

**New York City Department of Transportation  
Office of School Safety Engineering**



**School Safety Engineering Project**

**FINAL REPORT: Bobover Yeshiva Bnei Zion, Brooklyn**



Prepared by  
The RBA Group/Urbitran Associates



NOVEMBER 17, 2006

**School Safety Engineering Project**  
**Bobover Yeshiva Bnei Zion School, Brooklyn**

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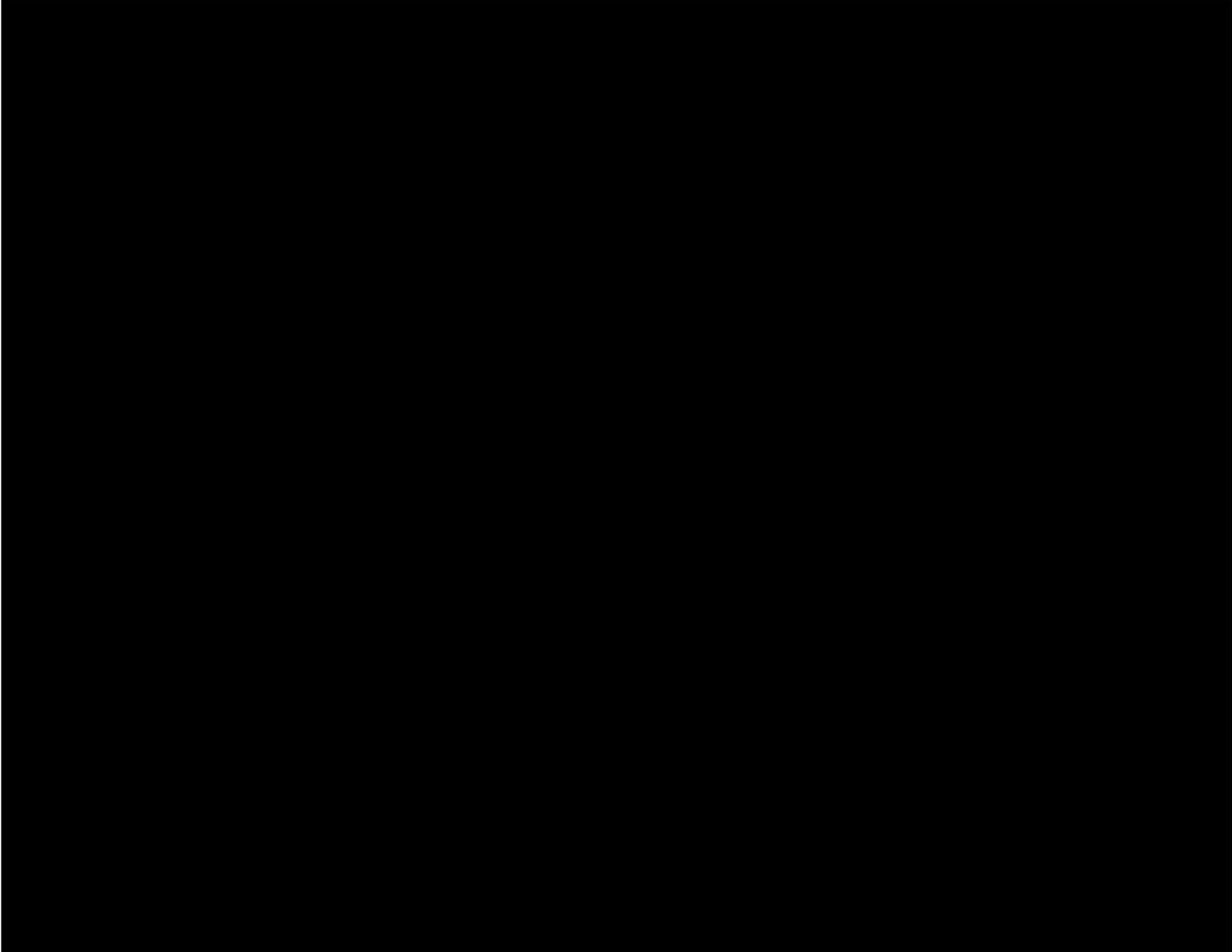
## **1. INTRODUCTION**

### **1.1 PROJECT DESCRIPTION**

The Department of Transportation has developed school safety maps for 1,471 schools throughout the City. Schools currently in the program are primarily elementary and intermediate schools with an enrollment of at least 250 students. The safety plans include the designation of official school crosswalks, identified by prominent warning signs and roadway markings. DOT also designates curbside locations for school bus loading and unloading and other parking controls to improve conditions for students. In addition, nearly 600 speed reducers (humps) have been installed in the immediate vicinity of schools.

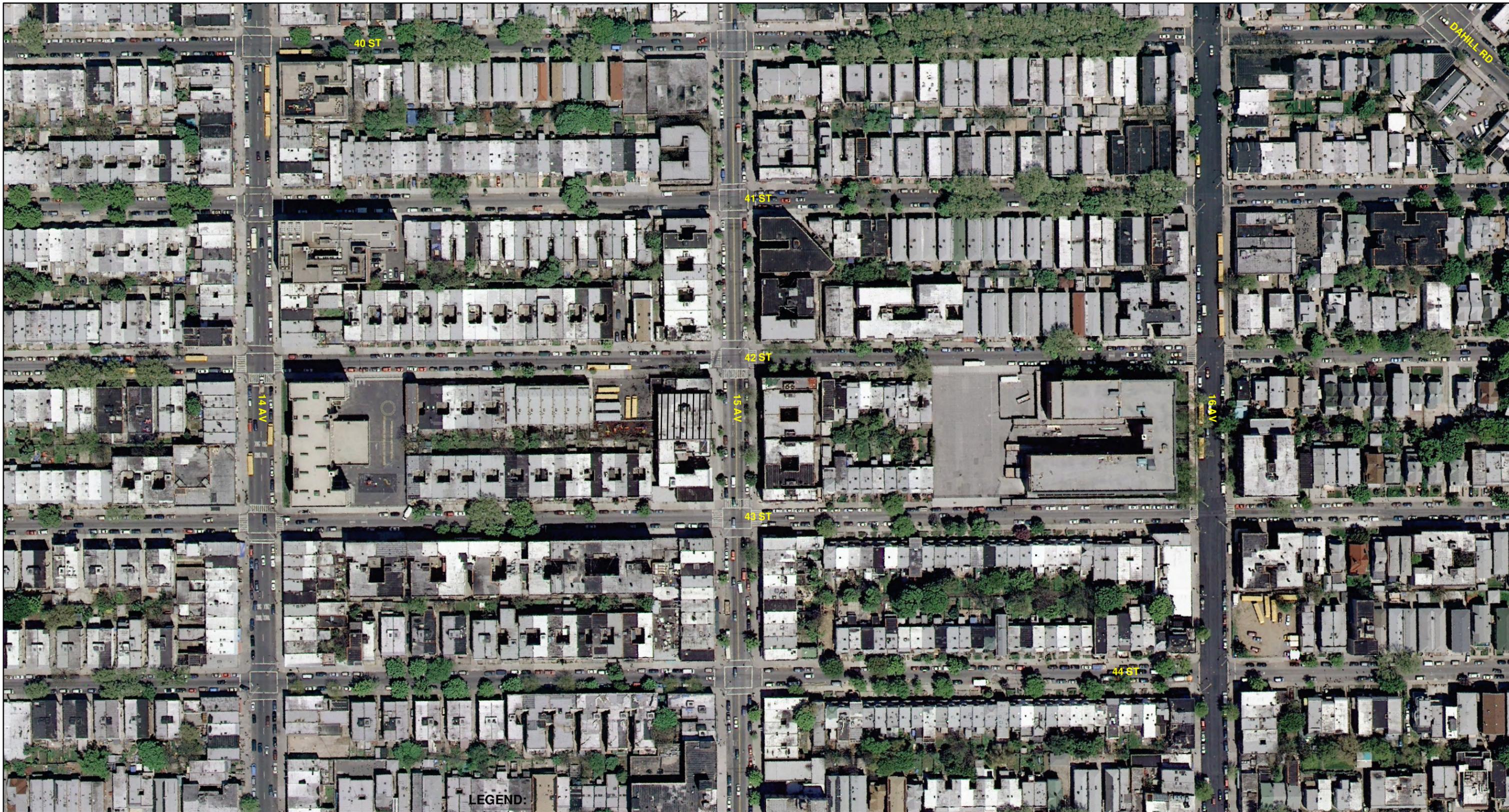
Under this consultant study, the School Safety Engineering Project, accident data in the vicinity of all program schools was reviewed. As a result, schools were ranked in terms of pedestrian safety, and 135 “priority” schools were identified Citywide. At each of these priority schools safety improvements are being recommended (e.g., new school crosswalks, new traffic signals and signal timing modifications, new speed reducers). In addition, 32 of these schools will receive further investigation to design physical improvements (e.g., raised center medians, widened sidewalks, “neckdowns” or “bulbouts” at intersections). Bobover Yeshiva Bnei Zion in Brooklyn is one of the 135 priority schools.

## **2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS**



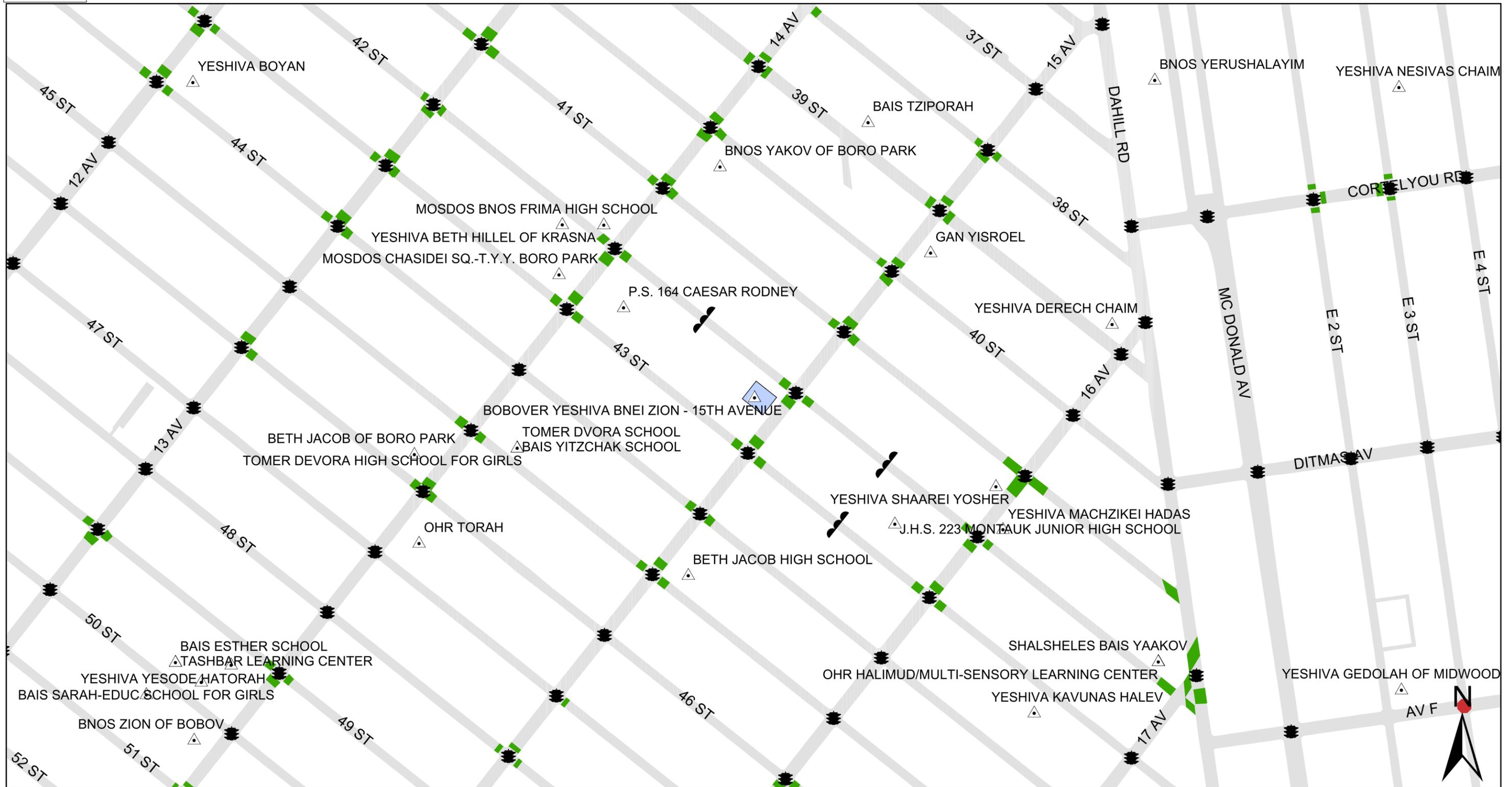
### **2.3 MEETING WITH THE SCHOOL**

School officials were contacted by the consultant team but were unable to meet to discuss school safety operations. The following review, analysis, and recommendations for the school are based on consultant observations of field conditions and data obtained for the area.



1 inch equals 150 feet

**EXHIBIT 1**  
**BOBOVER YESHIVA BNEI ZION**  
**BROOKLYN**  
**AERIAL PHOTOGRAPH**



The School Traffic Safety Map was established to help provide the maximum degree of safety for children going to and from school - by indicating the location of speed reducers, school crosswalks and some traffic control devices. (While virtually all intersections in NYC benefit from traffic control devices - such as stop signs, traffic signals, yield signs, and all way stop signs - this map shows only traffic signals and all way stop signs.) The school crosswalks that are shown are ladder striped and make the crosswalk more visible to drivers and help make the intersection safer. These crosswalks are where school children are recommended to cross.

Note: Every attempt has been made to provide complete and accurate information that is updated regularly. The City's streets are constantly changing and it is not always possible to present information without error.

**LEGEND:**

SCHOOL LOCATION	TRAFFIC SIGNAL
SCHOOL CROSSWALK	ALL - WAY STOP
	SPEED REDUCER

**HE 3 Brooklyn**  
**BOBOVER YESHIVA BNEI ZION - 15 AV**

Prepared by the NEW YORK CITY DEPARTMENT OF TRANSPORTATION, Iris Weinsahl, COMMISSIONER.

Map created on 11/16/2006

**EXHIBIT 2**

COMM. BOARD: 312  
PRECINCT: 66

1.5.1

### 3. TRAFFIC OPERATIONS

#### 3.1 SCHOOL BUS OPERATIONS

During the field visit it was observed that a number of buses were parked in the schoolyard (behind the school building) and on the street. According to parking regulations posted on the surrounding streets (see Section 3.2) school bus parking is provided on 15<sup>th</sup> Avenue and on 42<sup>nd</sup> Street.

#### 3.2 PARKING REGULATIONS

Parking regulation signs are posted as “NO STANDING, 7 AM - 5 PM, SCHOOL DAYS, EXCEPT SCHOOL BUSES” in front of the school on 15<sup>th</sup> Avenue and on 42<sup>nd</sup> Street. Exhibit 3 displays parking regulations in the vicinity of the school. Parking is prohibited on alternating sides of 15<sup>th</sup> Avenue from 9:30 am to 11:00 am Mondays, and 9:30 am to 11:00 am Thursdays, on both 42<sup>nd</sup> Street and 43<sup>rd</sup> Street.



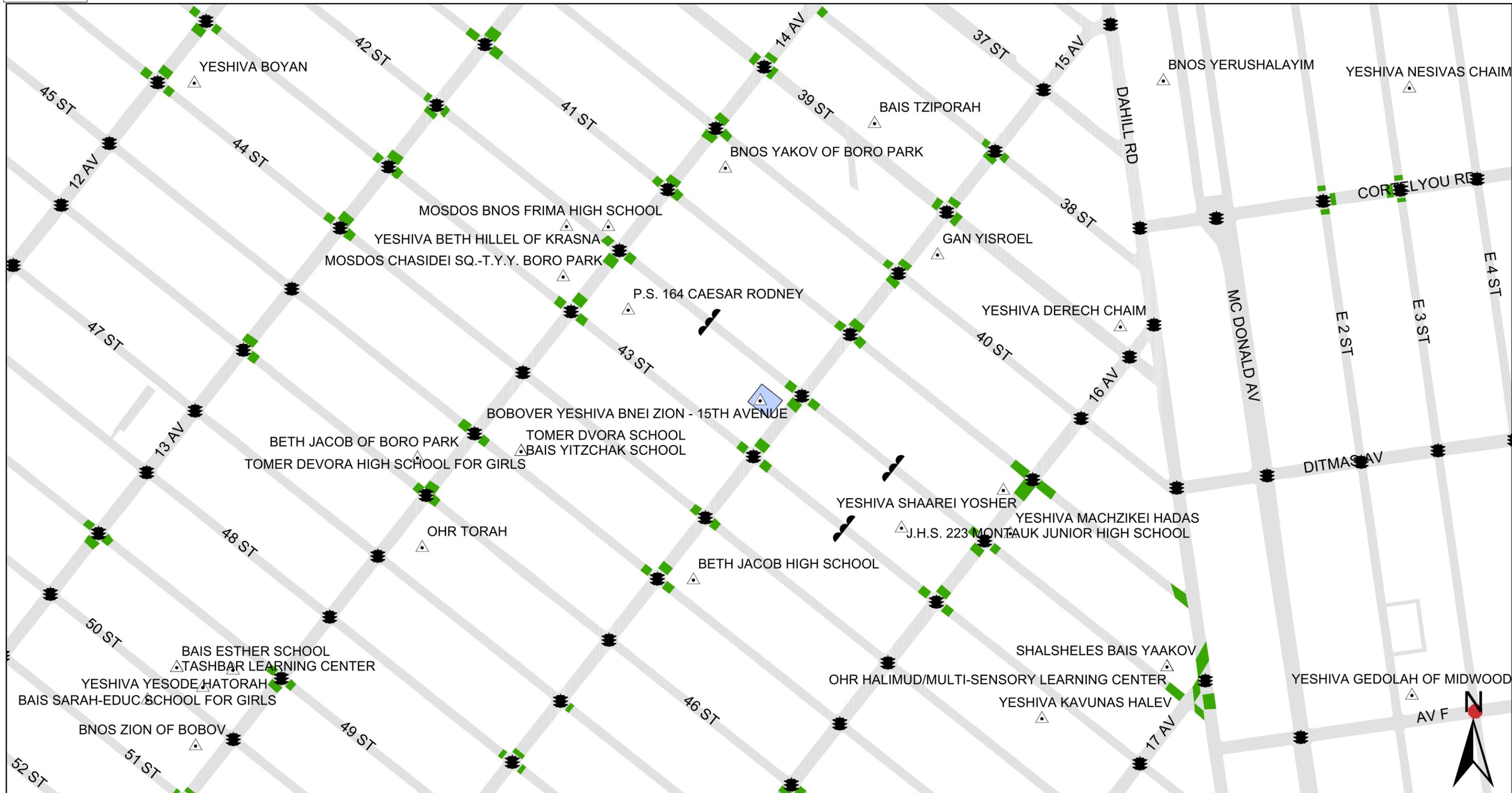
Figure 2: parking regulations on 42<sup>nd</sup> Street

#### 3.3 EXISTING SCHOOL SIGNS AND MARKINGS

The Traffic Safety Plan, Exhibit 2, indicates existing signals and school crosswalks. It is noted that a citywide signage program is currently underway to upgrade school signage to current Federal Manual of Uniform Traffic Control Devices (MUTCD) standards of fluorescent yellow-green signs with downward pointing arrows. Signs that are scheduled to be installed under this program are shown as “existing” on Exhibit 5.



# School Traffic Safety Map



The School Traffic Safety Map was established to help provide the maximum degree of safety for children going to and from school - by indicating the location of speed reducers, school crosswalks and some traffic control devices. (While virtually all intersections in NYC benefit from traffic control devices - such as stop signs, traffic signals, yield signs, and all way stop signs - this map shows only traffic signals and all way stop signs.) The school crosswalks that are shown are ladder striped and make the crosswalk more visible to drivers and help make the intersection safer. These crosswalks are where school children are recommended to cross.

Note: Every attempt has been made to provide complete and accurate information that is updated regularly. The City's streets are constantly changing and it is not always possible to present information without error.

**LEGEND:**

- SCHOOL LOCATION
- SCHOOL CROSSWALK
- TRAFFIC SIGNAL
- ALL - WAY STOP
- SPEED REDUCER

**HE 3 Brooklyn**  
**BOBOVER YESHIVA BNEI ZION - 15 AV**

Prepared by the NEW YORK CITY DEPARTMENT OF TRANSPORTATION, Iris Weinsahl, COMMISSIONER.

Map created on 11/16/2006

**EXHIBIT 3**

1.5.1

COMM. BOARD: 312  
 PRECINCT: 66

### 3.4 ACCIDENT SUMMARY

Exhibit 4 and Table 1 show a summary of accidents, as obtained from the New York State Department of Motor Vehicles (DMV), in the vicinity of Bobover Yeshiva Bnei Zion School for the three-year period from January 1, 1998 through December 31, 2000. The DMV data provides some detail relating to the circumstances and cause of the accidents. Table 2 is a summary of more recent accident data obtained from the NYC Police Department (NYPD). Though current through 2004, the NYPD data do not provide the same level of detail as the DMV data.

This report targets intersections closest to the school where the highest concentration of student pedestrians occurs. Intersections farther from the school and locations for which detailed data was not available at the time of this study will be addressed with the ongoing work of DOT’s School Safety Engineering Program. DMV accident data is discussed in Section 3.6, Traffic Operations and Issues.

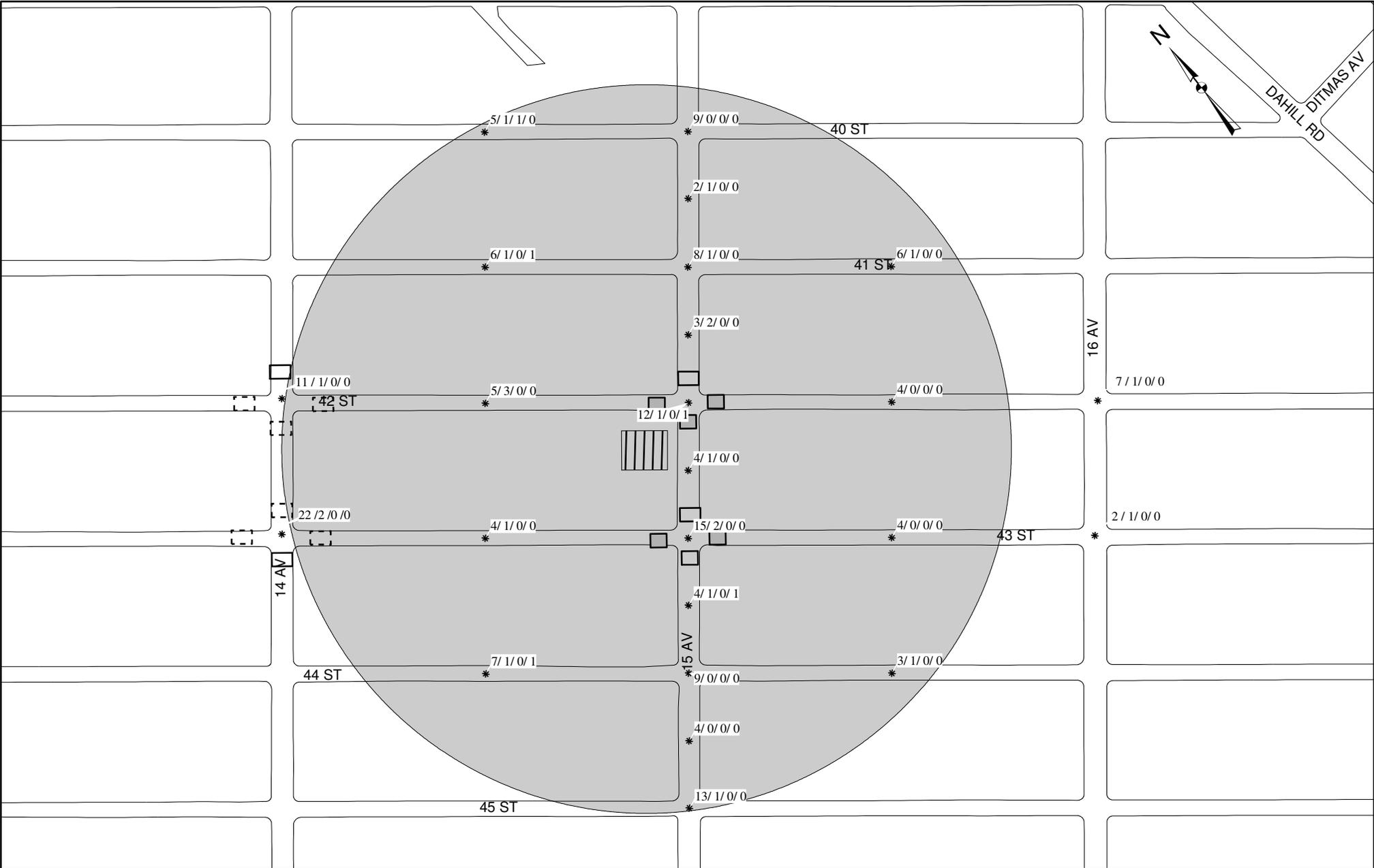
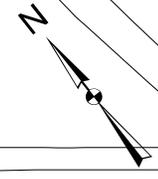
**TABLE 1: DMV THREE-YEAR ACCIDENT SUMMARY (1998-2000)**

<b>INTERSECTION</b>	<b>TOTAL ACCIDENTS</b>	<b>PEDESTRIAN ACCIDENTS</b>	<b>PEDESTRIAN FATALITIES</b>	<b>SCHOOL-RELATED* ACCIDENTS</b>
16 <sup>th</sup> Avenue and 42 <sup>nd</sup> Street	7	1	0	0
16 <sup>th</sup> Avenue and 43 <sup>rd</sup> Street	2	1	0	0
15 <sup>th</sup> Avenue and 42 <sup>nd</sup> Street	12	1	0	1
15 <sup>th</sup> Avenue and 43 <sup>rd</sup> Street	15	2	0	0
14 <sup>th</sup> Avenue and 42 <sup>nd</sup> Street	11	1	0	0
14 <sup>th</sup> Avenue and 43 <sup>rd</sup> Street	22	2	0	0
<b>TOTAL</b>	<b>64</b>	<b>8</b>	<b>0</b>	<b>1</b>

**TABLE 2: NYPD FOUR-YEAR ACCIDENT SUMMARY (2001-2004)**

<b>INTERSECTION</b>	<b>TOTAL ACCIDENTS</b>	<b>PEDESTRIAN ACCIDENTS</b>	<b>PEDESTRIAN FATALITIES</b>	<b>SCHOOL-RELATED* ACCIDENTS</b>
16 <sup>th</sup> Avenue and 42 <sup>nd</sup> Street	21	2	0	1
16 <sup>th</sup> Avenue and 43 <sup>rd</sup> Street	16	2	0	1
15 <sup>th</sup> Avenue and 42 <sup>nd</sup> Street	13	2	0	0
15 <sup>th</sup> Avenue and 43 <sup>rd</sup> Street	23	3	0	1
14 <sup>th</sup> Avenue and 42 <sup>nd</sup> Street	20	1	0	0
14 <sup>th</sup> Avenue and 43 <sup>rd</sup> Street	28	1	0	1
<b>TOTAL</b>	<b>121</b>	<b>11</b>	<b>0</b>	<b>4</b>

\* School-Related Accidents are defined as accidents involving school-age pedestrians (age 4 – 14), occurring weekdays during the school year.



ACCIDENT LOCATION \* 1 inch equals 250 feet

SCHOOL CROSSWALK ASSIGNED TO BOBOVER YESHIVA B. NAI ZION

SCHOOL CROSSWALK ASSIGNED TO ANOTHER SCHOOL

CROSSWALK

TOTAL ACCIDENTS	PED ACCIDENTS	PED FATAL	SCHOOL_PED ACCIDENTS
X	X	X	X

**EXHIBIT 4**  
**BOBOVER YESHIVA BNEI ZION**  
**BROOKLYN**  
**ACCIDENT SUMMARY**  
**THREE YEAR PERIOD**  
**(1998-2000)**

### **3.5 TRAFFIC OPERATIONS AND ISSUES**

The following describes traffic accidents and operational issues at intersections in the vicinity of Boover Yeshiva Bnei Zion School.

#### **3.5.1 14<sup>th</sup> Avenue and 43<sup>rd</sup> Street**

This is a signalized intersection. 14<sup>th</sup> Avenue is a 40-foot wide, one-way street with two travel lanes and parking on both sides of the street. 43<sup>rd</sup> Street is a 30-foot wide one-way street (westbound) with one travel lane and parking on both sides. There are school crosswalks on the east, west and north legs of the intersection.

Twenty-two accidents occurred at this intersection, during the 1998-2000 study period. Two pedestrians were struck during this time. According to the accident data, one pedestrian was struck while crossing with the signal at the crosswalk. This accident was attributed to driver error. The second pedestrian was struck while crossing against the signal.

Spot speed study was conducted on January 5, 2006 at this intersection. The objective of the study was to determine if vehicles speeds on 43<sup>rd</sup> Street are a contributing factor to pedestrian safety. The study showed that vehicles were not exceeding the legal speed limit on 43<sup>rd</sup> Street during the study period. The speed study results are shown in Table 3 and in the Appendix.

#### **3.5.2 14<sup>th</sup> Avenue and 42<sup>nd</sup> Street**

This intersection is also a signalized intersection abutting P.S. 164. 42<sup>nd</sup> Street is a 30-foot wide, one-way street (eastbound) with one travel lane and parking on both sides. There are school crosswalks on the east, west and south legs of the intersection.

Eleven accidents occurred at this intersection during the 1998-2000 study period. There was one pedestrian accident during this time. This pedestrian was crossing with the signal when struck by a vehicle which was making an illegal U-turn.



*Figure 3: 14<sup>th</sup> Avenue and 42<sup>nd</sup> Street intersection (looking north)*

### 3.5.3 15<sup>th</sup> Avenue and 42<sup>nd</sup> Street

This is a signalized intersection with school crosswalks on the east, west and south legs. 15<sup>th</sup> Avenue is a 40-foot wide, two-way street with one travel lane in each direction and parking on both sides.

Twelve accidents occurred at this location between 1998 and 2000. One accident involved a pedestrian, and was school related. According to the accident data, the pedestrian was crossing with the signal at the crosswalk when struck by a southbound vehicle, which was turning improperly.

Spot speed study was conducted on July 12, 2005 at this intersection. The objective of the study was to determine if vehicles speeds on 15<sup>th</sup> Avenue are a contributing factor to pedestrian safety. The study showed that vehicles were not exceeding the legal speed limit on 15<sup>th</sup> Avenue during the study period. The speed study results are shown in Table 3 and in the Appendix.



*Figure 4: 15<sup>th</sup> Avenue and 42<sup>nd</sup> Street (looking west)*

### 3.5.4 15<sup>th</sup> Avenue and 43<sup>rd</sup> Street

This is a signalized intersection with school crosswalks on the east, north and west legs.

According to the accident data, 15 accidents occurred at this intersection in the three-year period between 1998 and 2000. Two pedestrians were struck during this period. According to the accident data, one pedestrian was crossing with the signal when struck by a southbound vehicle. The accident was attributed to driver error. The second accident was attributed to pedestrian error, with the pedestrian crossing against the signal.



*Figure 5: 15<sup>th</sup> Avenue and 43<sup>rd</sup> Street (looking west)*

### 3.5.5 16<sup>th</sup> Avenue and 42<sup>nd</sup> Street

16<sup>th</sup> Avenue is a 40-foot wide, two-way street with one travel lane in each direction and parking on both sides of the street.

P.S. 223 is located at the northwest corner of the intersection. Also, Yeshiva Shaarei Yosher School is located to the east of the intersection, between 42<sup>nd</sup> Street and 41<sup>st</sup> Street. There are school crosswalks on the west, east and south legs of the intersection.

Seven accidents occurred at this intersection during the 1998-2000-study period. One accident involved a pedestrian. According to the accident data this accident was attributed to driver error due to inattention and disobeying traffic control devices.



*Figure 6: 16<sup>th</sup> Avenue and 42<sup>nd</sup> Street (looking west)*

### 3.5.6 16<sup>th</sup> Avenue and 43<sup>rd</sup> Street

This is a signalized intersection and is located between P.S. 223 and Yeshiva Ben Hillel School. 16<sup>th</sup> Avenue is a bus route for the B23 route with two bus stops located at the intersection of 16<sup>th</sup> Avenue and 43<sup>rd</sup> Street.



*Figure 7: 16<sup>th</sup> Avenue and 43<sup>rd</sup> Street (looking south)*

Two accidents occurred at this intersection during the 1998-2000 study period. One pedestrian was struck during this time while crossing against the signal.

<b>TABLE 3: SPOT SPEED STUDIES</b>		
<b>LOCATION</b>	<b>MEDIAN SPEED (MPH)</b>	<b>85TH PERCENTILE SPEED (MPH)</b>
15 <sup>th</sup> Avenue between 42 <sup>nd</sup> Street and 43 <sup>rd</sup> Street	25	29
43 <sup>rd</sup> Street between 14 <sup>th</sup> Avenue and 15 <sup>th</sup> Avenue	23	28

### 3.6 SIGNAL TIMING: PEDESTRIAN PHASE

Pedestrian crossing time was field verified at all signalized intersections in the vicinity of Bobover Yeshiva Bnei Zion School, and found to be adequate for a child pedestrian walking rate of three feet per second in all directions and approaches.

<b>TABLE 4: PEDESTRIAN CROSSING TIME AT SIGNALIZED INTERSECTIONS</b>				
Intersection Name	Crosswalk Length (Feet)	Ped. Phase Actual (Seconds)	Ped. Phase Req'd (Seconds)	Timing Adjustment? (Yes/No)
<b>14<sup>th</sup> Avenue and 42<sup>nd</sup> Street</b>				
crossing 14 <sup>th</sup> Avenue	40	25	17	NO
crossing 42 <sup>nd</sup> Street	30	25	13	NO
<b>14<sup>th</sup> Avenue and 43<sup>rd</sup> Street</b>				
crossing 14 <sup>th</sup> Avenue	40	25	17	NO
crossing 43 <sup>rd</sup> Street	30	25	13	NO
<b>15<sup>th</sup> Avenue and 43<sup>rd</sup> Street</b>				
crossing 15 <sup>th</sup> Avenue	40	18	17	NO
crossing 43 <sup>rd</sup> Street	30	32	13	NO
<b>15<sup>th</sup> Avenue and 43<sup>rd</sup> Street</b>				
crossing 15 <sup>th</sup> Avenue	40	18	17	NO
crossing 43 <sup>rd</sup> Street	30	32	13	NO
<b>16<sup>th</sup> Avenue and 43<sup>rd</sup> Street</b>				
crossing 16 <sup>th</sup> Avenue	40	20	17	NO
crossing 43 <sup>rd</sup> Street	30	30	13	NO
<b>16<sup>th</sup> Avenue and 43<sup>rd</sup> Street</b>				
crossing 16 <sup>th</sup> Avenue	40	20	17	NO
crossing 43 <sup>rd</sup> Street	30	30	13	NO

*Note – A rate of 3 ft/sec plus 3 seconds reaction time was utilized as the child pedestrian walking rate*

### 3.7 PHYSICAL CONDITIONS (ROADWAYS AND SIDEWALKS)

The roadways and sidewalks in the vicinity of the school were observed to be in good condition.



*Figure 8: Sidewalk on 15<sup>th</sup> Avenue in front of BoboverYeshiva (looking south)*

#### **4. POTENTIAL MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY**

This section describes potential countermeasures. Recommendations are divided into short-term and long-term measures. Short-term measures are those that potentially can be performed in-house, long term measures are proposed capital improvements.

##### **4.1 SHORT-TERM MEASURES**

- Administer student pedestrian safety education program

It is recommended that the NYCDOT Safety Education Program work with the school to educate the students on pedestrian safety, including crossing the street with the WALK phase, and the meaning of WALK - FLASHING DON'T WALK - DON'T WALK pedestrian signal sequence.

- Place stop bars ten feet in advance of school crosswalks.

The MUTCD and New York City DOT standard for placement of a stop bar is four feet in advance of a marked crosswalk. At signalized (or stop controlled) crosswalks, the vehicle stop line can be placed farther back from the crosswalk in order to maximize visibility of pedestrians and to minimize the potential for pedestrian/vehicle conflicts. Therefore, it is recommended that stop bars be placed ten feet in advance of all school crosswalks.

- Install new school crosswalks

Providing new school crosswalks at the following intersections will complete a network of contiguous school crosswalks in the immediate school vicinity. Therefore, it is recommended that school crosswalks be installed at these intersections:

- 44<sup>th</sup> Street and 15<sup>th</sup> Avenue (west leg)
- 41<sup>st</sup> Street and 15<sup>th</sup> Avenue (west leg)
- 45<sup>th</sup> Street and 15<sup>th</sup> Avenue (west leg)

- Install a speed reducers (humps) on various streets in the vicinity of the school

A Spot speed study was conducted on July 12, 2005 at the following location:

- 42<sup>nd</sup> Street between 15<sup>th</sup> Avenue and 14<sup>th</sup> Avenue between 1:00-2:00 pm

In addition, speed studies were conducted on January 5, 2006 at the following locations:

- 42<sup>nd</sup> Street between 15<sup>th</sup> Avenue and 16<sup>th</sup> Avenue between 9:30-9:15 am
- 43<sup>rd</sup> Street between 15<sup>th</sup> Avenue and 16<sup>th</sup> Avenue between 10:15-11:00 am

The objective of the studies was to determine if there is a speeding problem on these roadways. The speed study results are shown in Table 5 and in the Appendix.

<b>TABLE 5: SPOT SPEED STUDIES</b>		
<b>LOCATION</b>	<b>MEDIAN SPEED (MPH)</b>	<b>85TH PERCENTILE SPEED (MPH)</b>
42 <sup>nd</sup> Street between 14 <sup>th</sup> Avenue and 15 <sup>th</sup> Avenue	27	32
42 <sup>nd</sup> Street between 15 <sup>th</sup> Avenue and 16 <sup>th</sup> Avenue	26	31
43 <sup>rd</sup> Street between 15 <sup>th</sup> Avenue and 16 <sup>th</sup> Avenue	27	31

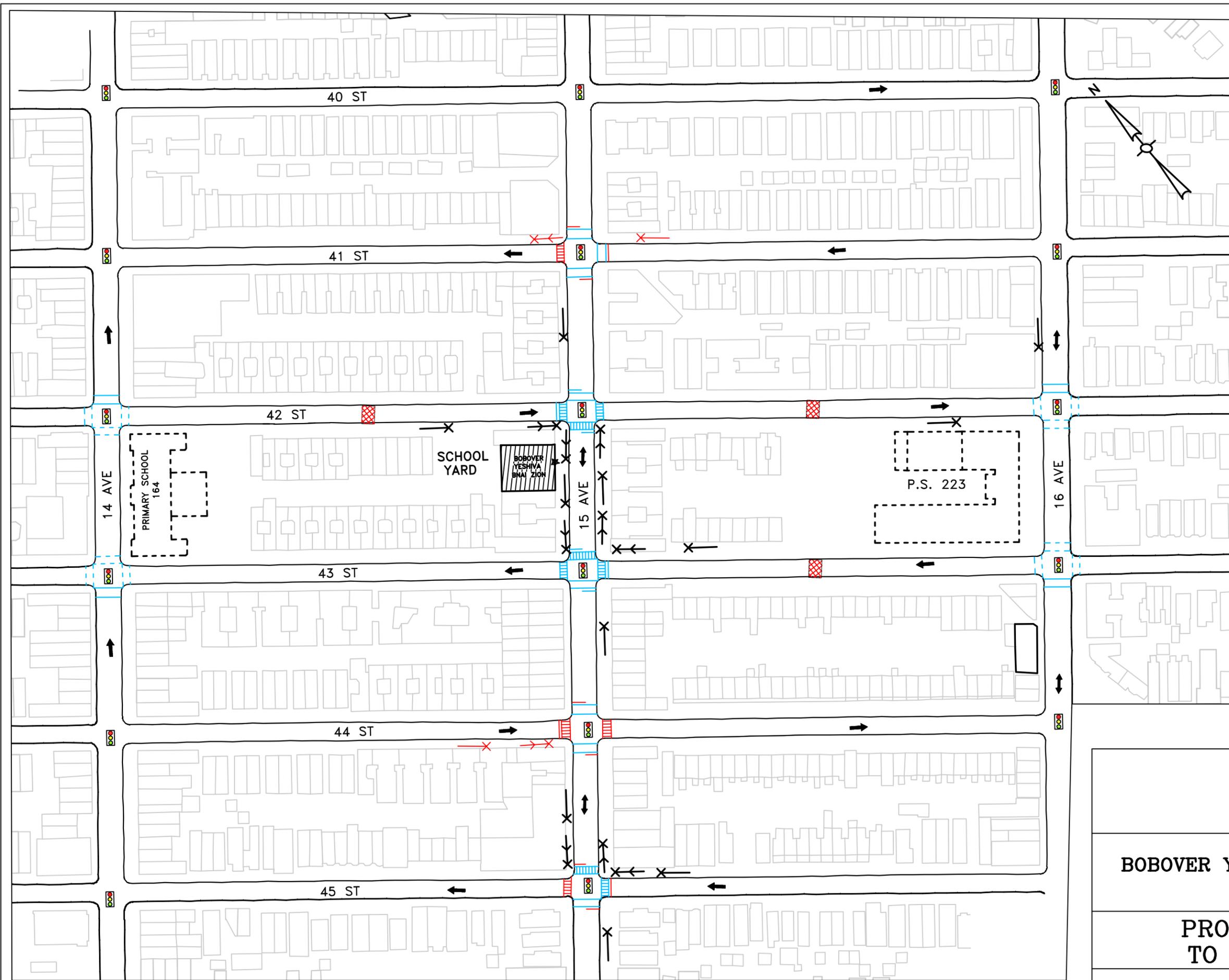
Speed reducers are recommended at all three locations where the 85<sup>th</sup> percentile speed exceeds the legal speed limit of 30 mph:

- 42<sup>nd</sup> Street between 15<sup>th</sup> Avenue and 14<sup>th</sup> Avenue
- 42<sup>nd</sup> Street between 15<sup>th</sup> Avenue and 16<sup>th</sup> Avenue
- 43<sup>rd</sup> Street between 15<sup>th</sup> Avenue and 16<sup>th</sup> Avenue

*(It is noted that at time of report release, NYCDOT had installed these recommended speed reducers.)*

## **4.2 LONG-TERM MEASURES**

All recommendations for improving pedestrian safety in the vicinity of the school will be implemented as short-term measures.



**LEGEND**

- ★ MAIN ENTRANCE
- OTHER ENTRANCES
- X EXISTING ADVANCE WARNING SIGN WITH ARROW
- X EXISTING ADVANCE WARNING SIGN
- ↔ EXISTING TRAVEL DIRECTION
- 🚦 SIGNALIZED INTERSECTION
- ▬ EXISTING SCHOOL CROSSWALK
- ▬ EXISTING STANDARD (NON-SCHOOL) CROSSWALK
- - - EXISTING SCHOOL CROSSWALK ASSOC. WITH OTHER SCHOOL
- PROPOSED STOP LINE
- ▬ PROPOSED SCHOOL CROSSWALK
- X PROPOSED ADVANCE WARNING SIGN WITH ARROW
- X PROPOSED ADVANCE WARNING SIGN
- ▨ PROPOSED SPEED REDUCER (HUMP)

SCALE: 1" : 200'

**EXHIBIT 5**

**BOBOVER YESHIVA BNEI ZION SCHOOL  
BROOKLYN**

**PROPOSED MEASURES  
TO IMPROVE SAFETY**

# APPENDIX

## SPOT SPEED STUDY

Date: **July 12, 2005**                      Time: **01:00 pm - 02:00 pm**  
 Location: **42nd Street btw. 15th Avenue and 14th Avenue**  
 Surveyor: **The RBA Group**

School: **Bobover Yeshiva**  
 Direction: **East-West**  
 Comments: **Clear and Dry**

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS <sup>2</sup>
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	0	0.0%	0.0%	0	0
16	1	1.6%	1.6%	16	256
17	2	3.2%	4.8%	34	578
18	0	0.0%	4.8%	0	0
19	1	1.6%	6.5%	19	361
20	0	0.0%	6.5%	0	0
21	0	0.0%	6.5%	0	0
22	3	4.8%	11.3%	66	1452
23	4	6.5%	17.7%	92	2116
24	8	12.9%	30.6%	192	4608
25	7	11.3%	41.9%	175	4375
26	14	22.6%	64.5%	364	9464
27	0	0.0%	64.5%	0	0
28	0	0.0%	64.5%	0	0
29	7	11.3%	75.8%	203	5887
30	7	11.3%	87.1%	210	6300
31	0	0.0%	87.1%	0	0
32	0	0.0%	87.1%	0	0
33	1	1.6%	88.7%	33	1089
34	0	0.0%	88.7%	0	0
35	3	4.8%	93.5%	105	3675
36	0	0.0%	93.5%	0	0
37	1	1.6%	95.2%	37	1369
38	2	3.2%	98.4%	76	2888
39	0	0.0%	98.4%	0	0
40	0	0.0%	98.4%	0	0
41	1	1.6%	100.0%	41	1681
42	0	0.0%	100.0%	0	0
43	0	0.0%	100.0%	0	0
44	0	0.0%	100.0%	0	0
45	0	0.0%	100.0%	0	0
46	0	0.0%	100.0%	0	0
47	0	0.0%	100.0%	0	0
48	0	0.0%	100.0%	0	0
49	0	0.0%	100.0%	0	0
50	0	0.0%	100.0%	0	0
51	0	0.0%	100.0%	0	0
52	0	0.0%	100.0%	0	0
53	0	0.0%	100.0%	0	0
54	0	0.0%	100.0%	0	0
55	0	0.0%	100.0%	0	0
56	0	0.0%	100.0%	0	0
	62	100.0%		1663	46099

Mean Speed = 26.8 mph                      Median Speed = 26.8 mph  
 Standard Deviation = 4.9 mph              15th Percentile Speed = 21.7 mph  
 Margin of Error (95% Confidence) = ± 1.2 mph      85th Percentile Speed = 32.0 mph

# SPOT SPEED STUDY

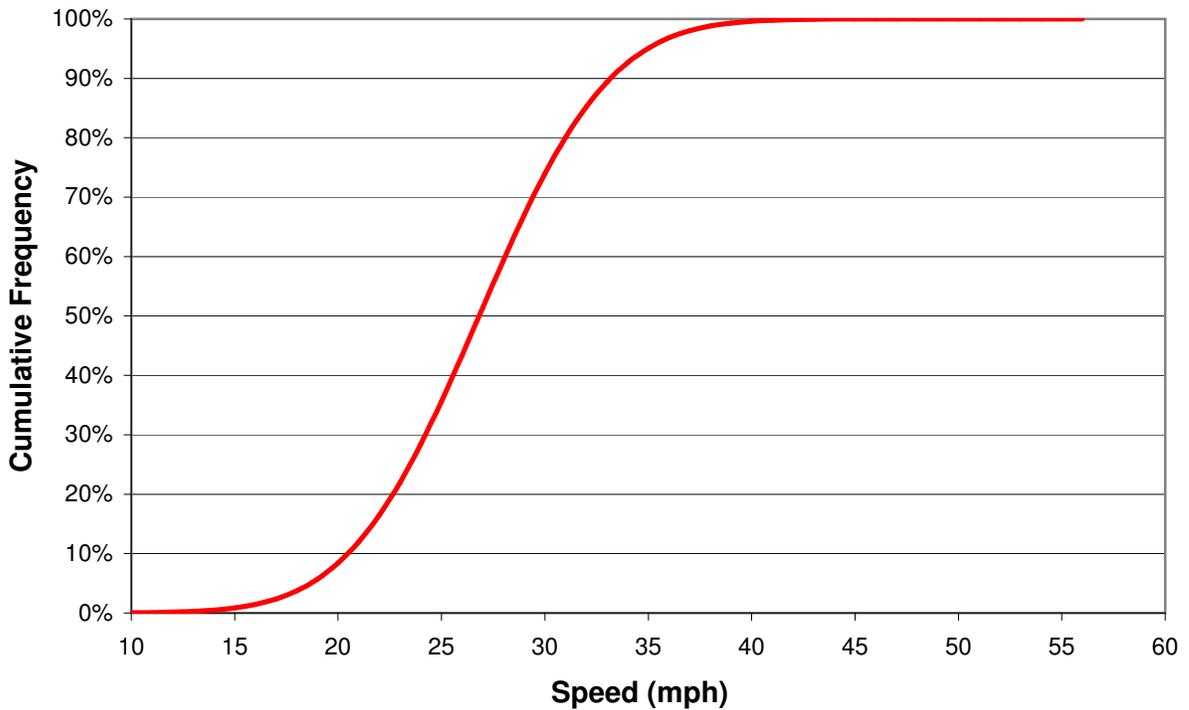
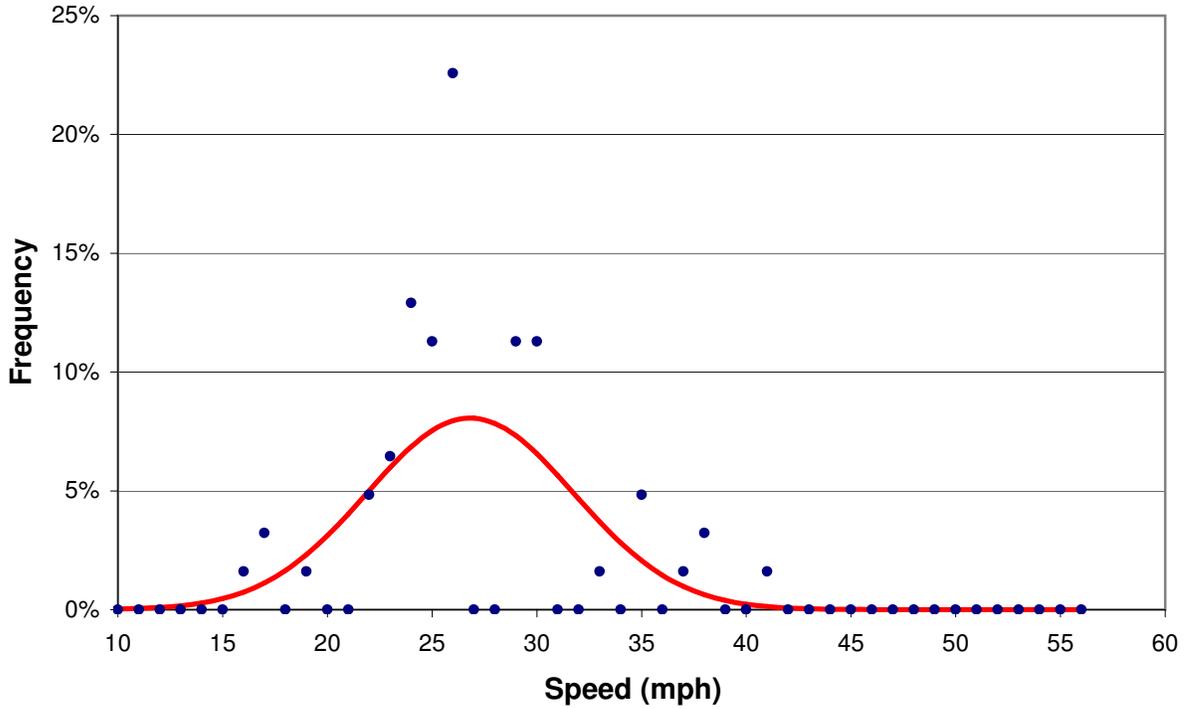
Date: July 12, 2005  
Location: 42nd Street btw. 15th Avenue and 14th Avenue  
Surveyor: The RBA Group

Time: 01:00 pm - 02:00 pm

School: Bobover Yeshiva  
Direction: East-West  
Comments: Clear and Dry

Mean Speed = 26.8 mph  
Standard Deviation = 4.9 mph  
Margin of Error (95% Confidence) =  $\pm 1.2$  mph

Median Speed = 26.8 mph  
15th Percentile Speed = 21.7 mph  
85th Percentile Speed = 32.0 mph



## SPOT SPEED STUDY

Date: **January 5, 2006**  
 Location: **42nd Street btw. 15th Avenue and 16th Avenue**  
 Surveyor: **The RBA Group**

Time: **09:30 am - 10:45 am**

School: **Bobover Yeshiva**  
 Direction: **East-West**  
 Comments: **Clear and Dry**

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS <sup>2</sup>
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	0	0.0%	0.0%	0	0
16	0	0.0%	0.0%	0	0
17	3	2.8%	2.8%	51	867
18	4	3.7%	6.5%	72	1296
19	6	5.6%	12.0%	114	2166
20	4	3.7%	15.7%	80	1600
21	3	2.8%	18.5%	63	1323
22	8	7.4%	25.9%	176	3872
23	16	14.8%	40.7%	368	8464
24	9	8.3%	49.1%	216	5184
25	8	7.4%	56.5%	200	5000
26	9	8.3%	64.8%	234	6084
27	12	11.1%	75.9%	324	8748
28	3	2.8%	78.7%	84	2352
29	4	3.7%	82.4%	116	3364
30	2	1.9%	84.3%	60	1800
31	0	0.0%	84.3%	0	0
32	5	4.6%	88.9%	160	5120
33	2	1.9%	90.7%	66	2178
34	2	1.9%	92.6%	68	2312
35	1	0.9%	93.5%	35	1225
36	0	0.0%	93.5%	0	0
37	2	1.9%	95.4%	74	2738
38	1	0.9%	96.3%	38	1444
39	2	1.9%	98.1%	78	3042
40	1	0.9%	99.1%	40	1600
41	0	0.0%	99.1%	0	0
42	0	0.0%	99.1%	0	0
43	1	0.9%	100.0%	43	1849
44	0	0.0%	100.0%	0	0
45	0	0.0%	100.0%	0	0
46	0	0.0%	100.0%	0	0
47	0	0.0%	100.0%	0	0
48	0	0.0%	100.0%	0	0
49	0	0.0%	100.0%	0	0
50	0	0.0%	100.0%	0	0
51	0	0.0%	100.0%	0	0
52	0	0.0%	100.0%	0	0
53	0	0.0%	100.0%	0	0
54	0	0.0%	100.0%	0	0
55	0	0.0%	100.0%	0	0
56	0	0.0%	100.0%	0	0
	108	100.0%		2760	73628

Mean Speed = 25.6 mph  
 Standard Deviation = 5.4 mph  
 Margin of Error (95% Confidence) = ± 1.0 mph

Median Speed = 25.6 mph  
 15th Percentile Speed = 20.0 mph  
 85th Percentile Speed = 31.1 mph

# SPOT SPEED STUDY

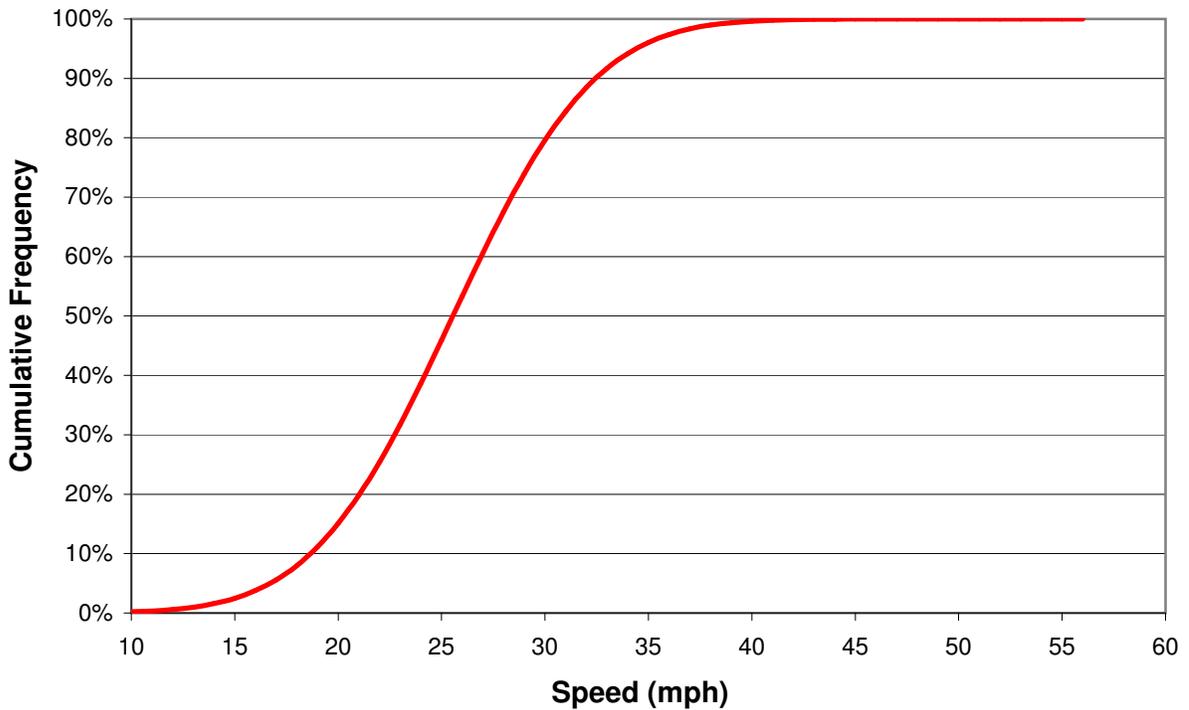
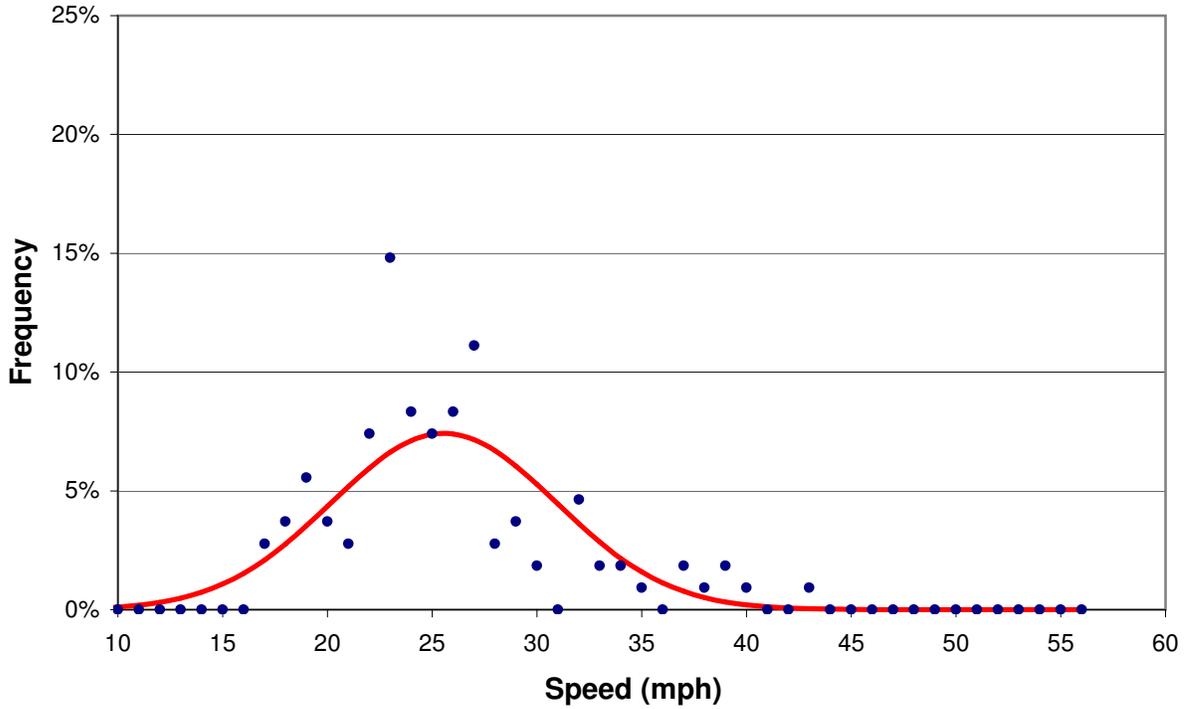
Date: **January 5, 2006**  
Location: **42nd Street btw. 15th Avenue and 16th Avenue**  
Surveyor: **The RBA Group**

Time: **09:30 am - 10:45 am**

School: **Bobover Yeshiva**  
Direction: **East-West**  
Comments: **Clear and Dry**

Mean Speed = 25.6 mph  
Standard Deviation = 5.4 mph  
Margin of Error (95% Confidence) =  $\pm 1.0$  mph

Median Speed = 25.6 mph  
15th Percentile Speed = 20.0 mph  
85th Percentile Speed = 31.1 mph



## SPOT SPEED STUDY

Date: **January 4, 2006**  
 Location: **43rd Street btw. 15th Avenue and 14th Avenue**  
 Surveyor: **The RBA Group**

Time: **08:30 am - 09:30 am**

School: **Bobover Yeshiva**  
 Direction: **East-West**  
 Comments: **Clear and Dry**

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS <sup>2</sup>
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	3	4.6%	4.6%	45	675
16	1	1.5%	6.2%	16	256
17	3	4.6%	10.8%	51	867
18	2	3.1%	13.8%	36	648
19	1	1.5%	15.4%	19	361
20	6	9.2%	24.6%	120	2400
21	4	6.2%	30.8%	84	1764
22	6	9.2%	40.0%	132	2904
23	4	6.2%	46.2%	92	2116
24	7	10.8%	56.9%	168	4032
25	11	16.9%	73.8%	275	6875
26	6	9.2%	83.1%	156	4056
27	3	4.6%	87.7%	81	2187
28	0	0.0%	87.7%	0	0
29	1	1.5%	89.2%	29	841
30	4	6.2%	95.4%	120	3600
31	3	4.6%	100.0%	93	2883
32	0	0.0%	100.0%	0	0
33	0	0.0%	100.0%	0	0
34	0	0.0%	100.0%	0	0
35	0	0.0%	100.0%	0	0
36	0	0.0%	100.0%	0	0
37	0	0.0%	100.0%	0	0
38	0	0.0%	100.0%	0	0
39	0	0.0%	100.0%	0	0
40	0	0.0%	100.0%	0	0
41	0	0.0%	100.0%	0	0
42	0	0.0%	100.0%	0	0
43	0	0.0%	100.0%	0	0
44	0	0.0%	100.0%	0	0
45	0	0.0%	100.0%	0	0
46	0	0.0%	100.0%	0	0
47	0	0.0%	100.0%	0	0
48	0	0.0%	100.0%	0	0
49	0	0.0%	100.0%	0	0
50	0	0.0%	100.0%	0	0
51	0	0.0%	100.0%	0	0
52	0	0.0%	100.0%	0	0
53	0	0.0%	100.0%	0	0
54	0	0.0%	100.0%	0	0
55	0	0.0%	100.0%	0	0
56	0	0.0%	100.0%	0	0
	65	100.0%		1517	36465

Mean Speed = 23.3 mph  
 Standard Deviation = 4.1 mph  
 Margin of Error (95% Confidence) = ± 1.0 mph

Median Speed = 23.3 mph  
 15th Percentile Speed = 19.1 mph  
 85th Percentile Speed = 27.6 mph

# SPOT SPEED STUDY

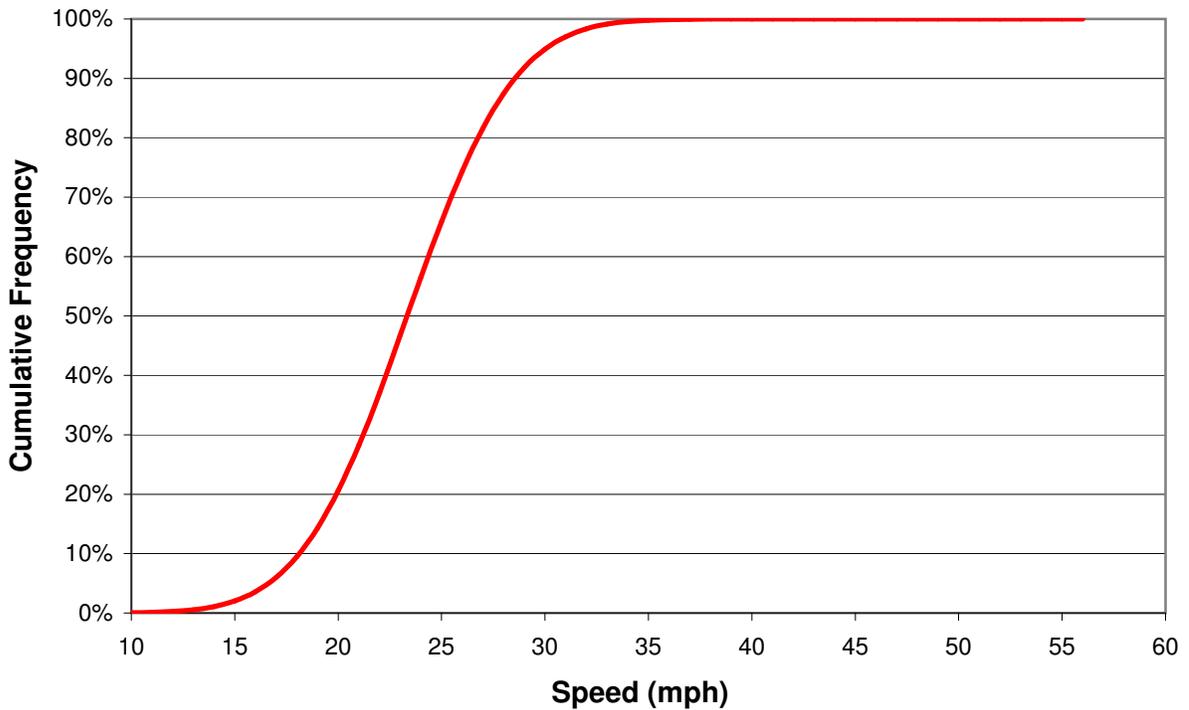
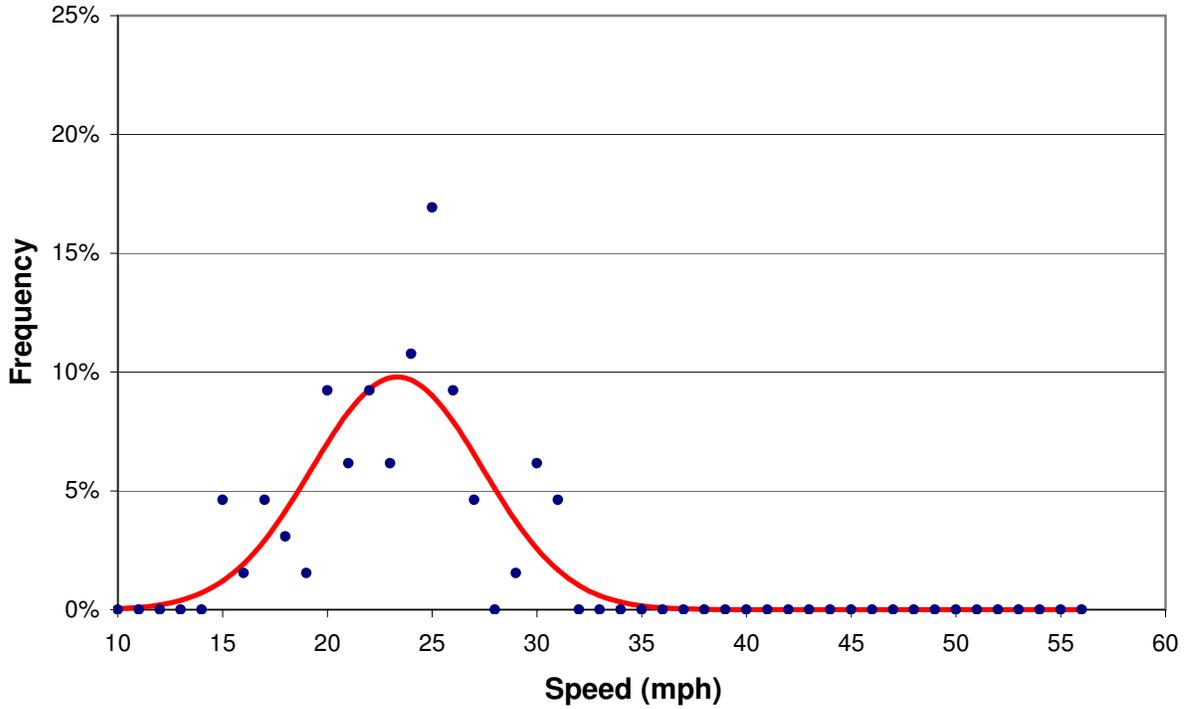
Date: **January 4, 2006**  
Location: **43rd Street btw. 15th Avenue and 14th Avenue**  
Surveyor: **The RBA Group**

Time: **08:30 am - 09:30 am**

School: **Bobover Yeshiva**  
Direction: **East-West**  
Comments: **Clear and Dry**

Mean Speed = 23.3 mph  
Standard Deviation = 4.1 mph  
Margin of Error (95% Confidence) =  $\pm 1.0$  mph

Median Speed = 23.3 mph  
15th Percentile Speed = 19.1 mph  
85th Percentile Speed = 27.6 mph



## SPOT SPEED STUDY

Date: **January 5, 2006**  
 Location: **43rd Street btw. 15th Avenue and 16th Avenue**  
 Surveyor: **The RBA Group**

Time: **10:15 am - 11:00 am**

School: **Bobover Yeshiva**  
 Direction: **East-West**  
 Comments: **Clear and Dry**

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS <sup>2</sup>
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	0	0.0%	0.0%	0	0
16	0	0.0%	0.0%	0	0
17	0	0.0%	0.0%	0	0
18	0	0.0%	0.0%	0	0
19	2	1.9%	1.9%	38	722
20	1	1.0%	2.9%	20	400
21	7	6.7%	9.6%	147	3087
22	6	5.8%	15.4%	132	2904
23	12	11.5%	26.9%	276	6348
24	6	5.8%	32.7%	144	3456
25	6	5.8%	38.5%	150	3750
26	9	8.7%	47.1%	234	6084
27	9	8.7%	55.8%	243	6561
28	12	11.5%	67.3%	336	9408
29	6	5.8%	73.1%	174	5046
30	8	7.7%	80.8%	240	7200
31	4	3.8%	84.6%	124	3844
32	3	2.9%	87.5%	96	3072
33	6	5.8%	93.3%	198	6534
34	4	3.8%	97.1%	136	4624
35	2	1.9%	99.0%	70	2450
36	1	1.0%	100.0%	36	1296
37	0	0.0%	100.0%	0	0
38	0	0.0%	100.0%	0	0
39	0	0.0%	100.0%	0	0
40	0	0.0%	100.0%	0	0
41	0	0.0%	100.0%	0	0
42	0	0.0%	100.0%	0	0
43	0	0.0%	100.0%	0	0
44	0	0.0%	100.0%	0	0
45	0	0.0%	100.0%	0	0
46	0	0.0%	100.0%	0	0
47	0	0.0%	100.0%	0	0
48	0	0.0%	100.0%	0	0
49	0	0.0%	100.0%	0	0
50	0	0.0%	100.0%	0	0
51	0	0.0%	100.0%	0	0
52	0	0.0%	100.0%	0	0
53	0	0.0%	100.0%	0	0
54	0	0.0%	100.0%	0	0
55	0	0.0%	100.0%	0	0
56	0	0.0%	100.0%	0	0
	104	100.0%		2794	76786

Mean Speed = 26.9 mph  
 Standard Deviation = 4.1 mph  
 Margin of Error (95% Confidence) = ± 0.8 mph

Median Speed = 26.9 mph  
 15th Percentile Speed = 22.6 mph  
 85th Percentile Speed = 31.1 mph

# SPOT SPEED STUDY

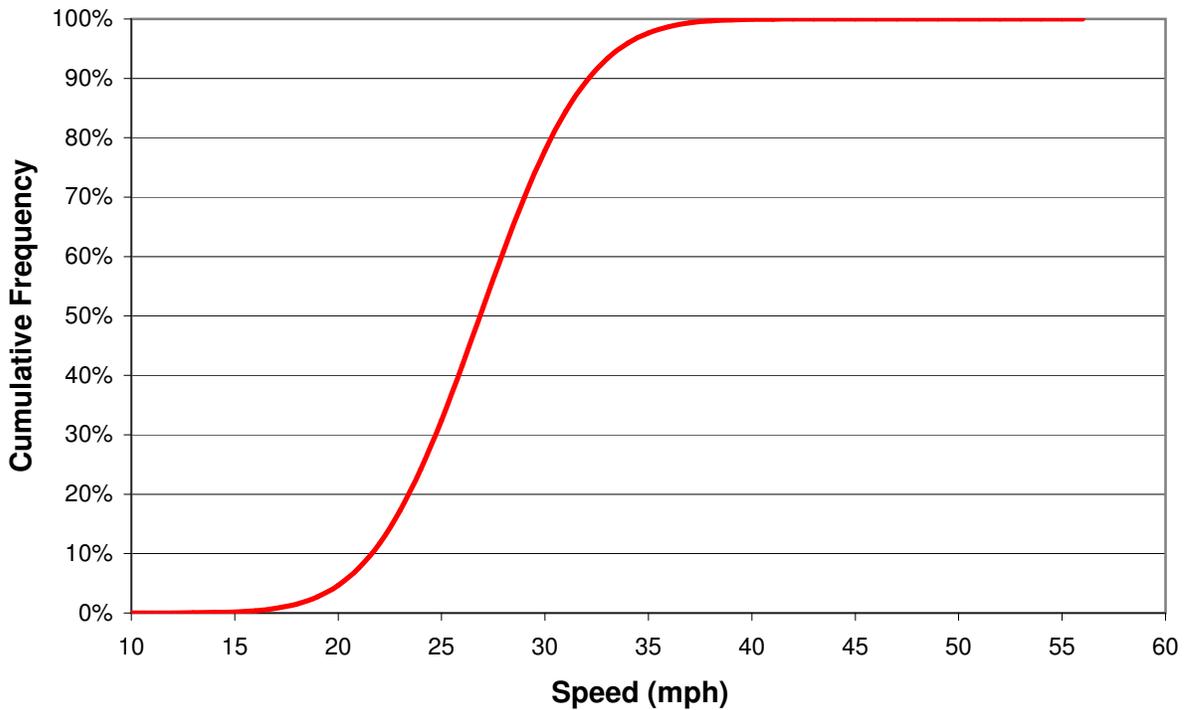
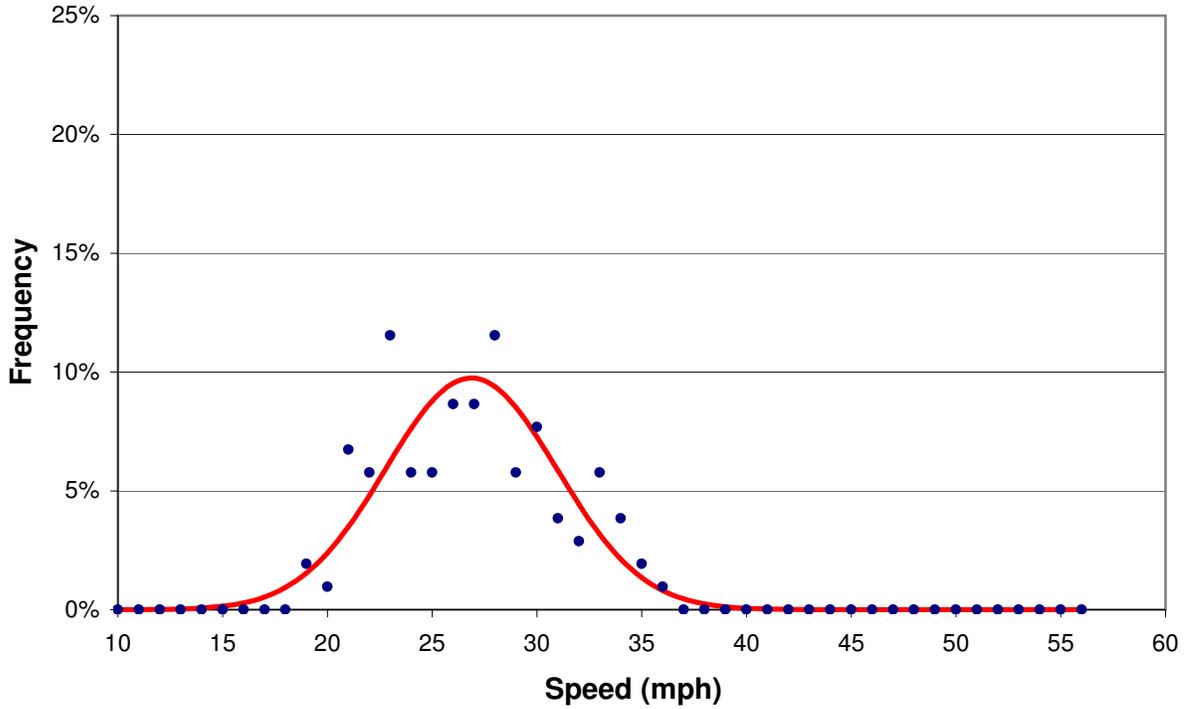
Date: **January 5, 2006**  
Location: **43rd Street btw. 15th Avenue and 16th Avenue**  
Surveyor: **The RBA Group**

Time: **10:15 am - 11:00 am**

School: **Bobover Yeshiva**  
Direction: **East-West**  
Comments: **Clear and Dry**

Mean Speed = 26.9 mph  
Standard Deviation = 4.1 mph  
Margin of Error (95% Confidence) =  $\pm 0.8$  mph

Median Speed = 26.9 mph  
15th Percentile Speed = 22.6 mph  
85th Percentile Speed = 31.1 mph



## SPOT SPEED STUDY

Date: **July 13, 2005**  
 Location: **15th avenue btw. 42nd and 43 Street**  
 Surveyor: **The RBA Group**

Time: **12:00 am - 01:00 pm**

School: **Bobover Yeshiva**  
 Direction: **East-West**  
 Comments:

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS <sup>2</sup>
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	0	0.0%	0.0%	0	0
16	0	0.0%	0.0%	0	0
17	2	4.1%	4.1%	34	578
18	3	6.1%	10.2%	54	972
19	1	2.0%	12.2%	19	361
20	3	6.1%	18.4%	60	1200
21	3	6.1%	24.5%	63	1323
22	4	8.2%	32.7%	88	1936
23	5	10.2%	42.9%	115	2645
24	5	10.2%	53.1%	120	2880
25	3	6.1%	59.2%	75	1875
26	2	4.1%	63.3%	52	1352
27	4	8.2%	71.4%	108	2916
28	1	2.0%	73.5%	28	784
29	6	12.2%	85.7%	174	5046
30	4	8.2%	93.9%	120	3600
31	3	6.1%	100.0%	93	2883
32	0	0.0%	100.0%	0	0
33	0	0.0%	100.0%	0	0
34	0	0.0%	100.0%	0	0
35	0	0.0%	100.0%	0	0
36	0	0.0%	100.0%	0	0
37	0	0.0%	100.0%	0	0
38	0	0.0%	100.0%	0	0
39	0	0.0%	100.0%	0	0
40	0	0.0%	100.0%	0	0
41	0	0.0%	100.0%	0	0
42	0	0.0%	100.0%	0	0
43	0	0.0%	100.0%	0	0
44	0	0.0%	100.0%	0	0
45	0	0.0%	100.0%	0	0
46	0	0.0%	100.0%	0	0
47	0	0.0%	100.0%	0	0
48	0	0.0%	100.0%	0	0
49	0	0.0%	100.0%	0	0
50	0	0.0%	100.0%	0	0
51	0	0.0%	100.0%	0	0
52	0	0.0%	100.0%	0	0
53	0	0.0%	100.0%	0	0
54	0	0.0%	100.0%	0	0
55	0	0.0%	100.0%	0	0
56	0	0.0%	100.0%	0	0
	49	100.0%		1203	30351

Mean Speed = 24.6 mph  
 Standard Deviation = 4.1 mph  
 Margin of Error (95% Confidence) = ± 1.2 mph

Median Speed = 24.6 mph  
 15th Percentile Speed = 20.3 mph  
 85th Percentile Speed = 28.8 mph

# SPOT SPEED STUDY

Date: July 13, 2005  
Location: 15th avenue btw. 42nd and 43 Street  
Surveyor: The RBA Group

Time: 12:00 am - 01:00 pm

School: Bobover Yeshiva  
Direction: East-West  
Comments:

Mean Speed = 24.6 mph  
Standard Deviation = 4.1 mph  
Margin of Error (95% Confidence) =  $\pm 1.2$  mph

Median Speed = 24.6 mph  
15th Percentile Speed = 20.3 mph  
85th Percentile Speed = 28.8 mph

