

## **COMMITTEE OF THE WHOLE - JUNE 21, 2004**

### **COLLISIONS AT SIGNALIZED AND UNSIGNALIZED INTERSECTIONS**

#### **Recommendation**

The Commissioner of Engineering and Public Works recommends:

1. That the following report be received for information, and;
2. That York Region Police be requested to provide more frequent enforcement of the speed limit and ensure better compliance with the existing traffic signals or all-way stop control at the following intersections:
  - Ansley Grove Road/Embassy Drive/Blue Willow Drive;
  - Kipling Avenue/Woodbridge Avenue;
  - Millway Avenue/Applewood Crescent (North);
  - New Westminster Drive/Conley Street;
  - Ansley Grove Road/Misty Meadow Drive.

#### **Purpose**

This collision summary, the fifth in an annual series, represents a comprehensive review of collision rates at the City's signalized and major unsignalized intersections.

#### **Background - Analysis and Options**

##### **Collision Reporting**

Collision data were collected and/or updated at the City's 54 signalized intersections and 21 unsignalized intersections selected by staff throughout the City. The data were based on the collision reports received from York Region Police and do not include unreported collisions. A vehicle collision is reportable when any of the following conditions apply:

- Property damage is in excess of \$1,000.00;
- The collision resulted in a personal injury;
- Charges are laid as a result of the collision; or,
- A government vehicle is involved.

It must be recognized that collision reports are generally prepared to document incident, to assign fault and to identify driver error as opposed to documenting collision factors such as geometric design, traffic control operations, roadside environment or driver behaviour.

##### **Collision Rate Determination**

Collision rates are considered a better measure of collision risk than the absolute number of collisions at an intersection. A collision rate takes into account the volume of traffic that travels through an intersection each day. For example, 5 collisions in a year at an intersection with 2,000 cars entering it each day is generally more notable than the same number of collisions occurring at an intersection with 15,000 cars entering it each day. Collision rates at intersections are measured in "collisions per million vehicles entering" (collisions/mve), or the average number of collisions for every one million vehicles that pass through the intersection.

$$\text{Collision rate} = \frac{\text{number of collisions/year} \times 1,000,000}{24 \text{ hour entering volume} \times 365 \text{ days}}$$

The 24 hour traffic volume entering an intersection was determined from 8 hour turning movement counts conducted by staff. The daily traffic volume was estimated by doubling the 8 hour counts, since the 24 hour volume is typically twice the volume in the peak 8 hours of the day.

An intersection is generally considered critical when the collision rate exceeds 1.5 collisions/mve, or where a fatal collision has occurred in the past year. Most jurisdictions use these criteria as a “trigger” for further review.

#### Collisions at Signalized Intersections

Collisions were reviewed at the City’s 54 signalized intersections, listed as follows and illustrated on Attachment No. 1:

Aberdeen Avenue/Chancellor Drive  
Aberdeen Avenue/Embassy Drive  
Ansley Grove Road/Chancellor Drive  
Ansley Grove Road/Belview Avenue/Aberdeen Avenue  
Ansley Grove Road/Embassy Drive/Blue Willow Drive  
Ansley Grove Road/Windflower Gate/Pinedale Crescent  
Atkinson Avenue/Arnold Avenue  
Atkinson Avenue/Campbell Avenue/Manor Gate  
Atkinson Avenue/Rosedale Heights Drive (North)  
Atkinson Avenue/Rosedale Heights/Edmund Seager Drive  
Atkinson Avenue/Spring Gate Boulevard  
Centre Street/Atkinson Avenue  
Clark Avenue/Atkinson Avenue  
Clark Avenue/Brownridge Drive/Joseph Aaron Boulevard  
Clark Avenue/Charles Street  
Clark Avenue/Condo Corporation (West of Yonge Street)  
Clark Avenue/Coulter’s Mill Plaza (East)  
Clark Avenue/Dufferin-Clark C.C. Access/Plaza Access  
Clark Avenue/Hilda Avenue  
Clark Avenue/Judith Avenue/Stonemill Gate  
Clark Avenue/New Westminster Drive  
Clark Avenue/South Promenade  
Clark Avenue/York Hill Boulevard (West)  
Clark Avenue/York Hill Boulevard/Springfield Way  
Creditstone Road/Langstaff Road  
Chrislea Road/Jevlan Drive  
Edgeley Boulevard/Applewood Crescent (North)  
Hilda Avenue/Crestwood Road  
Hilda Avenue/York Hill Boulevard  
Kipling Avenue/Woodbridge Avenue  
Langstaff Road/Vaughan Mills Road  
Martin Grove Road/Andrew Park/Auburn Road  
Martin Grove Road/Langstaff Road  
Martin Grove Road/Roysun Road  
Martin Grove Road/Woodbridge Avenue  
Martin Grove Road/Woodstream Blvd/Regina Road  
McNaughton Road/Cranston Park Drive  
McNaughton Road/St. Joan of Arc Avenue  
Melville Avenue/Avro Road  
Melville Avenue/Springside Road  
Millway Avenue/Applewood Crescent (North)  
Millway Avenue/Pennsylvania Avenue

New Westminster Drive/Beverly Glen Boulevard  
 New Westminster Drive/Brownridge Drive/W. Promenade  
 New Westminster Drive/Conley Street  
 New Westminster Drive/Mullen Drive/Joseph Aaron Blvd.  
 Rivermede Road/Bowes Road  
 Rivermede Road/North Rivermede Road  
 Rowntree Dairy Road/Strada Drive  
 Rowntree Dairy Road/Winges Road/Auto Park Circle  
 Whitmore Road/Winges Road/Trowers Road  
 Woodbridge Avenue/Clarence Street  
 Woodbridge Avenue/Forest Drive/Lewis Drive  
 York Hill Boulevard/Chabad Gate

Attachment No. 2 includes a four-year summary of collisions at the City's signalized intersections. A summary of collision rates at four of these intersections between January 1 and December 31, 2003, in descending order of collision rate is provided below.

<u>Intersection</u>	<u>2003 Collision Rate</u>
Ansley Grove Road/Embassy Drive/Blue Willow Drive	1.93
Millway Avenue/Applewood Crescent (North)	1.54
New Westminster Drive/Conley Street	1.12
Kipling Avenue/Woodbridge Avenue	1.03

These locations experienced the highest collisions rates among the City's signalized intersections during 2003. Staff examined the collision reports in order to identify any trends in the type of collision, road condition, time of day, vehicle type, driver action and pedestrian/cyclist involvement.

*Ansley Grove Road/Embassy Drive/Blue Willow Drive*

The signalized Ansley Grove Road/Embassy Drive/Blue Willow Drive intersection is located within a residential area in Woodbridge. There were ten collisions reported in 2003, compared to three in 2002, for a collision rate of 1.93 collisions/mve. Of the ten collisions, five were angle collisions, four were rear-end collisions and one was a sideswipe collision. There were a total of four charges laid by York Region Police – three careless driving charges, and one failure to yield the right-of-way.

One of the angle collisions resulted in a fatality involving an eastbound left-turning car and westbound motorcycle. Staff have verified that the signals are appropriately located and sized for this type of intersection. High speed was likely a contributing factor in these collisions. Accordingly, it is recommended that York Region Police be requested to provide more frequent enforcement of the speed limit in the vicinity of the intersection as well as compliance with the traffic signals.

Staff received a complaint from an area resident in October 2003 requesting increased pedestrian crossing times. Staff reviewed the timings and found the pedestrian crossing time met with City of Vaughan requirements.

*Millway Avenue/Applewood Crescent (North)*

The signalized Millway Avenue/Applewood Crescent (North) intersection is located within an industrial area in Concord. There were five collisions reported in 2003, compared to one in 2002, for a collision rate of 1.54 collisions/mve. Of the five collisions, four were angle collisions and one was a rear-end collision. There were a total of two charges laid by York Regional Police – one for failure to stop for a red signal, and one for failure to yield the right-of-way.

Staff have verified that the signals are appropriately located and sized for this type of intersection. No complaints have been received regarding the signal timing. High speed was likely a contributing factor in these collisions. Accordingly, it is recommended that York Region Police be requested to provide more frequent enforcement of the speed limit in the vicinity of the intersection as well as ensure better compliance with the traffic signals.

*New Westminster Drive/Conley Street*

The signalized New Westminster Drive/Conley Street intersection is located within a residential area in Thornhill. There were eight collisions reported in 2003, compared to four in 2002, for a collision rate of 1.12 collisions/mve. Of the eight collisions, five were angle collisions and three were rear-end collisions. There were a total of seven charges laid by York Regional Police – three for careless driving, and four for failure to yield the right-of-way.

Staff have verified that the signals are appropriately located and sized for this type of intersection. No complaints have been received regarding the signal timing. High speed was likely a contributing factor in these collisions. Accordingly, it is recommended that York Region Police be requested to provide more frequent enforcement of the speed limit in the vicinity of the intersection as well as ensure better compliance with the existing traffic signals.

*Kipling Avenue/Woodbridge Avenue*

The signalized Kipling Avenue/Woodbridge Avenue intersection is located within a residential area in Woodbridge. There were eight collisions reported in 2003, compared to four in 2002, for a collision rate of 1.03 collisions/mve. Of the eight collisions, seven were angle collisions and one was a rear-end collision. There were a total of four charges laid by York Regional Police – three for failure to yield the right-of-way, and one for failure to stop for a red signal.

Again, staff have verified that the signals are appropriately located and sized for this type of intersection, and no complaints have been received regarding the signal timing. High speed was likely a contributing factor in these collisions. Accordingly, it is recommended that York Region Police be requested to provide more frequent enforcement of the speed limit in the vicinity of the intersection as well as ensure better compliance with the traffic signals.

The four signalized intersections under review last year (Ansley Grove Road/Chancellor Drive, Martin Grove Road/Woodbridge Avenue, Edgeley Avenue/Applewood Crescent (north), and Clark Avenue /Condo Corp. (west of Yonge Street)) all experienced significantly lower collision rates in 2003 than in 2002 as shown below:

	<u>2002 Collision Rate</u>	<u>2003 Collision Rate</u>
Ansley Grove Road/Chancellor Drive	1.12	0.48
Martin Grove Road/Woodbridge Avenue	1.11	0.45
Edgeley Avenue/Applewood Crescent (north)	1.01	0.18
Clark Avenue/Condo Corp. (west of Yonge)	0.96	0.55

Collisions at Unsignalized Intersections

Collisions were also reviewed at the following 21 major unsignalized intersections, as illustrated in Attachment No. 3:

- Beverly Glen Boulevard/Worth Boulevard
- Confederation Parkway/Staffern Drive
- Cranston Park Avenue/Cunningham Drive
- Creditstone Road/Doughton Road

Creditstone Road/MacIntosh Boulevard  
 Creditstone Road/Pippin Road  
 Doughton Road/Maplecrete Road  
 Edgeley Boulevard/Cidermill Avenue  
 Edgeley Boulevard/Pennsylvania Avenue  
 Hilda Avenue/Pinewood Drive  
 Islington Avenue/Nashville Road  
 Jevlan Drive/Carlauren Road  
 Jevlan Drive/Roytec Road  
 Martin Grove Road/Forest Drive  
 Marycroft Avenue/Strada Drive  
 Melville Avenue/Cunningham Drive  
 Millway Avenue/Applewood Crescent (South)  
 Millway Avenue/Cidermill Avenue  
 Napa Valley Avenue/Forest Fountain Drive  
 Sonoma Boulevard/Forest Fountain Drive  
 Sonoma Boulevard/Monte Carlo Drive

Attachment No. 4 includes a four-year summary of collisions at the City's major unsignalized intersections. None of the locations experienced a collision rate higher than 0.48 collisions/mve.

The unsignalized intersection under review last year (Hilda Avenue and Pinewood Drive) experienced a significantly lower collision rate in 2003 than in 2002 as shown below:

	<u>2002 Collision Rate</u>	<u>2003 Collision Rate</u>
Hilda Avenue and Pinewood Drive	1.50	0.31

It should be noted that some of the collision numbers, and the resulting rates, reported on for previous years may have changed as more collision reports for those years are received by the City. The numbers listed in Attachments No. 2 and 4 reflect the latest data received to date by the Engineering Department.

Additionally, at its meeting on August 25, 2003 Council directed under the report titled Ansley Grove Traffic Accidents:

**“Councillor Di Vona recommends:**

- 2. Implement a reduction in the speed limit on Ansley Grove in the vicinity from Chancellor Drive to approximately Misty Meadow to 40 km from the existing 50 km speed limit as best determined by the City of Vaughan Engineering Department.**
- 3. Implement a ‘three way’ stop control at the corner of Ansley Grove and Misty Meadow Drive.**
- 6. The next annual collision report to measure the results of the above traffic control improvements.”**

The new all-way stop control at Ansley Grove Road/Misty Meadow Drive, as well as the new 40 km/h speed limit signs between Chancellor Drive and Misty Meadow Drive were installed in September 2003.

A review of the speeds on Ansley Grove Road and compliance with the new all-way stop control at Misty Meadow Drive was conducted on May 20<sup>th</sup> and May 25<sup>th</sup>, 2004 during AM and PM peak traffic periods. The results of the studies are summarized below:

DATE	TIME	LOCATION	DIRECTION	AVERAGE SPEED	85 <sup>th</sup> PERCENTILE SPEED
May 20, 2004	4:30-5:00 pm	North of Chancellor	Northbound	52 km/h	56 km/h
	4:30-5:00 pm	North of Chancellor	Southbound	52 km/h	58 km/h
May 26, 2004	8:00-8:30 am	North of Chancellor	Northbound	51 km/h	56 km/h
	8:00-8:30 am	North of Chancellor	Southbound	52 km/h	56 km/h

The average speeds on Ansley Grove Road north of Chancellor Drive range from 51 to 52 km/h indicating a low level of compliance with the existing 40 km/h speed limit. To determine whether speeding is a problem on a roadway during a particular time period, the 85<sup>th</sup> percentile speed of all vehicles passing during that the time period is typically regarded as the representative speed. The 85<sup>th</sup> percentile speed on Ansley Grove ranges from 56 to 58 km/h. Therefore, it is recommended that York Region Police be requested to provide strict and frequent enforcement of the speed limit at this location.

Site investigations were conducted at the intersection of Ansley Grove Road and Misty Meadow Drive on May 20<sup>th</sup> and May 25<sup>th</sup>, 2004 during AM and PM peak traffic periods to determine compliance with the all-way stop controls. The investigations revealed that 60% of drivers came to a full and complete stop, 33% of drivers slowed down to near 0 km/h before proceeding, and 7% of drivers entered the intersection without intending to stop. As a result of these findings, it is recommended that York Region Police be requested to take action as deemed necessary, regarding compliance with the existing all-way stop controls.

#### **Relationship to Vaughan Vision 2007**

This traffic study is consistent with Vaughan Vision 2007 which seeks to improve community safety through design, prevention, enforcement and education (1.1) through the review of the level of enforcement, compliance and monitoring of regulations relating to public safety (1.1.6).

This report is consistent with the priorities previously set by Council and the necessary resources have been allocated and approved.

#### **Conclusion**

Based on the 2003 collision review, two of the City's signalized intersections experienced a collision rate higher than 1.5 collisions/mve (Ansley Grove Road/Embassy Drive/Blue Willow Drive and Millway Avenue/Applewood Crescent (north)). This criteria is generally the trigger for further review. Additionally, two signalized intersections experienced a collision rate higher than 1.0 collisions/mve and were also marked for review (New Westminster Drive/Conley Street and Kipling Avenue/Woodbridge Avenue).

York Region Police should be requested to provide more frequent enforcement of the speed limit and ensure better compliance with the existing traffic signals in the vicinity of these intersections.

None of the major unsignalized intersections experienced a collision rate of 1.50 collisions/mve or higher in 2003. The highest collision rate experienced at an unsignalized intersection was 0.48 collisions/mve.

York Region Police should be requested to provide more frequent enforcement of the speed limit on Ansley Grove Road between Chancellor Drive and Misty Meadow Drive.

**Attachments**

1. Location Map of Signalized Intersections
2. Summary of Collisions at Signalized Intersections
3. Location Map of Major Unsignalized Intersections
4. Summary of Collisions at Major Unsignalized Intersections

**Report prepared by:**

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Mike Dokman, Acting Transportation Supervisor, ext. 8031

Respectfully submitted,

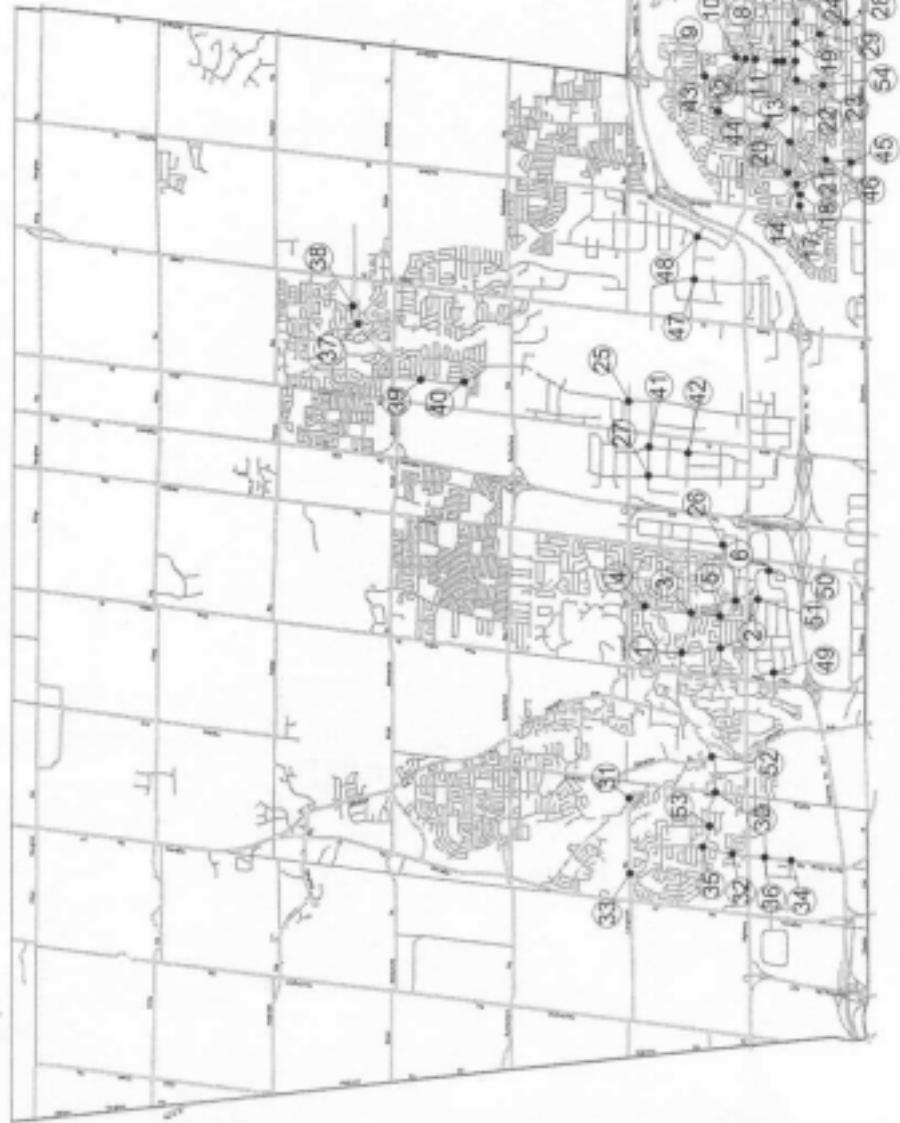
Bill Robinson, P. Eng.  
Commissioner of Engineering and Public Works

Michael Won, P. Eng.  
Director of Development/Transportation  
Engineering

MR/fc

# ATTACHMENT No. 1

## City of Vaughan - Collision Review 2004 Signalized Intersections



**Signalized Intersections**

1. Aberdeen Avenue/Chancellor Drive
2. Aberdeen Avenue/Embassy Drive
3. Anley Grove Road/Chancellor Drive
4. Anley Grove Road/Belview Avenue/Northern Avenue
5. Anley Grove Road/Embassy Drive/Blue Willow Drive
6. Anley Grove Road/Windflower Gate/Pineclay Crescent
7. Alderson Avenue/Arnold Avenue
8. Alderson Avenue/Cambell Avenue/Minor Gate
9. Alderson Avenue/Rosedale Heights Drive (North)
10. Alderson Avenue/Rosedale Heights Drive/Edmund Seager Drive
11. Alderson Avenue/Spring Gate Boulevard
12. Cedar Street/Walton Avenue
13. Clark Avenue/Alderson Avenue
14. Clark Avenue/Brownridge Drive/Joseph Aaron Boulevard
15. Clark Avenue/Charles Street
16. Clark Avenue/Condo Corporation (West of Yonge Street)
17. Clark Avenue/Coullers Mill Plaza (East)
18. Clark Avenue/D.C.C. Access/Plaza Access
19. Clark Avenue/Hills Avenue
20. Clark Avenue/Luth Avenue/Stonewall Gate
21. Clark Avenue/New Westminster Drive
22. Clark Avenue/South Promenade
23. Clark Avenue/Tork Hill Boulevard (West)
24. Clark Avenue/Tork Hill Boulevard/Springfield Way
25. Creditlane Road/Langstaff Road
26. Creditlane Road/Jenkin Drive
27. Edgely Boulevard/Applewood Crescent (North)
28. Hills Avenue/Crestwood Road
29. Hills Avenue/Tork Hill Boulevard
30. Kipling Avenue/Woodbridge Avenue
31. Langstaff Road/Hughes Mills Road
32. Martin Grove Road/Andrew Park/Lakem Road
33. Martin Grove Road/Langstaff Road
34. Martin Grove Road/Boysen Road
35. Martin Grove Road/Woodbridge Avenue
36. Martin Grove Road/Woodstream Boulevard/Rivina Road
37. McLaughlin Road/Carleton Park Drive
38. McLaughlin Road/Joan of Arc Avenue
39. Merrile Avenue/Burns Road
40. Merrile Avenue/Springfield Road
41. Milbrey Avenue/Applewood Crescent (North)
42. Milbrey Avenue/Perry/Walton Avenue
43. New Westminster Drive/Beverly Glen Boulevard
44. New Westminster Drive/Brownridge Drive/West Promenade
45. New Westminster Drive/Conley Street
46. New Westminster Drive/Mullen Drive/Joseph Aaron Boulevard
47. Rivermade Road/Bowles Road
48. Rivermade Road/North Rivermade Road
49. Rivermade Dairy Road/Strada Drive
50. Rivermade Dairy Road/Woods Road/Robbato Park Circle
51. Whitson Road/Highgate Road/Tremont Road
52. Woodbridge Avenue/Clarence Street
53. Woodbridge Avenue/Forest Drive/Levels Drive
54. York Hill Boulevard/Chabad Gate



**ATTACHMENT No.2**  
**City of Vaughan**  
**Collision Review 2004 - Major Signalized Intersections**

#	Intersection Location	Block	Activation Date	AADT	Collisions per Year				Collision Rate (collisions/mve)			
					2000	2001	2002	2003	2000	2001	2002	2003
1	Aberdeen Avenue/Chancellor Drive	B37	February-02	12300	3	2	4	0	0.73	0.49	0.98	0
2	Aberdeen Avenue/Embassy Drive	B37	February-02	8300	1	1	0	0	0.33	0.33	0	0
3	Ansley Grove Road/Chancellor Drive	B37	February-93	17200	3	3	7	3	0.48	0.48	1.12	0.48
4	Ansley Grove Road/Belview Avenue/Aberdeen Avenue	B37	February-01	15600	0	3	2	0	0	0.53	0.35	0
5	Ansley Grove Road/Embassy Drive/Blue Willow Drive	B37	August-96	14200	7	4	3	10	1.35	0.77	0.58	1.93
6	Ansley Grove Road/Windflower Gate/Pinedale Crescent	B37	March-95	21500	2	1	2	1	0.33	0.17	0.33	0.13
7	Atkinson Avenue/Arnold Avenue	B1	November-02	18000	5	7	2	0	0.95	1.33	0.38	0
8	Atkinson Avenue/Campbell Avenue/Manor Gate	B1	January-01	17300	3	4	0	1	0.48	0.63	0	0.16
9	Atkinson Avenue/Rosedale Heights Drive (North)	B2	November-02	16000	1	0	1	1	0.2	0	0.2	0.17
10	Atkinson Avenue/Rosedale Heights/Edmund Seager Drive	B2	January-01	14500	2	0	1	0	0.38	0	0.19	0
11	Atkinson Avenue/Spring Gate Boulevard	B1	August-94	16200	4	1	1	1	0.68	0.17	0.17	0.17
12	Centre Street/Atkinson Avenue	B1	August-86	29500	4	6	5	7	0.37	0.56	0.46	0.65
13	Clark Avenue/Atkinson Avenue	B1	August-86	34900	11	7	6	4	0.86	0.55	0.47	0.31
14	Clark Avenue/Brownridge Drive/Joseph Aaron Boulevard	B8	December-88	17400	4	1	3	2	0.63	0.16	0.47	0.31
15	Clark Avenue/Charles Street	B1	February-96	21600	2	5	6	2	0.25	0.63	0.76	0.25
16	Clark Avenue/Condo Corporation (West of Yonge Street)	B1	August-98	25100	11	7	10	5	1.06	0.68	0.96	0.55
17	Clark Avenue/Coulters Mill Plaza (East)	B8	March-92	17400	1	2	2	2	0.16	0.31	0.31	0.31
18	Clark Avenue/D.C.C. Access/Plaza Access	B8	November-02	18100	0	0	2	1	0	0	0.3	0.15
19	Clark Avenue/Hilda Avenue	B1	November-87	32100	2	7	2	3	0.17	0.6	0.17	0.26
20	Clark Avenue/Judith Avenue/Stonemill Gate	B8	April-90	18300	1	1	5	2	0.15	0.15	0.75	0.3
21	Clark Avenue/New Westminster Drive	B8	March-90	31600	8	9	7	5	0.69	0.78	0.61	0.43
22	Clark Avenue/South Promenade	B8	August-86	22000	2	3	4	4	0.25	0.37	0.5	0.5
23	Clark Avenue/York Hill Boulevard (West)	B1	December-88	29900	7	6	9	5	0.67	0.58	0.87	0.46
24	Clark Avenue/York Hill Boulevard/Springfield Way	B1	January-88	20400	7	5	6	3	0.94	0.67	0.81	0.4
25	Creditstone Road/Langstaff Road	B24	December-02	15400	1	2	1	2	0.18	0.36	0.18	0.36
26	Chrislea Road/Jevian Drive	B30	February-03	15800	4	4	0	2	0.69	0.69	0	0.35
27	Edgeley Boulevard/Applewood Crescent (North)	B30	February-01	15100	2	3	4	1	0.51	0.76	1.01	0.18
28	Hilda Avenue/Crestwood Road	B1	January-96	14300	1	2	2	0	0.19	0.38	0.38	0
29	Hilda Avenue/York Hill Boulevard	B1	March-90	18100	1	4	0	5	0.15	0.61	0	0.76

30	Kipling Avenue/Woodbridge Avenue	B51	February-83	21200	12	9	4	8	1.39	1.04	0.46	1.03
31	Langstaff Road/Vaughan Mills Road	B52	May-June-04	10700	0	0	0	0	0	0	0	0
32	Martin Grove Road/Andrew Park/Auburn Road	B51	October-97	19600	3	2	2	1	0.42	0.28	0.28	0.14
33	Martin Grove Road/Langstaff Road	B51	January-95	14300	0	2	0	0	0	0.38	0	0
34	Martin Grove Road/Roysun Road	B51	April-91	16200	1	0	1	1	0.17	0	0.17	0.17
35	Martin Grove Road/Woodbridge Avenue	B51	April-93	12300	3	4	5	2	0.67	0.89	1.11	0.45
36	Martin Grove Road/Woodstream Blvd/Regina Road	B50	February-02	19100	0	6	3	2	0	0.86	0.43	0.29
37	McNaughton Road/Cranston Park Drive	B26	February-99	9200	2	0	0	0	0.6	0	0	0
38	McNaughton Road/St. Joan of Arc Avenue	B26	October-97	10000	0	0	0	0	0	0	0	0
39	Melville Avenue/Avro Road	B25	May-04	12200	0	0	1	0	0	0	0.22	0
40	Melville Avenue/Springside Road	B25	May-04	13700	0	2	0	2	0	0.4	0	0.4
41	Millway Avenue/Applewood Crescent (North)	B30	January-03	8900	2	2	1	5	0.62	0.62	0.31	1.54
42	Millway Avenue/Pennsylvania Avenue	B30	February-02	8700	2	0	1	0	0.63	0	0.31	0
43	New Westminster Drive/Beverly Glen Boulevard	B9	February-99	17600	6	4	2	2	0.93	0.62	0.31	0.31
44	New Westminster Drive/Brownridge Drive/W. Promenade	B8	November-93	25700	2	2	3	4	0.21	0.21	0.32	0.43
45	New Westminster Drive/Conley Street	B8	January-88	19600	9	4	4	8	1.26	0.56	0.56	1.12
46	New Westminster Drive/Mullen Drive/Joseph Aaron Blvd.	B8	March-90	24400	9	9	2	3	1.17	1.17	0.26	0.34
47	Rivermede Road/Bowes Road	B16	November-92	15400	5	7	1	5	0.89	1.25	0.18	0.89
48	Rivermede Road/North Rivermede Road	B16	March-94	15400	3	7	1	1	0.53	1.25	0.18	0.18
49	Rowntree Dairy Road/Strada Drive	B36	May-02	17800	3	2	3	6	0.46	0.31	0.46	0.92
50	Rowntree Dairy Road/Wings Road/Auto Park Circle	B36	May-02	18300	9	2	2	3	1.35	0.3	0.3	0.45
51	Whitmore Road/Wings Road/Trowers Road	B36	May-02	16700	1	4	2	0	0.16	0.66	0.33	0
52	Woodbridge Avenue/Clarence Street	B44	October-96	18000	5	3	4	2	0.76	0.46	0.61	0.3
53	Woodbridge Avenue/Forest Drive/Lewis Drive	B51	January-03	12400	0	0	2	1	0	0	0.44	0.22
54	York Hill Boulevard/Chabad Gate	B1	February-02	13000	0	0	1	2	0	0	0.21	0.42

**Notes:**

**AA DT - Annual Average Daily Travel**

**mve - million vehicles entering**

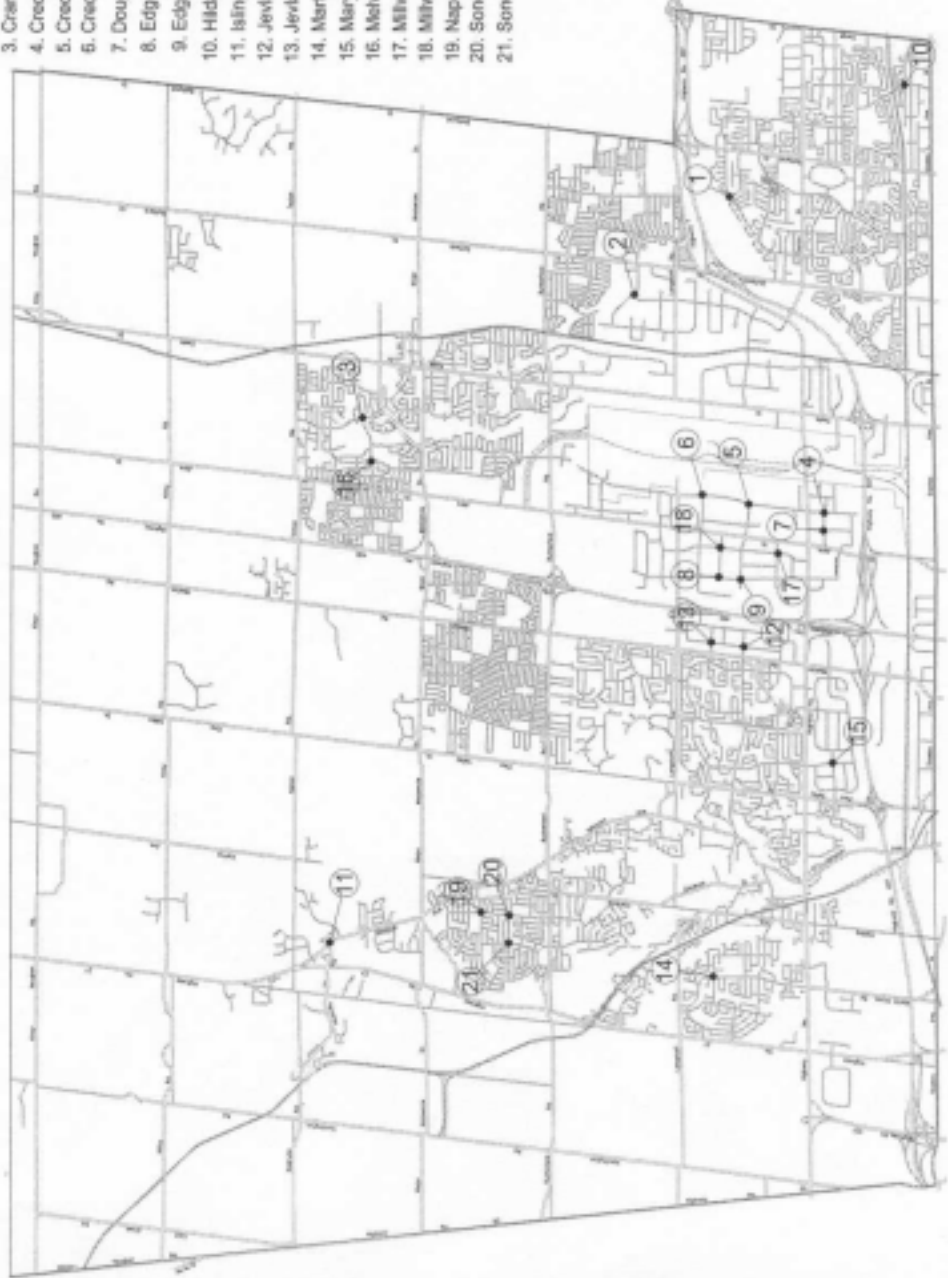
**Collisions per year may vary as reports are received by the City**

# ATTACHMENT No. 3

## City of Vaughan - Collision Review 2004 Major Unsignalized Intersections

### LEGEND

1. Beverley Glen Boulevard/Worth Boulevard
2. Confederation Parkway/Staffern Drive
3. Cranston Park Avenue/Cunningham Drive
4. Creditstone Road/Doughton Road
5. Creditstone Road/MacIntosh Boulevard
6. Creditstone Road/Pippin Road
7. Doughton Road/Maplecrete Road
8. Edgeley Boulevard/Cidermill Avenue
9. Edgeley Boulevard/Pennsylvania Avenue
10. Hilda Avenue/Pinewood Drive
11. Islington Avenue/Nashville Road
12. Jevlan Drive/Carlisuren Road
13. Jevlan Drive/Roytec Road
14. Martin Grove Road/Forest Drive
15. Marycroft Avenue/Strada Drive
16. Mehille Avenue/Cunningham Drive
17. Millway Avenue/Applewood Crescent (South)
18. Millway Avenue/Cidermill Avenue
19. Napa Valley Avenue/Forest Fountain Drive
20. Sonoma Boulevard/Forest Fountain Drive
21. Sonoma Boulevard/Monte Carlo Drive



**ATTACHMENT No.4**  
**City of Vaughan**  
**Collision Review 2004 - Major Unsignalized Intersections**

#	Intersection Location	Block	All-Way Stop	Surrounding Uses	AADT	Collisions per Year				Collision Rate (collisions/mve)			
						2000	2001	2002	2003	2000	2001	2002	2003
1	Beverley Glen Boulevard/Worth Boulevard	B9	No	Residential	7900	1	0	0	1	0.35	0.00	0.00	0.35
2	Confederation Parkway/Staffern Drive	B17	Yes	Industrial	8400	1	2	2	1	0.33	0.65	0.65	0.33
3	Cranston Park Avenue/Cunningham Drive	B26	Yes	Residential	5300	0	1	1	0	0.00	0.52	0.52	0.00
4	Creditstone Road/Doughton Road	B22	Yes	Industrial	9200	0	0	2	0	0.00	0.00	0.60	0.00
5	Creditstone Road/MacIntosh Boulevard	B23	No	Industrial	14200	1	0	0	0	0.19	0.00	0.00	0.00
6	Creditstone Road/Pippin Road	B23	No	Industrial	12700	0	0	0	1	0.00	0.00	0.00	0.22
7	Doughton Road/Maplecrete Road	B22	Yes	Industrial	6900	0	3	2	1	0.00	1.19	0.79	0.40
8	Edgeley Boulevard/Cidermill Avenue	B30	No	Industrial	11400	0	0	0	2	0.00	0.00	0.00	0.48
9	Edgeley Boulevard/Pennsylvania Avenue	B30	Yes	Industrial	13000	3	1	2	0	0.63	0.21	0.42	0.00
10	Hilda Avenue/Pinewood Drive	B1	Yes	Residential	17500	2	10	7	2	0.43	2.14	1.50	0.31
11	Islington Avenue/Nashville Road	B54	Yes	Kleinburg	10400	0	0	0	0	0.00	0.00	0.00	0.00
12	Jevlan Drive/Carlauren Road	B30	Yes	Industrial	9700	0	0	1	1	0.00	0.00	0.28	0.28
13	Jevlan Drive/Roytec Road	B30	Yes	Industrial	11000	2	4	1	0	0.50	1.00	0.25	0.00
14	Martin Grove Road/Forest Drive	B51	Yes	Residential	11400	0	4	0	2	0.00	0.96	0.00	0.48
15	Marycroft Avenue/Strada Drive	B36	Yes	Industrial	13700	1	1	1	2	0.20	0.20	0.20	0.40
16	Melville Avenue/Cunningham Drive	B26	Yes	Residential	7700	1	0	0	0	0.36	0.00	0.00	0.00
17	Millway Avenue/Applewood Crescent (South)	B30	Yes	Industrial	12300	1	2	1	1	0.22	0.45	0.22	0.22
18	Millway Avenue/Cidermill Avenue	B30	Yes	Industrial	6300	0	0	0	0	0.00	0.00	0.00	0.00
19	Napa Valley Avenue/Forest Fountain Drive	B53	Yes	Residential	6900	0	0	1	0	0.00	0.00	0.40	0.00
20	Sonoma Boulevard/Forest Fountain Drive	B53	Yes	Residential	6400	0	0	1	0	0.00	0.00	0.43	0.00
21	Sonoma Boulevard/Monte Carlo Drive	B53	Yes	Residential	4000	0	0	1	0	0.00	0.00	0.68	0.00

**Notes:**

"Kleinburg" refers to Kleinburg Village  
AADT - Annual Average Daily Travel  
mve - million vehicles entering

Collisions per year may vary as reports are received by the City