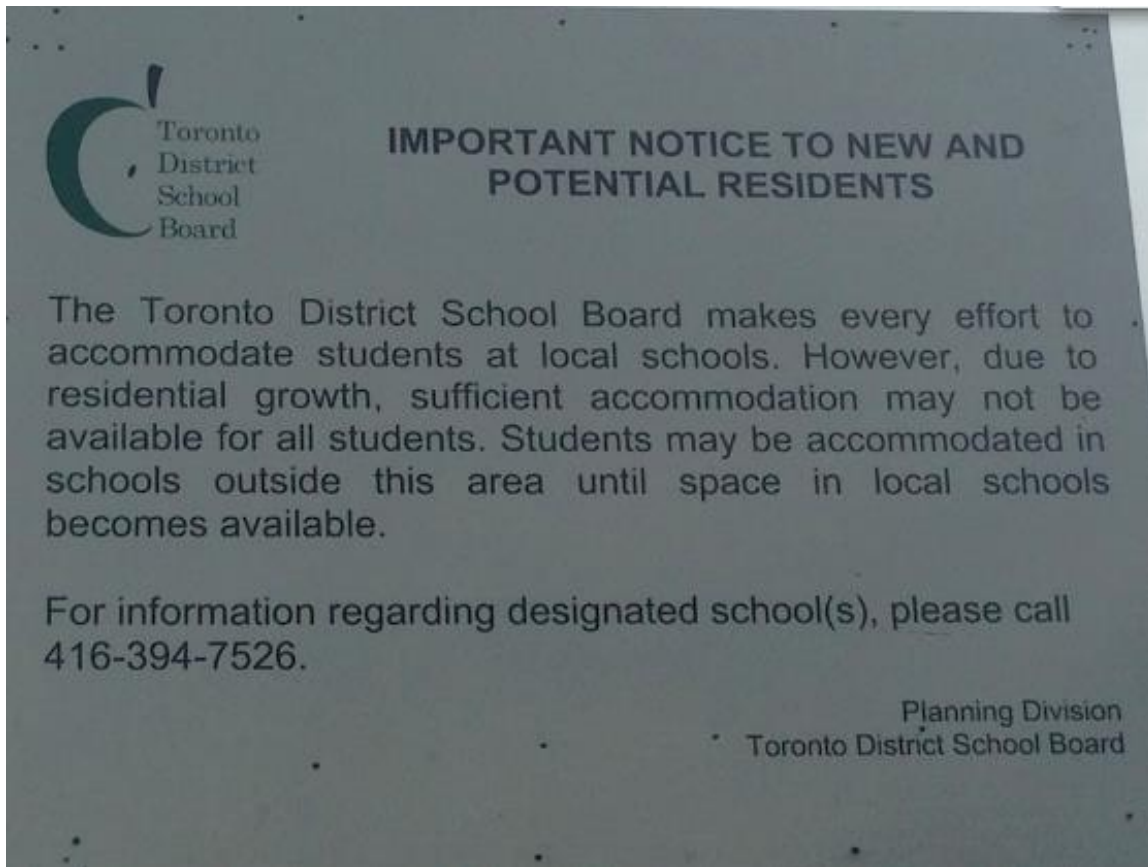


Figure 8 - Notice for Potential Residents Regarding School Accommodation

Added development in the area seemed to be a topic of discussion for many residents interviewed, as concerns over access to neighbourhood schools increased. Figure 8 showcases a bulletin board posted onto the overhead of a condominium development at the corner of Yonge and Lawrence. The bulletin states that while the TDSB makes an effort to accommodate students into local schools, schools may not necessarily have the space to accommodate all students.

One local resident, whose child is in Grade 6 at JWPS, expressed concerns over spaces available in elementary, middle and high schools in the neighbourhood. She added that they chose to reside in this particular neighbourhood because of the access to highly academic local schools:

“We moved into this neighbourhood 3 years ago because of its reputation for academic public schools that are located right in the neighbourhood. Seeing signs like this one [figure 8] worry me because we want our children to attend the local schools, not schlep them outside the neighbourhood because there isn’t enough space in the one right next door to our house”. (Norrington, Personal Interview, May 2016).

She continued later in the interview and remarked:

“To me, it doesn’t make sense to see all these new developments if there isn’t enough space in neighbourhood schools, people buy into a neighbourhood because they want to be able to access the shops, restaurants, churches and want their kids to be able to conveniently attend schools. If we wanted to drive our kids to schools we wouldn’t have paid the price to live in the city, we would be living in the suburbs” (Norrington, Personal Interview, May 2016).

At the other end of the spectrum, there have been numerous stories in the media about the future of some Toronto District School Board schools in neighbourhoods where enrollment is low. Many interviewees expressed positive associations with their neighbourhood and the ability to walk to and from their local elementary schools, but also expressed imminent fears for the future of their neighbourhood schools. Rushowy (2016) reporter for the Toronto Star discusses over-enrollment in schools situated in the

Ward of Eglinton-Lawrence, and how this particular Ward is one of the few in Toronto that is experiencing this increase in enrollment. This over-enrolment has been caused by the closure of neighbouring schools such as Bannockburn Elementary Public School that was closed because of under-utilization, which is situated in the Ward to the West. Furthermore, because of the revitalization of Lawrence Heights, another neighbouring Ward, it has prompted parents to seek schools for their children in Eglinton-Lawrence as schools in their neighbourhood have been demolished or are closed. Over-enrollment puts local residents in danger of not being able to enroll their children into their local schools, and it jeopardizes their ability to walk to school each day if they have to attend a school that is located outside their current neighbourhood where they reside.

The state of neighbourhoods that are on the periphery of Eglinton-Lawrence, combined with the added condominium development puts residents who rely on John Wanless Public School for educating their children in a state of concern for the future plan for the neighbourhood and the state of active school transportation as a whole. Future planners must grapple with this growing problem and fluctuation between under utilized schools and over-enrolled schools to ensure that there is balance in neighbourhoods, and that children residing in neighbourhoods have access to good education and the ability to participate in active forms of transportation to get to and from school each day. It would seem based on reactions from interviewees that the current state of AST to and from John Wanless Public School could be jeopardized in the future if planners fail to address these concerns in a timely matter.

5.2 Neighbourhood Design

The main strength of the neighbourhood surrounding John Wanless Public School and the ability for residents to walk their children to and from the school lays in the layout and built environment of the neighbourhood. A neighbourhood's form and function is directly impacted by the urban design and layout that the neighbourhood streets have and the ability for residents to have choice in which street artery they choose.

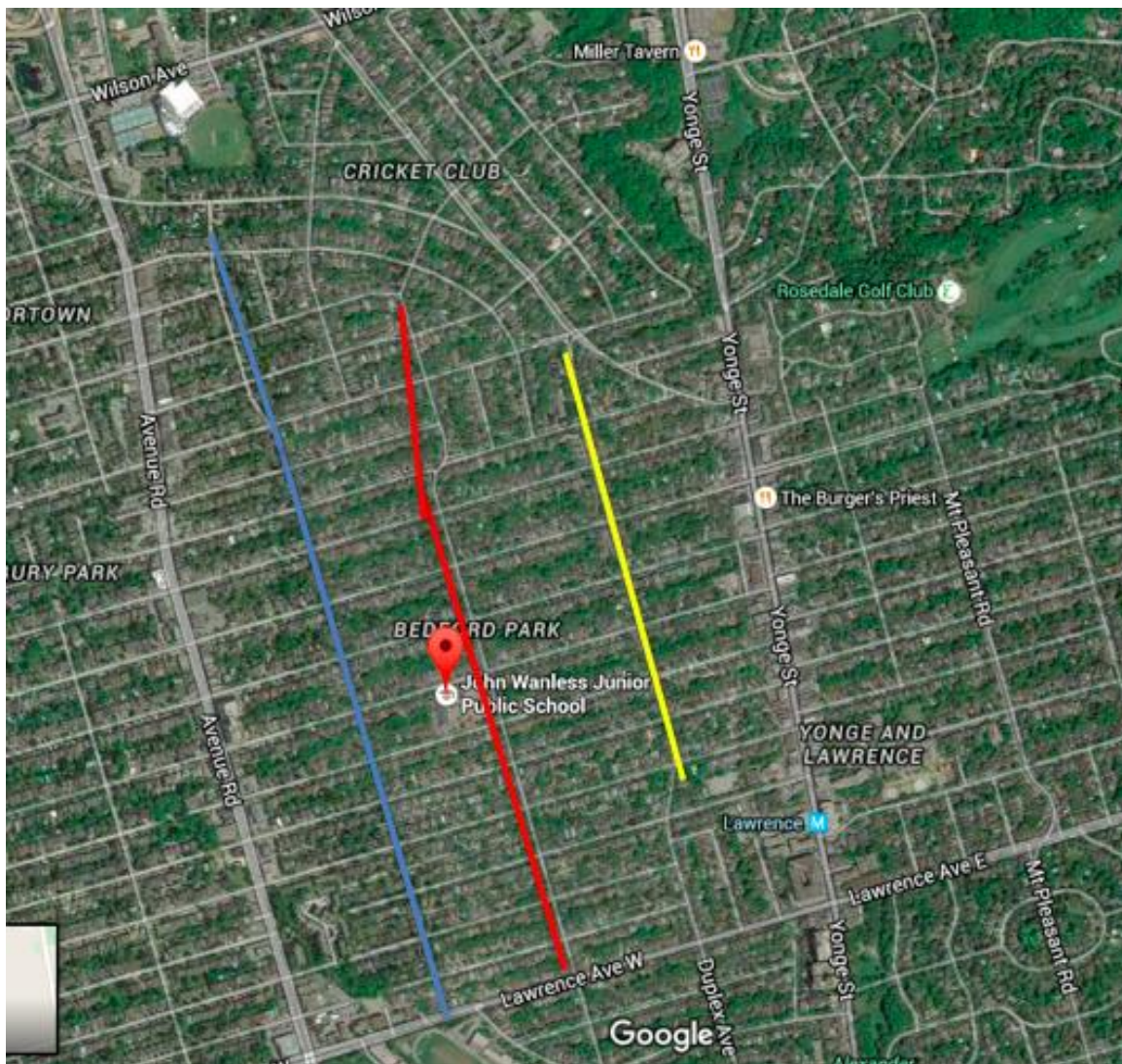


Figure 9 - Heavily Used Arteries Surrounding JWPS

Figure 9, showcases the street pattern of the surrounding neighbourhood of John Wanless Public School; this was generated from the route maps interviewees completed prior to their interviews. The street pattern is highly connected and streets run parallel to each other both North-South and East-West. Evident from the research compiled, interviewees normally use three main arteries to get to and from John Wanless Public School each day with their children. The blue line represents Elm Road, the red line represents Greer Road and the Yellow Line represents Jedburgh Road. All three roads run parallel and North-South across the neighbourhood. Interviewees were first given a map just like the one presented in Figure 1 and asked to draw out their route to and from JWPS. Each interviewee had a variation of one of the arteries shown above and usually included their house as the starting point. They traveled North or South on one of the main arteries shown above and then East or West towards JWPS.

The ease and ability for residents to walk to and from John Wanless Public Schools can be directly attributed to the physical layout and street pattern surrounding

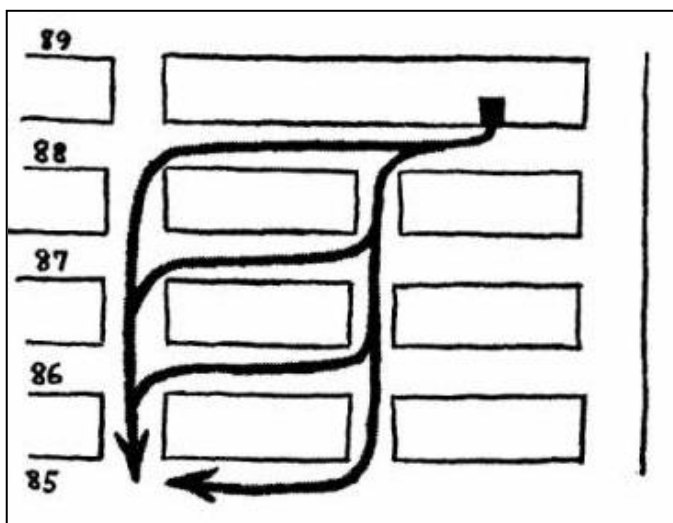


Figure 10 - "The Need for Short Blocks" picture from the Death and Life of Great American Cities, Jane Jacobs 1961

JWPS. Jane Jacobs, renowned author

and urbanist discussed the importance of the need for small blocks believing that "streets and opportunities to turn corners must be frequent" (Jacobs, 1961, p. 178).

Figure 10 is a drawing from her 1961 book titled "the Death and Life of Great American Cities." The

drawing can be compared to the neighbourhood surrounding JWPS, which boasts short neighbourhood blocks that add connectivity and redundancy to the neighbourhood. Short neighbourhood blocks also add to the overall walkability of the neighbourhood, allowing for residents to be able to use multiple routes to get to and from their destination.

Having routes that are well travelled and connected to other street networks, increases the overall safety in the neighbourhood as well. One resident who walks her child to John Wanless Public School each day, no matter the weather, discussed the tight knit neighbourhood and stated “the neighbourhood is easy to walk because you’re always encountering other families on the same route as you, it makes me feel safer when I know that there are other people walking in the same direction for the same purpose.... I like that we can also pick up some of Jenny’s friends on the route to school and it’s not too far out of our way” (Lee, Personal Interview, April 2016). Having connected streets not only allows for ease of navigation but the pedestrians are also able to encounter others along the route, bridging friendships and forming bonds that wouldn’t have been possible if they had not walked every day to school.

While the short neighbourhood blocks dispersed throughout the neighbourhood allow for ease of travel and choice for residents, there was a main deterrent from walking children to and from school that was continually mentioned by multiple interviewees. While the need for pedestrian oriented infrastructure is paramount to active school transportation, the infrastructure present in the surrounding neighbourhood of the school is constantly under construction. This results in residents feeling unsafe when walking the neighbourhood. One resident, who walks his children to John Wanless Public School cited that recent construction in the neighbourhood, specifically on sidewalks, has left

him with concerns over walking his children to school, and for other children in the neighbourhoods.

He notes, “It seems like everyday they [City construction workers] are working



Figure 11 - Sidewalk Construction on Jedburgh Road

on a new way to tear up the ground and fix something. The amount of times we’ve seen our road and sidewalks torn up for sewers or water piping is incredible” (Jind, Personal Interview, May 2016). The interviewee pointed specifically to a stretch of sidewalks near his home, and along his route to school with his kids that has been repeatedly been torn up this year. He mentioned numerous times that it has affected his route to

school, and deterred him from leaving his house on foot with his children because of concerns for their safety. Pictured in Figure 11, is a photo of the torn up sidewalks that are being replaced, steps from the interviewee’s home on Jedburgh Road. Jedburgh Road in particular is the most travelled by automobile of the three artery roads that serve as the walking route to John Wanless Public School because it does not have as many stop signs as the other arteries.

This particular interviewee and his children would constantly have to navigate their route onto the busy road during peak times in order to get to and from their

elementary school. This compromised their safety and ability to walk to school. While completing our interview, we had to halt conversation to ensure the safety of all members while walking on the road. This stretch of sidewalks ranged three neighbourhood blocks that were under construction. It was evident from the interview that navigating the neighbourhood during peak rush hour through the construction would be hazardous for residents and their children, ultimately deterring them from walking.

While most of the neighbourhood has pedestrian infrastructure, there is a portion of the northern area surrounding John Wanless Public School that lacks sidewalks on neighbourhood roads. Pictured in Figure 12 is an example of this, where the sidewalks on the southern portion of the neighbourhoods are present, but on the opposite north side of



Figure 12 - Corner of Greer Road and Brooke Avenue where the sidewalk ends
the neighbourhood, the sidewalks for some reason seem to disappear. Interestingly, from

research collected, it seems that residents from this particular part of the neighbourhood

who had children attending John Wanless Public School were more likely to drive to the school than those living on the side of the neighbourhoods with sidewalks. This portion of the neighbourhood is also where the layout of the street pattern deviates slightly from a gridiron street pattern too much more of a curved pattern. There has been a great deal of evidence that supports the notion that increased prevalence of sidewalks and bike lanes leads to an increased number of non-related automobile trips (Saelens, Sallis & Frank, 2003). A resident interview on the north side of the neighbourhood cites distance from the elementary school as her primary reason to drive her children to school each day, coupled with her and her husbands busy schedule and rigorous work deadlines. She states, “we drive our children to and from John Wanless each day because we don’t have the time to walk [the kids], with running errands, grocery shopping, getting to work on time for the both of us, we would love to but, we don’t see how its possible” (Miras, Personal Interview, May 2016). Another neighbourhood resident has two children in Grades 3 and 4 attending John Wanless, the family lives in the Northern portion of the neighbourhood and couldn’t imagine letting her kids walk to school one day. She notes, “I don’t think I’ll ever let them [her kids] walk to school by themselves, the amount of car travel and speeders going through this neighbourhood is unbelievable. They [automobile drivers] use the neighbourhood has a thoroughfare to get to the highway. Letting my kids walk with no sidewalks on the edge of the road sharing a space with these roaring cars is too much for me to gamble. For now either my husband and I can drive them, when they get to high school we will have to reevaluate the route and how they’ll get there.” (Personal Interview #11, May 2016).

It is evident from this research collected that physical infrastructure whether real or perceived is incredibly important when it comes to walkability and accessing important facets of a neighbourhood, especially elementary schools. There was a stark contrast in walking behaviors and opinions of interviewees depending on which end of

the neighbourhood they fell on, the North with no sidewalks or South with sidewalks. Interviewees living in the Northern portion of the neighbourhood were less likely to walk to school as often, as opposed to the Southern portion that had a strong prevalence of sidewalks. To coincide with this point, an interview conducted with a local crossing guard who had been servicing this particular neighbourhood for years attested to this theory of walkability in the neighbourhood. He notes, “In all my years, the most of the students are coming from this side [the south side] but I think it would help if there were more of us [crossing guards] throughout the neighbourhood not just at the corners of the school, for the kids” (Mr. Nyugen, Personal Interview, June 2016). It is important for planners to realize that neighbourhoods must be designed with pedestrian infrastructure in place, and that it would be inexcusable in our current times for sidewalks not to be built into the urban fabric.

5.3 Healthy Communities

The majority of residents interviewed who have children attending John Wanless



Figure 13 - Father and Son on Bicycles Riding to John Wanless Public School



Figure 14 - Brother and Sister on Route to John Wanless Public School

Public School are taking part in some form of active school transportation. Most believe it has positive impacts on their health. Pictures in Figure 13 and Figure 14 showcase the types of transportation used by both children and parents/guardians in order to get moving each day and get to school on time.

Throughout the entire neighbourhood during drop off and pick up times, you constantly run into children on scooters, bicycles, rollerblades, etc, and parents/guardians carrying an extra bike or scooter for their child when picking them up from the school at the end of the day so they can ride the route home. Active school transportation is highly present in this particular neighbourhood and seems to be the method of choice when speaking to residents. While you would commonly see children on bikes or scooters travelling to school, there is an absence of bike lanes present throughout the neighbourhood making it a bit harder for the children and their parents to navigate the neighbourhood while on bikes or scooters. As pictured in Figure 13, the father is riding his bicycle on the road, while the son is taking the safer route and riding on the sidewalk. In contrast, pictured in Figure 14, both children are riding their scooter on the road because of the lack of sidewalks in this particular portion of the neighbourhood. These two examples continue to be a challenge residents of this neighbourhood must overcome and face in order to participate in active school transportation.

John Wanless Public School as a whole is doing its part to help encourage students' participation in daily active school transportation and in initiatives to help improve the state of the environment and health of the children. One teacher interviewed discussed the current programs that JWPS has in regards to active school transportation and the health of its students, she notes, "the school runs ABC [Anything But Cars]

Wednesdays and is always in line with Toronto District School Board run initiatives and encourages participation of all students in their programs. To help the environment, the school has various waste reduction policies and educates the students about reducing waste and growing organically” (Cunningham, Personal Interview, April 2016). The TDSB as a whole has increased its awareness of active school transportation and made effort to improve its policies. Guliani, Mitra, Buliung, Larsen & Faulkner (2015) recently note, “The Toronto District School Board and several other school boards across Canada have recently adopted charters for safe and sustainable transportation among students. At this point, the documents outline commitment to invest resources related to safe routes to schools programs and road safety education within schools” (p. 510). Ultimately, the TDSB should be held accountable for the participation in active school transportation and ensure that they continue to develop and encourage initiatives that are focused around active school transport and individual health. The teacher interviewed added that she believed more could be done by both the TDSB and the school itself to help generate more participation in active school transportation such as integrating the importance into the curriculum and even educating parents through seminars the importance of active school transportation (Cunningham, Personal Interview April 2016).

Interviewees constantly noted health as an important reason why they choose to walk to and from school each day with their children, safety was often of top concern for parents and the reason it may hinder them from participating in active school transportation. Health and safety are directly linked with each other in regards to active school transportation. This vision of creating healthy and active communities starts first with the health and safety of the residents and their children, and should ensure that the

children have a safe path to get to and from their schoolyard. In a similar study conducted by Guliani, Mitra, Buliung, Larsen & Faulkner (2015), the results indicated that “infrastructure-centred interventions, such as constructing sidewalks and implementing traffic calming measures may increase the likelihood of walking regardless of parental perceptions of traffic safety” (p. 511). The key to creating healthy and active communities is to ensure that there is support from the physical environment and support from the school itself. Not only does the neighbourhood need to be built for walking, but also the “encouragement needs to come from the institution and the institution needs to provide education about the topic [of active school transportation and individual health]” (Cunningham, Personal Interview, April 2016). One interviewee noted the significant impact active school transportation has had on her children concluding that;

“We recently moved into the neighbourhood from Mississauga for my husbands job. We knew it was going to be a transition from driving our children to the public school in Mississauga to likely having to walk to and from school each day. The walk has had a great impact on Simon [her child, Gr.4]. I can see him coming out of his shell on the walk to school, interacting with the other children, dogs, flowers while walking in the neighbourhood, learning about different things on our walk, telling me about his day at school on the walk home. It’s a great bonding time for me and him and I like that he’s able to blow some steam off, get some exercise everyday, its important to us.” (Ashby, Personal Interview, May 2016).

Implementing an active route to and from school into a family’s daily travel can have many beneficial impacts on the children and even parents overall health and mental wellbeing. There are numerous benefits to incorporating active school transportation into everyday behavior, but one of the strongest benefits continues to be its effects on the health of both the individual and the neighbourhood as a whole. Another area resident discusses the bonds she has formed with other families that has stemmed from walking children to school each day. She notes “we’ve been able to adapt our routes to pick up

children that are in the same grade as Alexandra and walk them to school too, Its been a good experience for me cause I'm able to form bonds with other parents, offer a helping hand, and receive one in return" (Kolber, Personal Interview, April 2016). Active school transportation improves neighbourhood health as it creates bonds and ties to the neighbourhood where people live each and everyday. It allows for bonds to form not only between neighbours but a bond and association to the neighbourhood, allowing for more interest from residents on their surroundings and what is going on in the neighbourhood.

6. Limitations

Limitations to this particular study on active school transportation are important to present. The first major limitation to this case study analyses was that the study was conducted during the spring months, from April-June, where weather tends to be more favourable for respondents to participate in active school transportation. If the study was undertaken during the winter months, findings could be drastically impacted, as active school transportation is more of a challenge for respondents because of Canadian winters including heavy snow and chilling temperatures. Inclement weather poses increased risks for individuals to venture on the walk to and from school if sidewalks and roads are not properly maintained and rid of snow and ice. Weather is potentially a major barrier to active school transportation depending on the comfort level of the interviewee and findings imperative to this study may have been significantly shifted if conducted during the winter months of the year.

Secondly, using a grounded theory approach could also present a significant limitation to this study. Dey (1999) believes that “what we discover will depend on some degree on what we are looking for” (p.104). While using grounded theory allows for the researcher to develop themes from the data collected, it does not eliminate the fact that I had my own personal ideologies on the topic of active school transportation and that while I tried by best to eliminate any biases or preconceived notions about the topic, it is impossible to fully eradicate my own opinions and thoughts.

The sample population in this study represented mostly mothers of children who are currently attending JWPS. The sample did not represent any residents who had

children living in the neighbourhood who did not attend the case study school, or residents who had previously had children attending this particular school. To expand the study, interviews could have been conducted with individuals who previously have had a child attend the school in order to get a wider range of perspectives over numerous years.

Finally, important to this study is to acknowledge that the case study area surrounding John Wanless Public School is situated in a part of Toronto that is composed of a higher socio-economic status (City of Toronto, 2016), giving residents more choice and flexibility when it comes to transportation methods to and from schools. The sample population interviewed likely resides in this particular neighbourhood because of their ability to afford housing in a higher priced neighbourhood. The socio-economic status of a particular neighbourhood of study can result in different results when discussing the topic of active school transportation. Mitra, Buliung, & Roorda (2010) believe that neighbourhoods with a lower socio-economic status results in children combatting larger safety risks on route because of the absence of active school transportation infrastructure. Thus, high participation results in active school transportation to and from JWPS could be tied to the higher socio-economic status of the neighbourhood and not a good representation of active school transportation in the city of Toronto. To make the results more generalizable, this study would need to have been conducted in a different setting multiple times, in order to see if the same results would occur.

7. Suggestions for Future Planners

The conclusions drawn from this study can lead to larger planning discussions and recommendations for future neighbourhood planning and development as we enter a new age of city building. Firstly, it is important for planners to discuss and research ways in which to plan for new developments in existing neighbourhoods and ensure that schools and services are not overwhelmed with the influx of new development. Secondly, active school transportation can be a part of wider discussions initiated that examine the association (and tensions) between neighbourhood and individual health.

7.1 Planning for Increased Development

Evident from this study, the neighbourhood surrounding John Wanless Public School is experiencing increased density and growth on the periphery of the neighbourhood. With the City of Toronto's Official Plan placing importance on developing The Avenues, the neighbourhood is in for a great deal of more development throughout. It is the responsibility of urban planners to account for this growth, and ensure that before developments take shape and are built that they consider the impacts on local schools, services, shops, and businesses. The neighbourhood needs to be able to handle the increased fluctuation of its population and it should not hinder the ability for residents living in the surrounding neighbourhood from accessing their local schools, as it will ultimately decrease active forms of transit. Children should be provided a space for education that is in their neighbourhood, and accessible by some form of active school transport in order to maintain their health, interact with their neighbourhood on a pedestrian level and reap the benefits of active school transportation. Planners focus on

neighbourhoods that seem to be struggling to meet enrollment needs and ensure that proper development is planned for that neighbourhood to help balance out the enrollment in public schools throughout the neighbourhood. As local schools continue to be a pull factor for many when deciding on which neighbourhood to reside, proper accommodation for local students needs to be made or further development must be put to a halt. Ensuring that added development and intensification could be sustained in a particular neighbourhood is crucial to the way the neighbourhood will function, such as creating proper transportation networks, water and electrical infrastructure and parks and pathways.

The City of Toronto has made a concerted effort in making neighbourhoods stronger and more livable through their Strong Neighbourhood Strategy 2020. The strategy outlines 5 domains that are incredibly important moving forward. They include: Physical Surroundings, Economic Opportunities, Healthy Lives, Social Development, and Civic Participation (City of Toronto Strong Neighbourhood Strategy 2020). Planners need to ensure that the City is investing in neighbourhoods and the facets that make the neighbourhood an inclusive space including public schools, services, community hubs, etc. Planners need to work from a community level and find out what makes each neighbourhood strong in order to work with its strengths to keep improving its weaknesses. Toronto's Strong Neighbourhood Strategy 2020 will suffer if residents are unable to meet their daily needs and necessities from within the very own neighbourhood in which they reside.

7.2 Planning for Active School Transportation inside and outside the City

Active school transportation is an easier program to implement in the City of Toronto because of its diverse range of transportation options available to residents. However, the challenge for planners will be to address active school transportation needs in the periphery of the City as urban sprawl is causing severe impacts on our environment and earth as a whole. The automobile is having very direct and irreversible effects on the earth, atmosphere and the quality of the air we live and breath in everyday. Promoting and increasing active transportation for not only school trips, but also for other short everyday trips can have a beneficial impact on the quality of the environment and reduce our overall carbon footprint. While active transportation can have beneficial impacts on the individual as discussed above, it is important to mention the larger impacts it can have on the earth and its atmosphere. Mailbach, Steg, & Anable (2009) state that “automobile use is a significant contributor to climate change, local air pollution, pedestrian injuries and deaths, declines in physical activity and obesity” (p.1).

Active school transportation is so important not only for the health and wellbeing of young children, but also to teach the importance of the environment to children. Children are our future, and will be tasked with taking care of the environment in the future. Teaching and educating them about the benefits of walkability and active forms of transportation to help save and remediate the quality of our environment is imperative. Our reliance on the automobile, specifically for shorter trips that can be done through walking, biking or public transportation is adding to the detriment of the quality of the environment in which we live. To change the behavior of many, Mailbach, Steg & Anable (2009) believe that while structural design is important, communication,

marketing and policy enhancements are strongly needed in order to promote and encourage the use of active transport and change inactive behaviors. Using technology not only for getting the message across to promote active transit, but to also promote services such as car sharing can significantly address the current reliance on the automobile (Mailbach, Steg & Anable, 2009). The major hurdle when it comes to changing the behavior of many lies in the convenience of the automobile and its accessibility to the individual. Until major policy is put in place that favours walkability over the use of a private automobile, we will not see major change to the behavior of individuals and significant change to the state of our current environment

Climate change is on the horizon and felt very prominently in areas all over the globe with the increasing prevalence of more severe weather systems and devastating natural disasters. Increased walkability and active transit can be part of a local solution to a very global problem. Automobile emissions continue to be one of the largest contributors to air pollution and toxic emissions being swept up into the atmosphere (Mailbach, Steg & Anable, 2009). Efforts to increase active transit need to be addressed prominently by government officials, policy makers and citizens all over. There have been numerous studies conducted on the benefits of promoting health and climate change through active transportation. A recent study conducted by Frank, Greenwald, Winkelman, Chapman & Kavage (2010) noted that results from their study “make it clear that increased investment in transit and regional accessibility without the car coupled with increased walkability of local neighbourhoods can collectively lead to a more active, healthier and sustainable future” (p. 104). Active school transportation is part of the

solution to help eliminate unnecessary car travel and help promote a healthy active lifestyle, and ingrain walkable behavior in children from the beginning.

7.3 Planning for Individual vs. Neighbourhood Health

As planners, I believe that the emphasis should first be on neighbourhood health, to target higher numbers of people and have a wider impact of study. From my research conducted on John Wanless Public School and its surrounding neighbourhood, I learnt that the quality of neighbourhood infrastructure impacts the individual and ultimately deters the individual from participating in a healthy active lifestyle. When it comes down to it, the health of the individual is so reliant on larger elements such as the health of the neighbourhood, the health of the City and the health of the environment. An individual is directly impacted by the choices that we make as a whole, as a joint community. Therefore, as planners, our emphasis should be on implementing neighbourhood wide strategies in order to improve the overall participation and health of individuals and increase participation in active forms of transportation to and from school. It is not the responsibility of just the student or just the parent; it is the responsibility of the school, the neighbourhood, the school board, and the City as a whole to implement wider ranging strategies for change.

Individual health is directly impacted by the resources and services that they have available close to where they reside. Picket & Pearl (2001) draw associations between individual health and neighbourhood health stating that “the neighbourhoods in which people live may influence health, operating through such mechanism as: the availability and accessibility of health services; infrastructure deprivation (lack of parks, stores

selling healthy foods); the prevalence of prevailing attitudes towards health and health related behaviors and stress' (p.111). Individuals must rely on their neighbourhood to provide them with the necessary tools in order to take care of their health and well-being.

8 Conclusion

This paper adds to the significant discussion surrounding the topic of active school transportation in the GTA context. While a great deal of literature, research papers and studies have been conducted on the topic in recent decades, active school transportation specifically for children is on the decline and will continue to unless there is a substantial shift in behaviors. This paper emerged from my own personal experience with active school transportation, personal associations between walkability and health, and behaviors that have been embedded in my everyday life.

This paper lends itself to a common argument that the built environment influences travel behavior of residents, which can be encouraged or discouraged based on layout, land use and access to transportation (Handy, Boarnet, Ewing, Killingsworth, 2002). Provided in the discussion, many links between the physical walking environment and active school transport can be made. Proper attention by urban planners on neighbourhood planning can have many effects on the behavior of those using and residing in the neighbourhood on a daily basis. Urban planners must address and keep in mind three major components when planning: Neighbourhood Planning, Urban Design and Healthy Communities.

Using John Wanless Public School as a Midtown Toronto case study for further investigations into this topic, I learned numerous things about the neighbourhood that I grew up in, and how concerns for the future development may drastically change the neighbourhood's walkable urban fabric and is already changing the behavior of residents by deterring active transit. Overall, numerous residents cited the importance of active

school transportation for their children, and how it is an integral part of their day. The physical layout of the neighbourhood provided an ease of travel for residents living in the neighbourhood, and allows for alternate routes for navigating the neighbourhood. The gridiron street pattern gives residents a bit of choice when travelling through the neighbourhood and eases congestion as well as there are three main roads in which vehicles, pedestrians, cyclists, etc can navigate through in order to reach their destination.

While there was a great deal of positive reactions towards the elementary school's location within a highly walkable neighbourhood, results from interviews conducted with numerous residents proved that there are areas for future concern. Residents expressed concrete concern over the added residential developments in the neighbourhood, resulting in increased attendance for elementary schools and putting a strain on local schools and community services. This increased development and fluctuation of population in the neighbourhood even prompted the planning division of the TDSB to put up a sign warning residents about the possible over-enrollment in local schools, and how they may have to send their children to other schools outside of the neighbourhood that may not be within walking distance. From the added residential development, to ongoing construction in the neighbourhood, the results from the interviews concluded that added construction, digging up of sidewalks and heavy presence of construction vehicles hindered active school transportation for some families as concerns over pedestrian safety often came up in discussion.

The decline in active school transportation will continue unless behaviors are changed by both children and their parents. Education on the benefits of active school transportation needs to be far-reaching and accessible and it lies in the hands of the

TDSB and the Canadian government to implement policies, initiatives and programs specifically targeting active school transportation at the elementary levels. Targeting elementary schools will help encourage walkable behavior at a young age and will hopefully resonate with children alike in order to change their perception of their neighbourhood and start getting to know their surroundings on foot.

Finally, I believe imperative to active school transit and childhood walking behavior is that children need safe and secure pathways throughout the neighbourhood, not just to their public schools. While travel to school destinations is one of the most important journeys for young people, it is just one of many trips that children need to take throughout their neighbourhood, and ensuring their safety throughout is integral. I learnt that individual perceptions of neighbourhood safety highly determine the participation by the individual in active school transport. Therefore it is walkability on a neighbourhood level that must be addressed in order to increase participation in active school travel and that we must ensure that the neighbourhood first is walkable in order to promote active school travel. If parents have negative associations with the neighbourhood and pedestrian safety, they are less likely to want to send their children out into the neighbourhood streets that they have already deemed and perceived unsafe.

There is still much room for discussion surrounding the topic of active school transportation and its link to health, the environment and individual behavior. While overall outcomes for this specific study proved to be positive, there were still many elements of concern for future planners and future residents.

Active school transportation is an important part of the day and can add to a child's healthy active lifestyle. While it is an added element of physical activity, childhood health stems from physical activity, a healthy diet and moderation.

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