

Unionville High School Transportation Survey

Key Findings

June 2004



Unionville High School Transportation Survey



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Introduction

The S.T.E.P. (Sustainable Transportation Education Program) pilot project was developed to engage high school students to increase their participation in active and efficient modes of transportation. Educating high school students about the importance of active and efficient transportation is crucial in the forming of positive long lasting attitudes and behaviors. This in turn may be key in reducing the use of polluting forms of transportation and perhaps improving the rate of climate change.

The S.T.E.P. Pilot project was developed and implemented at two Ontario High Schools, Peterborough Collegiate and Vocational School and Unionville High School. Through the use of community-based social marketing and the gathering of data and opinions on mobility behavior and attitudes from students, we hope to gain a clearer understanding of how to support students in making healthier transportation choices.

The Town of Markham, Pollution Probe, and students from the University of Toronto Applied Environmental Research worked to design and analyze a survey to assess students' demographics, modes of transportation, and attitudes towards transportation in their community. The findings from that survey are presented in the following report.

Purpose and Methodology

Background

In February 2003 the Town of Markham transportation demand management office and Mayor's Youth Task Force in consultation with Pollution Probe and the Clean Air Champions conducted a youth and mobility workshop with 50 Unionville High School student association representatives. The purpose of the workshop was to initiate a travel options program that would encourage students, staff and parents to use active and sustainable modes of travel to get to and from school.

The first phase of the pilot program involved an environmental scan of the target market using a travel survey and an assessment of the transportation facilities serving the destination. The travel survey also supports the broader research objectives of the S.T.E.P. pilot project and forms the baseline required for monitoring and evaluation purposes.

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Purpose

The purpose of the draft survey , developed in consultation with Pollution Probe was to gain a preliminary understanding of mobility patterns of the high school students, to help decide on the final survey questions and to support the final survey analysis. The draft survey was administered to the thirty-seven student association leaders during the February 2003 workshop. After the workshop the development and implementation of the pilot project became the responsibility of the student led Eco-Action group.

Instrument

The draft survey was analyzed and evaluated by a University of Toronto student team as part of the requirements for INI 443H/ IES 2002F: Applied Environmental Research. A revised survey or second draft was administered as a test to the “Eco-Action”, environmental group comprised of approximately forty students at Unionville High School on Nov. 4th. Based on the results and feedback from the Eco-Action group on the second draft the University of Toronto students were charged with developing a final survey instrument, and Acumen Research conducted a final peer review to refine the questionnaire.

The final instrument consists of a total of 18 items divided into three sections. Section I, gathers background information on respondents (demographics). Section II, focused on current travel behavior. Section III, consisted of specific questions to determine attitudes concerning the use of alternative modes of travel and a single open ended question to gather general comments.

Sampling/Data Analysis

The final survey was administered as a hard copy on Nov. 21st to the total school population of 1800 students. Over a one week period 1062 completed surveys were collected for a 62% response rate. The data collected from the survey responses was inputted using an online data entry form by Unionville High School student volunteers as part of the Community Service requirement for their Ontario Secondary School Graduation Diploma. Acumen Research Group Inc. conducted the data analysis and the survey findings report preparation.

Demographics

This section describes the survey respondents in terms of grade, gender, vehicular access and proximity to the school. Figure 1 indicates that nearly one-third (31%) of all respondents were grade 9 students, 29% were grade 10 students, 23% grade 11, and 17% grade 12.

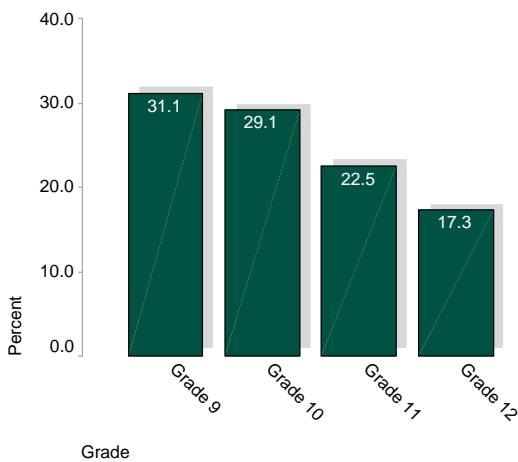
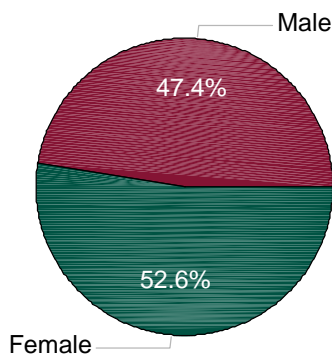


Figure 1 – Respondents by Grade

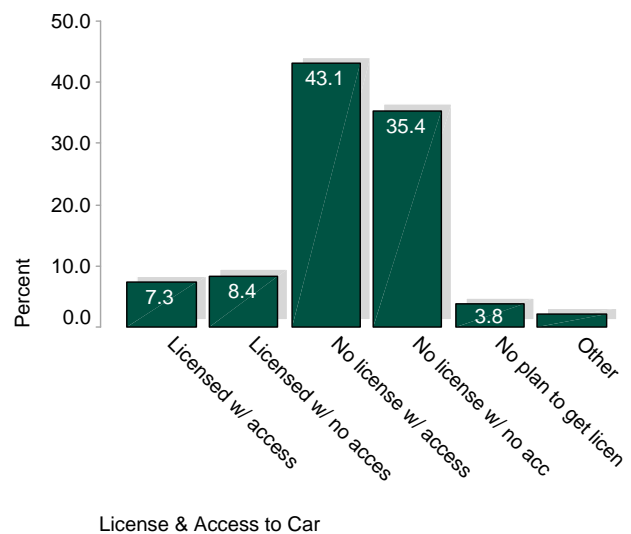
The gender breakdown of respondents



is approximately balanced (Figure 2). **Figure 2 – Respondents by Gender**

Students were asked about their access to, and operation of automobiles. The vast majority (82%) of students are not licensed to drive; however, the majority of these students do plan to obtain their license before age 19 and half of them believe that they will regularly have access to a car. Among the 16% of students who do currently possess a driver's license, half of them do have regular access to a car. Tables 1 and 2 on the following page explore the information in Figure 3 by grade and gender. Over 90% of Grade 9 and 10 students do plan to get their license before age 19. Approximately one quarter of Grade 11 students and over a half of Grade 12 students are licensed to drive. The majority of licensed Grade 12 students do have regular access to a vehicle, whereas about one in four licensed Grade 11 students report having access to a car on a regular basis.

Figure 3 – License to Drive and Vehicular Access



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Table 1 – License to Drive and Vehicular Access by Grade

License & Access to Car * Grade Crosstabulation

			Grade				Total
			Grade 9	Grade 10	Grade 11	Grade 12	
License & Access to Car	Licensed w/ access	Count		2	14	59	75
		% within Grade		.7%	6.0%	33.5%	7.3%
	Licensed w/ no access	Count	1	4	42	39	86
		% within Grade	.3%	1.3%	17.9%	22.2%	8.4%
	No license w/ access	Count	168	151	92	34	445
		% within Grade	53.5%	49.7%	39.1%	19.3%	43.2%
	No license w/ no access	Count	127	126	77	33	363
		% within Grade	40.4%	41.4%	32.8%	18.8%	35.3%
	No plan to get license	Count	11	16	4	8	39
		% within Grade	3.5%	5.3%	1.7%	4.5%	3.8%
	Other	Count	7	5	6	3	21
		% within Grade	2.2%	1.6%	2.6%	1.7%	2.0%
	Total	Count	314	304	235	176	1029
		% within Grade	100.0%	100.0%	100.0%	100.0%	100.0%

Males are almost twice as likely as females to currently possess a driver's license.

Table 2 - License to Drive and Vehicular Access by Gender

License & Access to Car * Sex Crosstabulation

			Sex		Total
			Female	Male	
License & Access to Car	Licensed w/ access	Count	27	48	75
		% within Sex	5.0%	9.9%	7.3%
	Licensed w/ no access	Count	35	51	86
		% within Sex	6.5%	10.5%	8.4%
	No license w/ access	Count	237	204	441
		% within Sex	43.9%	42.1%	43.1%
	No license w/ no access	Count	210	153	363
		% within Sex	38.9%	31.6%	35.4%
	No plan to get license	Count	19	20	39
		% within Sex	3.5%	4.1%	3.8%
	Other	Count	12	8	20
		% within Sex	2.2%	1.7%	2.0%
	Total	Count	540	484	1024
		% within Sex	100.0%	100.0%	100.0%

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The majority of Unionville students reside in the proximity of the school. Nearly 60% live no more than 3 kilometers away (one in five students reside within a 1 kilometer radius).

Table 3 – Distance Students Live from The School

Kilometers from School

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<1	189	17.8	18.6	18.6
	1-3	394	37.1	38.9	57.5
	3-5	137	12.9	13.5	71.0
	5-10	98	9.2	9.7	80.7
	10-20	92	8.7	9.1	89.7
	>20	104	9.8	10.3	100.0
	Total	1014	95.5	100.0	
Missing	System	48	4.5		
Total		1062	100.0		

Mode of Transportation

This section examines the modes of transportation Unionville School students used during the previous week to commute to and from school.

The use of different transportation modes remained fairly consistent as the week progressed; however the data does reflect a pattern of change between the morning and afternoon. In the morning over one half of students were driven to school and dropped off (this does not include those who drove with another student). At the end of the day less than one-third of students were picked up and driven from school. The proportion of students taking transit or walking rises correspondingly between morning and afternoon indicating that over 20% of students are dropped off at the beginning of the day and resort to walking or taking the bus back home. Over 20% of students walk or use the

bus to get to school in the morning to begin with, which means commuting via these modes effectively doubles between the morning and afternoon. An additional 20%+ students use modes of transportation that remain more consistent between the morning and afternoon, and these include taking the school bus, cycling and driving either with another student or alone. 90% of students agreed that the modes of transportation they indicated using for this specific one-week period were a typical reflection of their commuting situation.

Students who share a ride to school are usually driven by one family member on their way to work. In 70% of these cases the school is not out of the way for the commute to work.

Approximately 60% of students who share rides report no more than two occupants per car.

Table 4 – Mode of Transportation During the Week Prior to Responding to the Survey

How Did You Get To School Last Week?	Monday		Tuesday		Wednesday		Thursday		Friday	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Took the school bus	9.4	9.8	9.2	8.6	9.3	9.4	9.1	8.4	9.1	9.6
Drove alone	3.5	3.4	3.7	3.3	3.8	3.0	4.2	3.1	4.1	3.2
Was dropped off/picked up	55.0	32.5	55.0	32.5	54.3	31.4	53.8	32.4	55.6	30.5
Drove with another student	8.5	8.6	8.4	9.4	8.2	9.3	8.6	9.4	7.3	9.1
Took transit	3.6	8.4	3.8	9.7	4.0	9.7	3.4	9.0	3.9	10.1
Cycled	1.1	1.5	1.1	1.8	1.0	1.3	1.2	1.5	1.0	1.8
Walked	17.0	33.1	16.9	32.0	17.4	33.2	17.7	33.5	17.0	33.0
Other	1.9	2.7	1.9	2.8	2.0	2.8	2.0	2.6	2.0	2.8

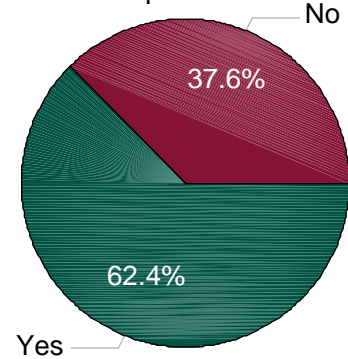
Carpooling

Unionville students were asked if they know of someone that they might be able to carpool to school with. Overall, about two-thirds of the students know of such a person. The last column in

Table 5 indicates that 16% of students do in fact carpool to school, and an other 35% are interested in the possibility. This interest in carpooling seems to rise with opportunity; 39% of students who know somebody to carpool with are interested, however only 29% of students who know of no one to carpool with are interested.

Analysis by Grade shows that interest in carpooling is highest among the Grade 11 students, and participation in carpooling is greatest among the Grade 9 students.

Figure 4 – Know Someone to Carpool With



One student suggested: *'consider developing a carpool program for students'*

Table 5 – Interest in Carpooling by Knowledge of Someone to Carpool With

Interested in Carpool * Carpool Crosstabulation

			Carpool		Total
			Yes	No	
Interested in Carpool	Yes	Count	244	104	348
		% within Carpool	39.3%	28.7%	35.4%
	No	Count	233	244	477
		% within Carpool	37.5%	67.2%	48.5%
	I already do	Count	144	15	159
		% within Carpool	23.2%	4.1%	16.2%
Total		Count	621	363	984
		% within Carpool	100.0%	100.0%	100.0%

Table 6 - Interest in Carpooling by Grade

Interested in Carpool * Grade Crosstabulation

			Grade				Total
			Grade 9	Grade 10	Grade 11	Grade 12	
Interested in Carpool	Yes	Count	100	94	95	61	350
		% within Grade	32.8%	33.7%	41.5%	35.5%	35.5%
	No	Count	139	151	102	82	474
		% within Grade	45.6%	54.1%	44.5%	47.7%	48.1%
	I already do	Count	66	34	32	29	161
		% within Grade	21.6%	12.2%	14.0%	16.9%	16.3%
Total		Count	305	279	229	172	985
		% within Grade	100.0%	100.0%	100.0%	100.0%	100.0%

Walking and Cycling

Almost two-thirds (62%) of students have walked to school at one time or another, but only 19% of students had ever cycled to school. Table 7 lists a number of reasons why students may decide not to walk or cycle to school.

Respondents were asked to rate on a scale of 1 to 4 how influential each of these factors were in causing them to make this decision not to walk or cycle. The fifth column in Table 7 presents the mean scores for these ratings of influence from 1 (Not Influential) to 4 (Very Influential)*. The factors that carry the greatest influence in deterring walking or cycling are the weather ('Weather Related'), and the distance to school ('Live Too Far' and 'Takes Too Long'). The weight of the school bag ('Bag is Too Heavy') and the fact that students have family or friends who can drop them off ('Parent/Friend on Route') are two other factors that are important in reducing the incidence of walking or cycling. The item described in Table 7 as 'Other' was usually specified as the tired, lazy state that students find themselves in during the morning or the

fact that they would be late for school were they to walk or cycle.

Table 7 – Factors Influencing Decision Not to Walk or Cycle to School

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Live Too Far	834	1	4	2.69	1.24
Takes Too Long	885	1	4	2.85	1.18
Don't Enjoy it	873	1	4	1.93	1.07
Weather Related	930	1	4	2.88	1.07
Not Safe	868	1	4	1.95	1.08
Bag is Too Heavy	899	1	4	2.58	1.14
Parent/Friend on Route	836	1	4	2.58	1.20
Early Activity	629	1	4	1.90	1.14
Need Car for Lunchtime	560	1	4	1.61	1.02
Don't Have a Bicycle	666	1	4	1.71	1.14
Other	123	1	4	2.46	1.33
Valid N (listwise)	74				

Figure 5 – Ever Walked to School

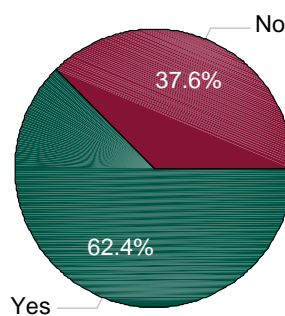
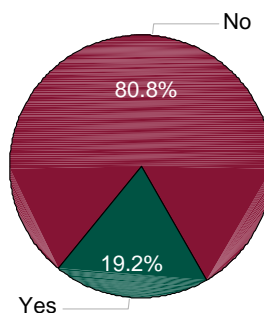


Figure 6 – Ever Cycled to School



* The survey data was originally coded in the reverse fashion whereby 1 equaled 'Very Influential' and 4 equaled 'Not Influential'. The data was recoded for analysis to reflect increasing influence in an increasing value from 1 to 4.

Transit

Approximately one-third or 31% of students have taken transit to school. Among those who do use transit to get to school, over one-half (56%) typically pay the bus fare with a ticket, while 39% use cash. Nearly one in ten students have a transit pass at their disposal. Please note that students could conceivably use more than one method of payment over a round trip. For example, the student might pay by ticket on their way to school and pay by cash on their way back from school.

Figure 7 – Ever Taken Transit to School

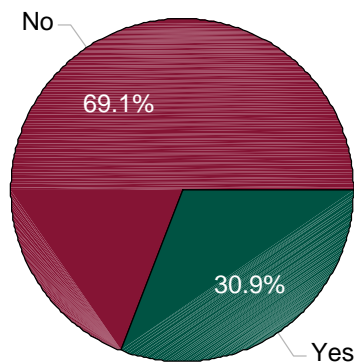
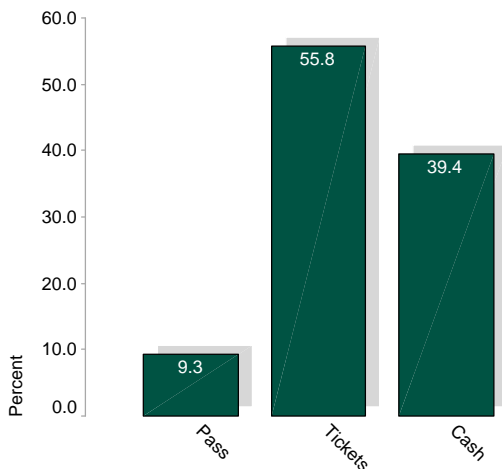


Figure 8 - Method of Payment



All students were asked to indicate which transit bus route(s) they would most likely take to get to school. Table 8 indicates that Unionville Local #40 and Highway 7 #1 are the two routes that would probably be used much more frequently than the others.

Table 8 – Proportion of Students Likely Using Each Bus Route

Transit Route	Overall	Transit Users
Unionville Local #40	25.7	46.2
Markham Local #40	2.7	5.1
Warden #268	4.5	7.7
16 th Avenue #85	2.7	3.8
Highway 7 #1	14.4	29.8
I don't Know	35.3	13.1
Other	6.7	8.3

When asked if such a bus trip to school would be convenient, almost one half of students stated that it would in fact *not* be.

Students were asked to identify what factors contributed to a bus trip to school being inconvenient. The notion that the bus does not run frequently enough and that it takes too long were each cited as inconveniences by almost one half of the students. Over 40% also indicated that the bus stop is not close enough to their home. The factors of inconvenience represented by “Other” in Table 9 were often comments on the cost associated with taking transit to school.

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Table 9 – Factors Making Bus Trips Inconvenient

Inconvenience	% of Students
The bus stop is far from home	42.8
The buses do not come frequently	47.6
The buses do not arrive according to schedule	36.0
Too many transfers	25.2
Takes too long	46.4
Other	21.6

Students were asked to rate the degree of influence various factors had on causing them to not use public transit. Students used the same 4-point scale they used to answer this question in regard to walking or cycling. Consistent with the findings in Table 9, students are most likely to indicate that the length of time required for a bus trip ('Takes Too Long') has the greatest influence on deterring them from using transit (Table 10). Other factors with relatively high levels of deterrence include lack of awareness of the bus schedule ('Don't Know Schedule'), the fact

that students have family or friends who can drop them off ('Parent/Friend on Route') and the perception that the bus is not pleasant ('Don't Enjoy it'). The item described in Table 11 as 'Other' was often specified as not being able to reach the bus stop in time, the fact that they have a more convenient mode or the fact that they are not on a route.

One student summed it all up, remarking about the local transit system in an additional comment: *'doesn't come in time, it doesn't come frequently, it's expensive, and the quality of the bus is deteriorating'*

Table 10 - Factors Influencing Decision Not to Take the Bus to School

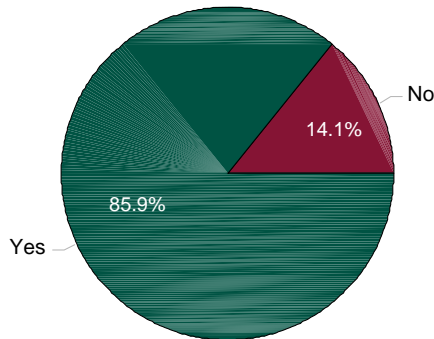
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Live Too Far	764	1	4	2.25	1.25
Takes Too Long	830	1	4	2.78	1.20
Don't Enjoy it	821	1	4	2.46	1.21
Weather Related	814	1	4	2.27	1.14
Not Safe	798	1	4	1.85	1.02
Parent/Friend on Route	768	1	4	2.56	1.23
Early Activity	578	1	4	1.93	1.17
Need Car for Lunchtime	530	1	4	1.70	1.06
Too Expensive	781	1	4	2.34	1.17
Don't Know Schedule	792	1	4	2.58	1.23
Rather Walk/Cycle	756	1	4	2.25	1.25
Other	166	1	4	2.47	1.33
Valid N (listwise)	96				

Attitudes Towards Transportation

Overall, 86% of Unionville students are content with their present mode(s) of transportation to and from school. Many students indicated that convenience was the reason why they like their present mode(s) of transportation. The inconvenience of having to depend upon another person was the usual reason students do not like their present mode(s) of transportation.

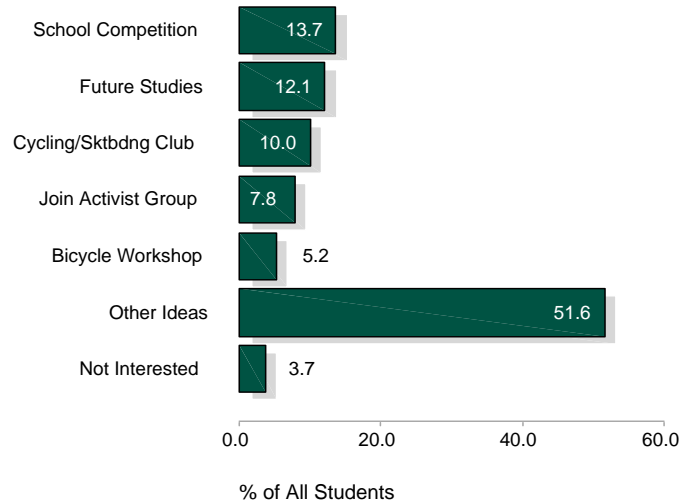
Figure 9 – Do You Like Your Present Mode of Transportation?



Respondents were asked if they would be interested in any activities related to how they or their friend get to school and around the region. Figure 10 indicates the proportion of students who expressed interest in each of the items listed.

Expressed interest in the specific items listed were not tremendously high, but participation in a competition with another school or participation in future survey or focus groups etc. seemed to be the most popular. Students were much

more likely to express their interest through another specific idea. These ideas included getting bus schedules out to more people, organizing carpooling groups and even roller blading. Most people who selected 'Other Ideas' from



the list did not in fact specify an idea.

Figure 10 – Interest in Transportation Related Activities

Additional Comments

Approximately one in seven students offered additional comments. At least 40% of these comments pertained to public transit; specifically issues with transit cited earlier were reiterated: lack of availability, lengthy bus trips etc.; others mentioned that schedules should be made available to students and that the cost of transit was prohibitive.

Other comments pertained to a variety of topics such as the following: some people called for more school buses in general, and to areas such as Thornhill

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for the Arts York students; others pointed out that people will not change their commuting habits if they don't benefit from the change themselves; some students raised concern over the crowded and chaotic nature of the parking lot and school grounds in the morning, adding that carpooling would help resolve this issue.

involved in alternative transportation activities and almost all students shared their own ideas and suggestions on alternative transportation.

Summary

Being driven to school and being dropped off is the most common mode of transportation followed by walking.

Two-thirds of students are interested in carpooling and about 9% already do so. The majority of Unionville students intend to obtain their driver's license before age 19, and half of them foresee having access to a car.

Students are most significantly deterred from walking or cycling to school by bad weather, weight of their back packs (books), distance and the offer of a more convenient ride.

Although 31% of students have taken the bus, less than 10% use transit regularly. The time needed for a bus trip, distance to bus stop, lack of schedule knowledge, and the perceived undesirability of buses are the most significant factors deterring the use of transit. Unionville Local (Route #40) and Highway 7 (Route #1) seem to be the most popular transit routes for Unionville High School students.

Over 80% of students are content with their transportation to school, and interest in various described transportation related activities is relatively low. However most students expressed an interest in generally being