Encouraging Active Transportation for Children and Finding Sustainable Solutions to School Traffic Problems in The District of West Vancouver: A Case Study of Gleneagles Elementary and West Bay Elementary

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Final Report

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1.0 Executive Summary

The main objective of this report is to establish the problems that Gleneagles Elementary School and West Bay Elementary School are facing in terms of school traffic, and to provide recommendations and insight for those schools and others in the area on the ways that school traffic can be alleviated and active transportation can be encouraged. The information in this report as well as the final recommendations are intended to inform these two schools and the District of West Vancouver of the barriers schools can encounter and possible solutions in terms of school travel plans. It is important to note that the use of school bus programs has been excluded from this research due to the West Vancouver School Board illustrating the large barriers around school bus programs, such as finances.

Barriers to Active Transportation

<table>
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<th>Problems</th>
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<tr>
<td>• Not enough children taking active transportation to/from school</td>
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<td>• Parents and guardians disobeying parking regulations</td>
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<td>• Not using pre-existing programs</td>
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Benefits to Active Transportation

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<th>Benefits</th>
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<td>• Improvements in physical health</td>
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<td>• Improvements in academic performance</td>
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<td>• Sustainable</td>
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Gleneagles Elementary School

Problems:

• Not enough children taking active transportation to/from school
• Parents and guardians disobeying parking regulations
• Not using pre-existing programs

Recommendations:

• Utilization of the Spirit Trail (once installed)
• Create a school brochure including information on the school’s parking regulations and programs in place, along with a URL to the Hub for Active School Travel website
• Place cones and pylons in no-stopping zones
• Programs: park and walk program, walk/bike to school week program, classroom engagement

West Bay Elementary School

Problem:

• Not enough children taking active transportation to/from school

Recommendations:

• Programs: park and walk program (possibly combined with a walking school bus program), walk/bike to school week program, classroom engagement
• Advertise all of the above in the school brochure, along with a URL to the Hub for Active School Travel website
2.0 Introduction

West Vancouver has a high percentage of parents who drive their children to school—one vehicle, one child. This is a problem that has become more prominent both locally and globally in recent years. Not only is it an unsustainable method, but it also produces large amounts of traffic surrounding the schools at drop-off and pick-up times. Sustainable and active transportation are easy ways that can help reduce the number of vehicles surrounding the school and also encourage physical activity in children. This report examines two elementary schools in West Vancouver, Gleneagles Elementary and West Bay Elementary, in order to find out the troubles each school is facing regarding school traffic and to recommend the best options to help alleviate these issues.

3.0 Methods

This report has been conducted through both quantitative and qualitative research methods. First, an extensive and widespread literature review was executed in order to determine the attitudes surrounding active and sustainable transportation, what other cities are doing about this problem, as well as the possible solutions and the barriers and successes of each. Second, a series of both expert interviews and semi-structured interviews were conducted in order to determine the current issues in West Vancouver, along with what has been done and what can be done with each of the schools I am working with: Gleneagles Elementary and West Bay Elementary.
4.0 Literature Review

School Travel Plans\(^1\) [STP] are programs that are implemented in places around the world. Due to this interest, there have been many studies conducted, researching the many different aspects of STPs, such as barriers and positive outcomes. There are plenty of barriers that prevent parents and guardians from walking or biking with their children to school, however once you get past these barriers, there are also plenty of benefits.

4.1 Barriers

Some of the biggest barriers surrounding children travelling to and from school by any other method than private vehicle are the perceptions around safety and convenience. Parents feel it is safest to drive their child to school in their own private vehicle; however contrary to this belief, McDonald et. al. (2015) found that it is in fact the second least safe method to get a child to school; the least safe method being getting a child to school via a teen driver. The study goes on to find that “walking and bicycling have lower injury rates than driving with an adult” (ibid. p. 131). This is an important study due to the fact that it breaks down the overall assumptions that driving your child to school is safest. Johnston et. al.’s (2006) report on the effectiveness of a walking school bus program\(^2\) [WSBP], found that a child walking with an adult reduce the risk of injury by 70%. According to Transport Canada (2009), some of the main hesitations surrounding allowing your child to walk or bike to school were concerns of busy traffic and bad drivers, no sidewalks or poor roads, or that the distance was too far.

\(^1\) A School Travel Plan [STP] is a plan intending to reduce the number of car trips made to school, or a school district, by parents and staff.

\(^2\) A Walking School Bus Program [WSBP] is a program where a group of children lead by one or more parents are picked up on route to and from school, much like a normal school bus.
Heelan et. al. (2008) as well as Pooley et. al. (2010) discovered in their research that the convenience of driving your child to school was also a barrier in trying to change the habits of the parents. Pooley et. al. (2010) determined that those children who drove to school versus those who walked found it to be very boring compared to when they walked or biked to school. Some of the barriers found in research in regards to implementing STPs were examined by Baslington (2008), who found that the recruitment of volunteers, along with the social, geographic and financial restrictions imposed on some schools were the most significant barriers to the implementation of STPs. In addition to this, Heelan et. al. (2008) determined that weather, as well as time and convenience were also barriers when attempting to implement a WSBP.

4.2 Benefits

Though there are plenty of barriers preventing parents from allowing or taking their kids to school by use of active transportation, there are also plenty of positive aspects. It is noted by Pooley et. al. (2010) that those who walked or biked to school were “most likely to engage with their immediate environment” (p. 948), which is not only stimulating for the child, but also gave them the feeling of independence. Additional studies have discovered that those who are physically active on a daily basis show mental benefits as well as physical. Pucher et. al. (2013) found in their research that school health promotion, especially physical activity, can have small to large positive effects on ones academic performance.

As well as benefitting a child mentally, physical activity can also benefit a child physically. A study conducted by Hinckson, Garrett, and Duncan (2011) discovered that in New Zealand, those students who cycled to school five days a week were more fit than
majority of their classmates. Another study by Larouche et. al. (2014), found that those who reported walking 1-5 hours a week resulted in an all around healthier child, versus those who reported walking less than 1 hour per week. Therefore, walking and biking to and from school are easy and convenient ways to boost a child’s daily and weekly average time being physically active.

5.0 Findings and Discussion

Through interviews, I have discovered plenty of information surrounding the common problems around school travel and school traffic, the specific problems of each of my case study schools, Gleneagles Elementary and West Bay Elementary, and gained knowledge about the most successful plans to implement these programs. With this information gathered, I am able to not only report my findings, but also go over the importance of certain scenarios and situations.

5.1 HASTe: Hub for Active School Travel

The Hub for Active School Travel [HASTe] is the only school travel planning organization in British Columbia working with schools and communities to reduce driving and to encourage active transportation. I had an extremely informative interview with Omar Bhimji, one of HASTe’s project managers, who explained to me the most common issues they come across in British Columbia. The biggest barrier for kids walking and biking to school lies in the cultural aspects of the community; driving is convenient, and this mindset of convenience can be the biggest challenge to overcome. There is no universal solution for this barrier. There are programs that assist it, such as a park and walk
program. This sort of program allows for convenience to stay a factor but also aids the immediate traffic surrounding the school and encourages active transportation. This is one example of a program that keeps convenience at the forefront.

Another tactic that Bhimji noted was very successful that HASTe includes in their programs is classroom engagement. Bhimji and his team have found that working with kids in the classroom and getting them excited on walking or biking to school allows the parents to get convinced by their child as opposed to the school. A child wanting to do something is sometimes the biggest motivator for parents to get behind a program such as walk or bike to school week, a WSBP, or a park and walk or ride program.

HASTe is available for hire to make in depth, personalized reports of a school’s current problems regarding school travel, make a STP, and provide the ‘after’ results. Though this is an amazing service and extremely desirable, it is not always accessible for schools, which is why the District of West Vancouver is trying to take steps of their own towards better school travel habits and to encourage active transportation. HASTe has a large amount of resources available online for free use, including tools on implementing your own programs at your school, finding the best walking or biking route to your school, and how to make a STP.

5.2 Gleneagles Elementary School

Gleneagles Elementary is located on Marine Dr. in Horseshoe Bay. They have students in grades kindergarten to seven (ages 5-12), and as seen in pink in figure 1, they have a catchment area that extends out to Lion’s Bay. Due to this catchment that is only

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3 A park and walk or ride program is where a parent or guardian drives their child majority of the way to school, then park their car within a ten or so minute walk away and walk or bike in the rest of route.
accessible by highway, Gleneagles Elementary is the only public elementary school within the District of West Vancouver that has a school bus system (Sgt. James, 2015). Their school bus runs twice a day, once for drop-off and once for pick-up. Gleneagles is relatively strict on their catchment area, accepting mainly students within their catchment.

![Map of West Vancouver School District](image)

Figure 1: The District of West Vancouver School Zones. Source: School District 45: West Vancouver School District—School Boundaries

5.2.1 Gleneagles Elementary School: What They’ve Done

Thus far, Gleneagles Elementary has taken a number of steps to alleviate their school traffic problems and safety concerns (Wallace, 2015). They have worked with the District of West Vancouver to install a large roundabout at a busy four-way intersection
next to the school in order to slow down traffic. In addition to this, they have also installed a crosswalk along Marine Dr. in order to allow students to safely cross the street. Gleneagles Elementary also has a roundabout in front of their main entrance that allows parents to pull in, drop their child off, see them enter through the front door, and drive out smoothly. One of the most advantageous steps the school has taken is the agreement they have made with the Gleneagles Community Center, which is a three-minute walk away that requires no streets to be crossed. This agreement with the Gleneagles Community Center allows Gleneagles Elementary parents to use one of their parking lots for drop-off and pick-up. Parents and guardians are more than welcome to park here and wait for their child to walk down the safe sidewalk to meet them. This agreement allows for more traffic to be diverted away from the school’s main feeder streets, Marine Dr. and Keith Rd.

5.2.2 Gleneagles Elementary School: The Problems They’re Facing

First and foremost, Gleneagles Elementary does not have many children taking active transportation to school. This results in the majority of students, excluding those taking in the school bus from Lions Bay and those within an extremely close vicinity to the school, to be driven to school by single-occupancy vehicle. This large volume of cars and limited parking creates problems for the school. The morning drop-off is mostly smooth, with parents and guardians mainly using the roundabout in front of the school; however during pick-up time when school is dismissed, parents start to park in the roundabout instead of driving through which makes it difficult for other cars to get in and by. This forces majority of cars move down to Marine Dr. to find short-term parking. The school has in the past called for official authority, such as police officers, to stand and attempt to maintain the legal traffic laws (Plant, 2015).
There are a small number of designated spaces along Marine Dr. for cars to pick-up their students; however these spaces are limited. The large volume of traffic that flows through this street causes cars to park along Marine Dr. in no-stopping zones, no-parking zones, and even a public bus stop. These are not proper spaces for cars to stop, and leave limited room for traffic to flow through. In addition to this, these cars are parked in between two crosswalks, with the result that children jaywalk across the street to meet their parent. This is not only extremely concerning and unsafe, but unnecessary seeing as there is a crosswalk a mere 15 meters away. The community center parking lot is scarcely used during drop-off and pick-up. The reason behind this is unknown, however it is safe to assume that parents and guardians like being able to sit right outside the school to look for their child rather than a three-minute walk away.

To summarize, Gleneagles Elementary does not have enough students talking active transportation to school; they also do not have many parents using the roundabout system correctly at school dismissal time. In addition to this, they have cars parking in no-stopping zones, no-parking zones, and a public bus stop. Also, the community center parking lot is not being used, despite its convenience and safe route to get there.

5.2.3 Gleneagles Elementary School: The Spirit Trail

Gleneagles Elementary is awaiting the installment of the highly anticipated Spirit Trail. The West Vancouver portion of the Spirit Trail, once complete, will connect the community of Horseshoe Bay to the Lions Gate Bridge with an unbroken, mostly flat walkway for walking and biking. The already-completed portions of this trail show a wide pathway that is smooth and aesthetically pleasing. This trail will pass directly by Gleneagles Elementary School as seen in red in figure 2. The installment of this trail
includes shifting the Marine Dr. roadway east, which will fully eliminate those no-stopping and no-parking zones for cars; the option to stop there will no longer exist. Also, it will run through the community of Horseshoe Bay, providing a pleasant, accessible route for parents and children to walk and bike to and from school. This trail is highly anticipated for Gleneagles Elementary due to the elimination of illegal parking spaces, and the possibility it holds to attract more students, parents, and guardians to take active transportation to school.

Figure 2: The Spirit Trail, Zone 2: Gleneagles. Source: The District of West Vancouver via Space2Place

5.3 West Bay Elementary School

West Bay Elementary is located in central West Vancouver below the Trans Canada highway, south from Cypress Bowl Road. They have student’s grades kindergarten to seven
(ages 5-12). Their catchment, as seen in the grey-purple area in figure 1, is in a densely residential area and extends both above and below the Trans Canada highway. In addition to this, West Bay is not as strict when it comes to accepting students outside of their catchment, having multiple students who reside outside of even the District of West Vancouver. This large and lenient catchment makes West Bay Elementary a larger school than Gleneagles Elementary with students commuting to and from further away. I met with Principal Judy Duncan and Parent Advisory Committee [PAC] chairwoman, Tricia Wilson, in order to discuss their school’s current status in school traffic and active transportation.

5.3.1 West Bay Elementary School: What They’ve Done

West Bay Elementary has taken multiple steps in order to manage their school traffic. They have created a brochure that is distributed to every parent and guardian at the beginning of the year. In this brochure, they include their drop-off and pick-up regulations, along with where you can and cannot park. They have created a well-working roundabout system for drop-off and pick-up where students, parent volunteers, teachers, and the principal all stay outside to monitor. This system works extremely smoothly due to the supervision, the overall knowledge of it, and the parking spaces that have been changed from two-hour, to no stopping at school-start and dismissal times. In addition to this, a separate area has been created for kindergarten parents and guardians who receive ‘parking permits’ that allow them to park and walk their child into school. West Bay Elementary has also added new bike racks and a crosswalk at the end of their street.
5.3.2 West Bay Elementary School: The Problems They’re Facing

Even though West Bay Elementary is managing their school traffic well, there are a very small number of children walking and biking to school and still a high number being driven by single-occupancy vehicle. The school wants there to be a positive shift in the number of students taking active transportation to and from school. Not only does this encourage physical activity and is more sustainable, but it also could help ease the amount of cars using their roundabout system every day, making it work even better.

6.0 Recommendations

Through my literature research and interviews, I have acquired the adequate knowledge to suggest what I believe to be the most beneficial changes that can be made at both Gleneagles Elementary and West Bay Elementary. I found that both schools could benefit greatly from using the tools available to them on the HASTe website, and if this website was introduced to parents I trust this could also benefit both schools.

6.1 Gleneagles Elementary School

Gleneagles Elementary is currently ‘on-hold’ for any big changes being made to their school traffic systems due to the much-anticipated Spirit Trail. They feel as though this trail will greatly benefit them due to the elimination of parking spaces and creation of an easy route through the neighborhood to and from school. That being said, in the mean time, there are a few things Gleneagles could be doing. Firstly, the creation of a school brochure to be handed out at the beginning of every year to all parents and guardians explaining the traffic and parking rules and regulations, including a URL to the HASTe website, along with advertising the use of the community center parking lot and making all parents aware of
any active transportation programs would be extremely beneficial. This step of making everyone aware of the possibilities made to them is important in the first step of change. Secondly, to eliminate the issue of cars parking where they are not allowed, cones and pylons can be placed in these locations at drop-off and pick-up hours. Thirdly, the creation of walk and bike to school week programs can be extremely beneficial in introducing an active transportation lifestyle to students. In this, classroom engagement would be crucial, along with small prizes for motivation. It is found that walk and bike to school week programs typically jump-start a permanent plan for students and parents to take active transportation to school (Bhimji, 2015).

After the Spirit Trail is installed, a WSBP could be very beneficial for the school. The ability to do so would be made easy with a pleasant, flat and accessible trail to use that passes many students’ homes on the way to school. There are other options that could work for Gleneagles Elementary as well, such as a park and walk program, however I believe the steps just mentioned would yield the most beneficial and instant results.

6.2 West Bay Elementary School

Due to West Bay Elementary School’s current status on their well-maintained school traffic roundabout system, my recommendations for the school focus mainly on how to get more students taking active transportation to school. Firstly, a park and walk program would be extremely beneficial to West Bay Elementary. There is a gas station located just off the closest highway exit, which is a fifteen-minute walk to the school. This walk is on quiet streets and all streets have sidewalks. This location is convenient for all those arriving via the Trans Canada highway, as well as those who reside close by. This park and walk can be combined with a WSBP, where ten or so children can be dropped off at the gas
station and walking into school by two or more adults. More walk and bike to school week programs could be implemented at West Bay Elementary as well for the same reasons and with the same techniques as mentioned in Gleneagles Elementary School's recommendations. It is important to note that walk and bike to school week programs are most successful and see the most repeated results when implemented at the beginning of the school year (Bhimji, 2015). Classroom engagement in the walk or bike to school week programs, and overall, can be very beneficial. Carpooling is also an option that could be explored for the school; however this would have to be more so organized by the parents. West Bay Elementary should include any and all programs that will be put in possible use, as well as information about HASTe and a URL to their website in their brochures that are handed out every year. This information can then be learned, shared, and utilized by all the parents and guardians.

7.0 Conclusions

The number of children arriving to school by single-occupancy vehicles is high in the District of West Vancouver. There are many barriers that we face when attempting to change these habits, such as attitudes surrounding the safety and convenience of cars. That being said, there are many different methods and programs that can be implemented in order to change these habits, such as making parents aware of the benefits of taking active transportation to and from school, implementing walk and bike to school week programs, creating a park and walk program where parents can still drive majority of the way, and by creating a brochure to hand out, full of information on the school's personal drop-off and pick-up regulations as well as any and all of the programs they have running at the time. Making parents and guardians aware of the possibilities that are available to them can help
to reduce school traffic and increase active transportation. In-class involvement with the students is also a great tactic in order to motivate the children to take active and sustainable modes of transportation to and from school. Many of these tactics can be used all around the District of West Vancouver; they are not limited to Gleneagles Elementary and West Bay Elementary. Overall, there are options to help and alleviate the current issues of ‘one child, one car’ driving habits and to encourage active and sustainable transportation among children and youth in the District of West Vancouver.
8.0 Works Cited


Pucher, K., Boot, N., & De Vries, N. (2013). Systematic review: School health promotion interventions targeting physical activity and nutrition can improve academic performance
doi:10.1108/he-02-2012-0013


9.0 Figures

*Figure 1*: The District of West Vancouver School Zones. *Source: School District 45: West Vancouver School District—School Boundaries*

http://www.sd45.bc.ca/docs/WVSD-School-Boundaries.pdf
**Figure 2:** The Spirit Trail: Glean eagles. *Source:* The District of West Vancouver, Space2Place, September 29, 2013, Figure E: Glean eagles (North) Proposed Concept Plan