

Safe City Report 2010

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11/1/2011

Measures of public safety are used for planning public policy. The methodology for quantifying crime risk in Canada is presented. 2010 crime rates and severities, and time trends in these risks, are quantified across various geographic partitions of Canada. The focus is on the City of Mississauga and its ranking relative to other Canadian cities, regions, and police jurisdictions. Mississauga's crime rate decreased in 2010 from 2009; however the decrease is approximately half the national drop. Mississauga's 2010 crime rates, total and split into type of crime, are all lower than national rates.

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1. Introduction

Public fear of crime is a proxy for broader social anxieties (Jackson, 2004 & Ferraro, 1995). This means that public fear of crime is an accurate reflection of crime risk only if the latter is highly correlated with broader social anxiety. This suggests that a community with low crime risk can lower its broader social anxiety by quantifying, publicizing, and contextualizing its crime risk.

This report argues that amongst all Canadian urban centres, with populations at least 500,000, the City of Mississauga has the lowest crime rate. Mississauga should celebrate this finding. Surely reducing public fear of crime and relaxing broader social anxiety will bring nothing but good to the City of Mississauga.

2. Instruments and Measures

2.1 Crime Rates

The *Crime Rate* measures the volume of crime reported to, and substantiated by, the police.

Canadian adult crime rates are calculated by counting the number of incidents, dividing this number by the adult population, and then multiplying the result by 100,000. One adult crime incident may contain any number of charges and any number of participants.

Canadian youth crime rates are calculated by counting the number of youths charged, dividing this number by the youth population, and then multiplying the result by 100,000.

Crime rates can be constructed for any type of crime.

2.2 Crime Severity Indices

The *Crime Severity Index* measures the seriousness of crime reported to, and substantiated by, the police.

Canadian crime severity indices are calculated by multiplying each criminal offense by a weight, summing all these products, dividing this sum by the adult population, and then scaling this number such that crime severity indices for 2006 are 100. Up to four offenses can be attributed to one incident.

The crime severity index is a rate which is proportional to jail/prison time per 100,000 population. The index is based on the assumption that crime severity is proportional to incarceration time.

Weights are proportional to the national average jail/prison term for that offense. They are updated every five years. Some examples of current weights:

Murder	7,042
Sexual Assault – Level 3	1,047
Robbery	583
Breaking & Entering	187
Theft Over \$5,000	139
Theft Under \$5,000	37
Cannabis possession	7

There are three crime severity indices: total, violent crime, non-violent crime.

2.3 Complementary Nature of Crime Rates and Crime Severity Indices

Crime rates and crime severity indices are complementary measures. They usually move in the same direction from year to year, but not always. Together they give a complete portrayal of crime risk.

		Change in Crime Rate		
		decrease	no change	increase
Change in Crime Severity Index	decrease	less major and less minor crime	decrease in major crime; minor crime rate essentially constant	large increase in minor crime; decrease in major crime
	no change	decrease in minor crime; major crime rate essentially constant	both major and minor crime rates essentially constant	increase in minor crime; major crime rate essentially constant
	increase	large decrease in minor crime; increase in major crime	increase in major crime; minor crime rate essentially constant	more major and more minor crime

The table below shows the contribution by various types of crime to the Canadian national Crime Severity Index and Crime Rate (2006).

Crime	Percent of 2006 national CSI	Percent of 2006 national CR
Breaking and entering	24.9	10.2
Theft under \$5,000	12.4	25.6
Robbery	11.2	1.5
Theft of a motor vehicle	7.1	6.5
Mischief	6.4	16.6
Fraud	5.5	3.9
Sexual assault - level 1	2.5	0.9
Assault - level 1	2.4	7.9
Assault - level 2	2.4	2.4
Homicide	2.3	0

Both crime measures are calculated using data drawn from the *Uniform Crime Reporting Survey*, a census of all crime known to, and substantiated by, police services. This instrument uses a nationally-approved set of crime categories and definitions and is submitted annually to Statistics Canada.

2.4 Victimization Rates

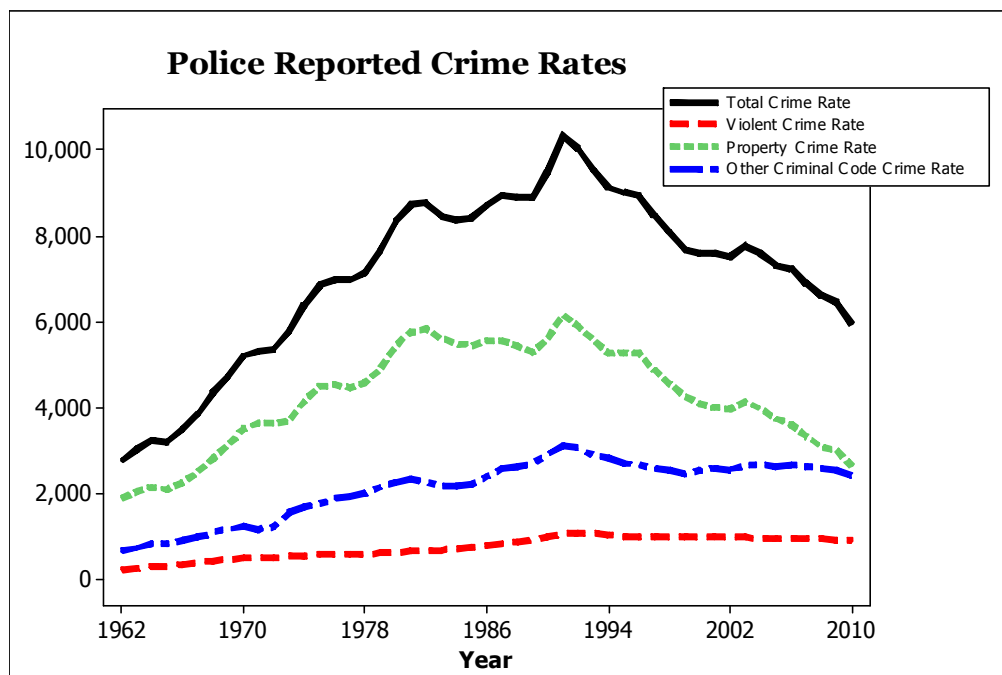
Information on crime victimization in Canada is collected via a section of the *General Social Survey* titled Victimization. This survey is conducted every five years, most recently in 2009. Results are based on a sample of Canadians and the survey collects their personal accounts of criminal victimization for eight crime types: sexual assault, robbery, physical assault, break and enter, motor vehicle/parts theft, theft of household property, vandalism and theft of personal property.

The target population for the General Social Survey is all Canadians 15 years or older, except for those in institutions. The sample is taken across all ten provinces and all three territories.

3. National Crime Rates, Indices, and Trends

3.1 National Crime Rates

In 2010, the national Total Crime Rate continued the downward trend that began after a peak in 1991. 2010's Total Crime Rate is the lowest rate since 1973. There was a 5% reduction in Total Crime Rate from 2009 to 2010.



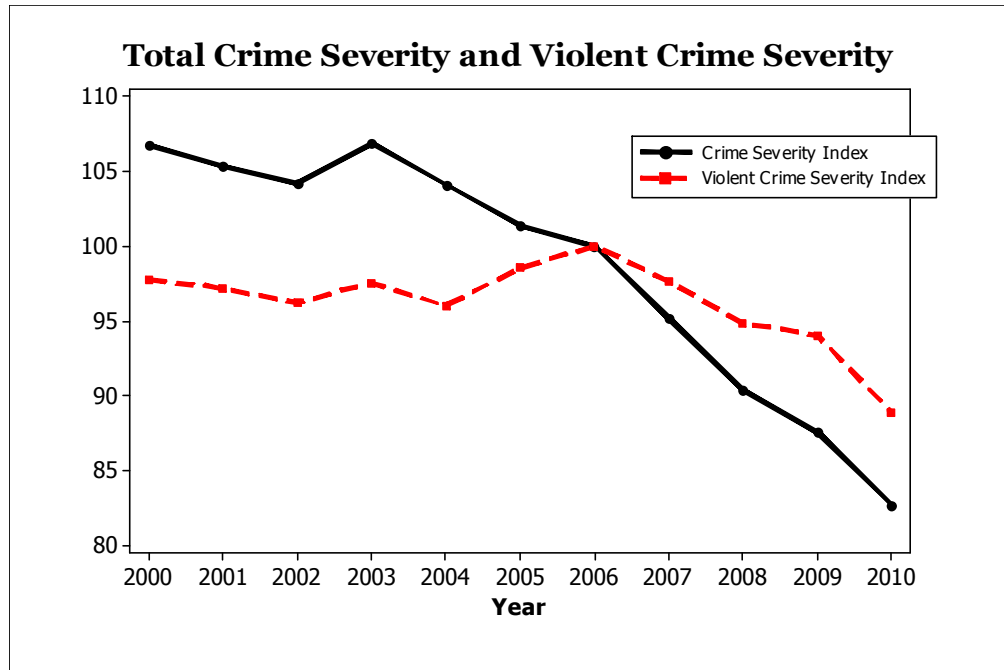
The majority of the 2009 to 2010 Total Crime Rate decline is due to reductions in 4 types of crime: theft under \$5,000, mischief, motor vehicle thefts and break-ins.

Decreases were also reported for many other offences, including homicide, attempted murder, serious assaults and robbery. However, some offences did show an increase, including sexual assault, use/discharge of a firearm, criminal harassment, child pornography, and drug offences.

Violent crimes accounted for 21% of crimes reported to police.

3.2 National Crime Severity Indices

The national Total Crime Severity Index continued its downward trend. 2010's Total Crime Severity Index is the lowest rate ever. There was a 5% reduction in Total Crime Severity Index from 2009 to 2010.



The Total Crime Severity Index reached its lowest point since 1998 (the first year for which data is available). The decline in total crime severity in 2010 was seen in all areas of the country, with the exception of Newfoundland and Labrador, the Northwest Territories and Nunavut.

The Violent Crime Severity Index declined 6% in 2010, the fourth consecutive annual decrease. Decreases were reported in every province and territory with the exception of Newfoundland and Labrador.

The non-violent Crime Severity Index fell 6% in 2010 to 80.3, the seventh consecutive decline.

4. Mississauga Crime Rates, Indices and Trends

4.1 Mississauga Crime Rates

Total Crime Rate Estimation: Peel Police do not release individual total crime rates for Mississauga and Brampton. However, they release enough information to calculate a good estimate of these rates.

In 2010 there were 40,651 incidents in Peel region, at least 18,920 occurred in Mississauga (population 681,995) and at least 19,139 occurred in Brampton (population 558,907). A 95% confidence interval for Mississauga's 2010 total crime rate is $2,964.5 \pm 9.6$.

In 2009 there were 42,117 incidents in Peel region, at least 19,222 occurred in Mississauga (population 674,113) and at least 19,300 occurred in Brampton (population 545,739). A 95% confidence interval for Mississauga's 2009 total crime rate is 3,032.5 ± 9.7.

4.2 Mississauga Crime Severity Indices

Estimates of total crime rates can be used to generate estimates of Mississauga's crime severity indices. Estimation used linear regression with 31 census metropolitan areas having populations of at least 100,000. Three CMAs were excluded: Oshawa Ontario was excluded due to mismatch between police jurisdiction and CMA boundaries, Sherbrooke Quebec was excluded due to missing 2010 crime data, and Toronto Ontario was excluded since it contains Mississauga.

Mississauga 2010 Total Crime Severity Index: 44.5 ± 14.8* (estimated)

Mississauga 2009 Total Crime Severity Index: 51.0 ± 14.7* (estimated)

* Estimates are 95% prediction intervals.

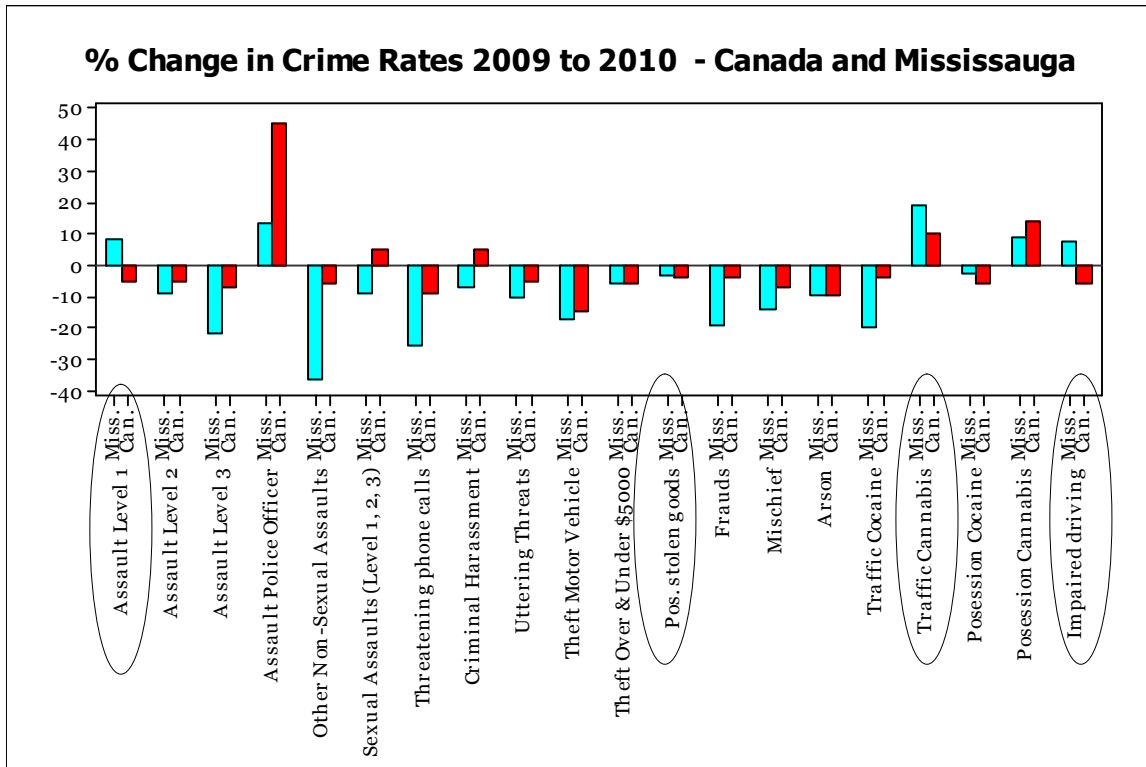
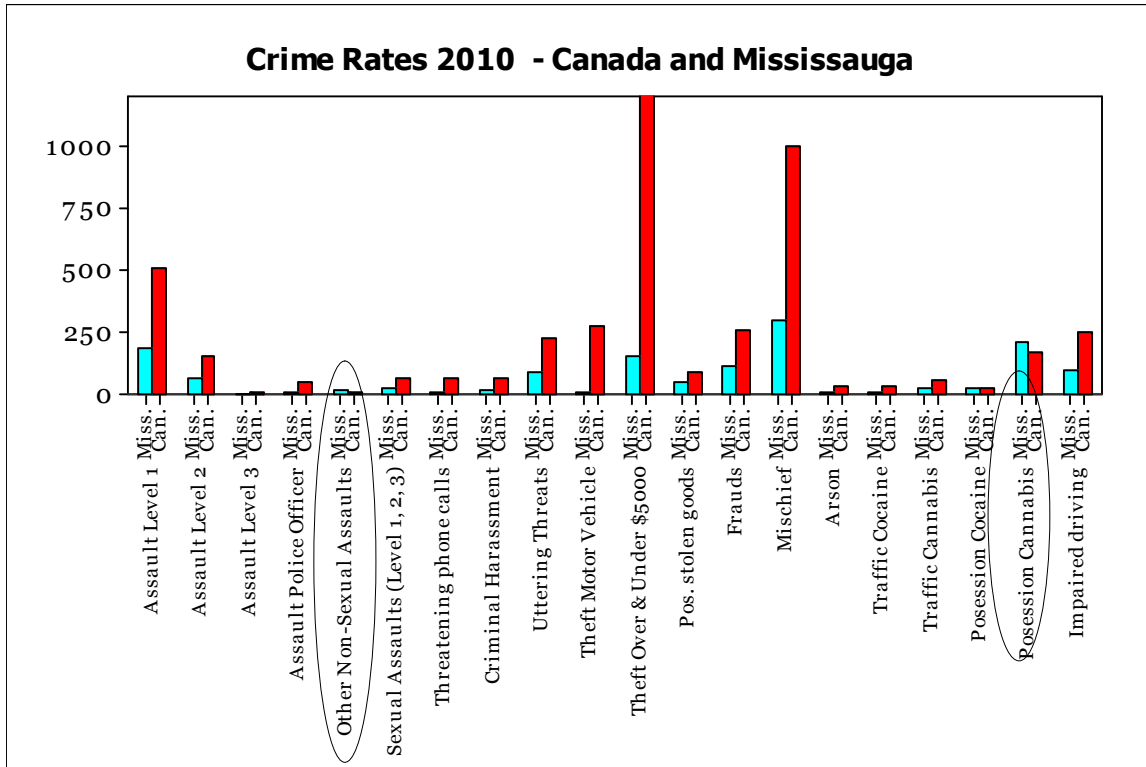
These estimates contain inaccuracies since Mississauga crime rates are lower than those for all other CMAs in the model. Percent changes in these indices have not been calculated due to the unreliability of the estimates.

5. Rating Mississauga's Crime Risk within Canada

5.1 Comparison: Mississauga and Canada

The Canadian total crime rate (excluding traffic) and the Mississauga total crime rate (excluding traffic) both fell about 5% from 2009 to 2010.

<u>Crime</u>	<u>Mississauga</u>		<u>Canada</u>	
	2010 Rate	% Change 2009 to 2010	2010 Rate	% Change 2009 to 2010
Violent Crime	495	-6.1	1,282	-3
Break and Enter	310	3.2	577	-6
Robberies	64	-12.7	89	-7
Crimes Against Property	1,983	-7.8	3,846	-6
Drugs	298	2.7	318	10
Total	2,964.5*	-2.2*	6,145	-5



Total crime rates: Mississauga's total crime rate is about half the national total crime rate. However, the reduction (2009 to 2010) in Mississauga's rate is about half of the national reduction.

National and Mississauga, the robbery rates, and property crime rates all fell from 2009 to 2010. For all three of these rates the percent reductions were higher in Mississauga than they were nationally.

Drug crime rates: National and Mississauga rates both rose from 2009 to 2010. But Mississauga's rise of 2.7% was smaller than the national rise of 10%. Overall, the rate of drug offences is continuing a general upward trend that began in the early 1990s.

Break and enter rate: Nationally, it fell by 6% from 2009 to 2010. This continues a steady decline beginning after a peak in the early 1990s. However, Mississauga's break and enter rate rose by 3.2% from 2009 to 2010.

Homicide rates: The national rate of 1.62 in 2010 was the lowest since 1966. The 10% decline in the homicide rate from 2009 to 2010 followed a decade of relative stability. There were only 2 homicides in Mississauga in 2010, this is an 80% reduction from 2009. However, Mississauga's homicide rates are too small for valid statistical analysis.

Sexual assaults: Nationally the number increased by about 5% from 2009 to 2010. This is the first increase in sexual assault since 2005. Sexual assaults decreased in Mississauga.

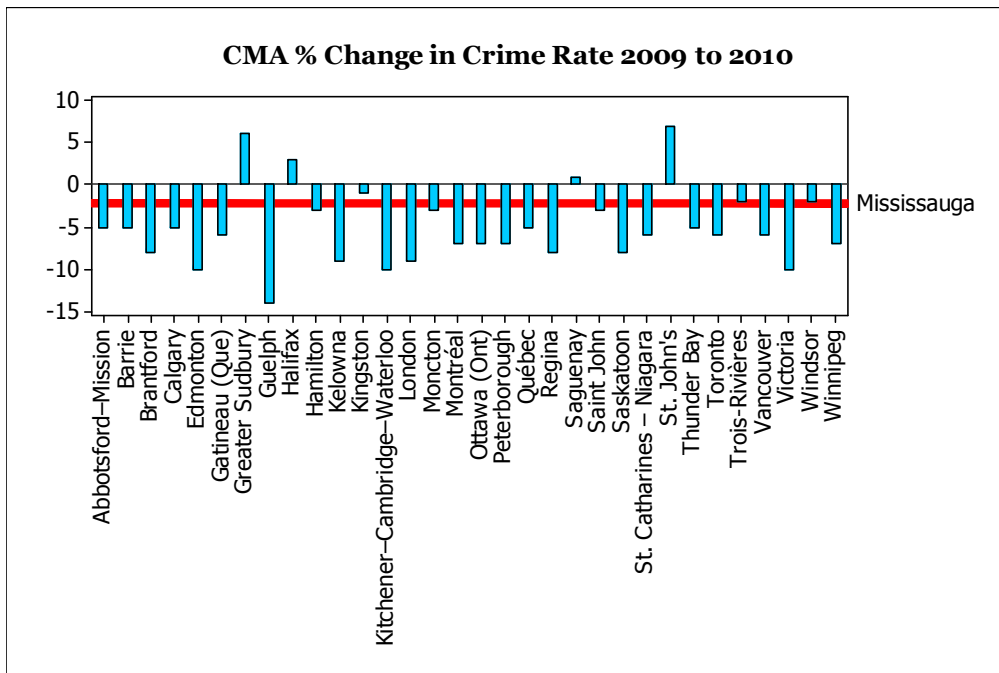
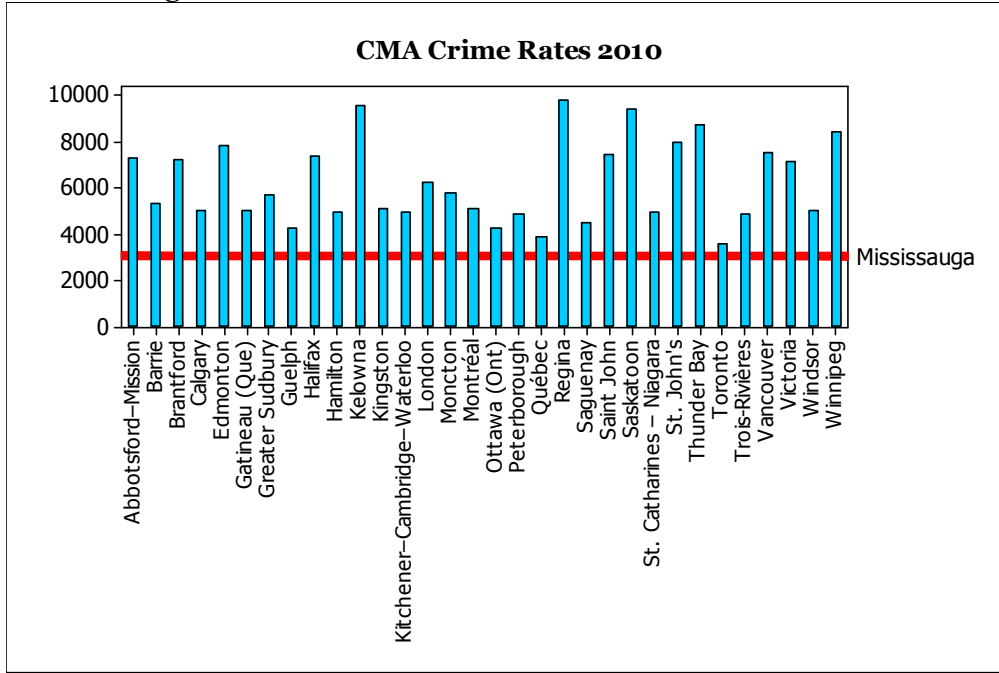
Motor vehicle theft rates: Nationally there is a 15% drop. This is a continuation of the downward trend seen since the mid-1990s. Mississauga's motor vehicle theft rate fell more than the national rate.

Impaired driving rates: The national rate fell 6% from 2009, following three consecutive years of increase. However, the rate of impaired driving has generally been declining since peaking in 1981. Mississauga's rate of impaired driving rose from 2009 to 2010.

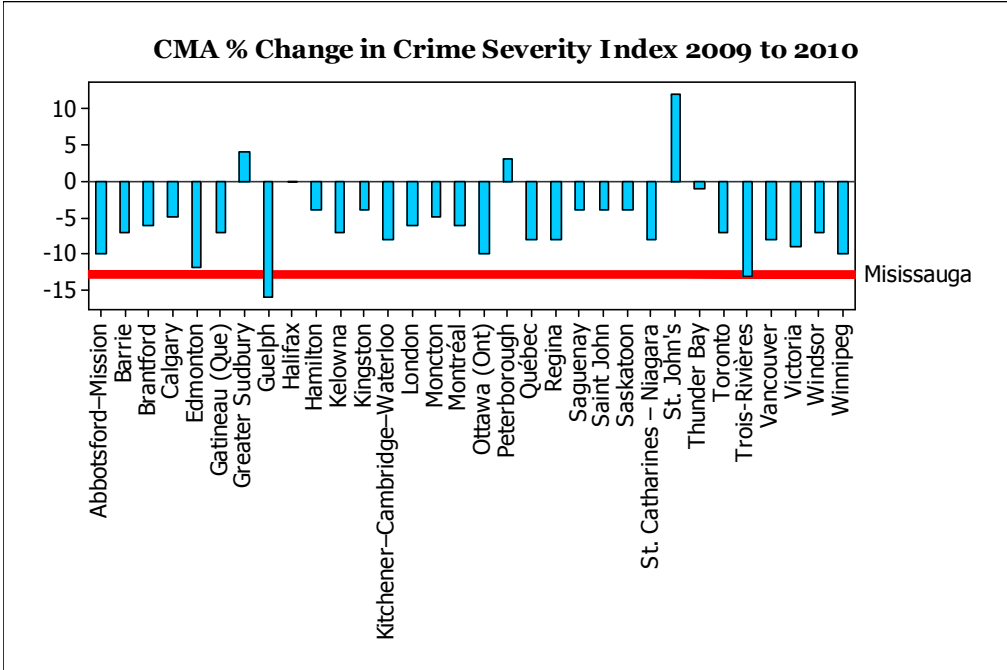
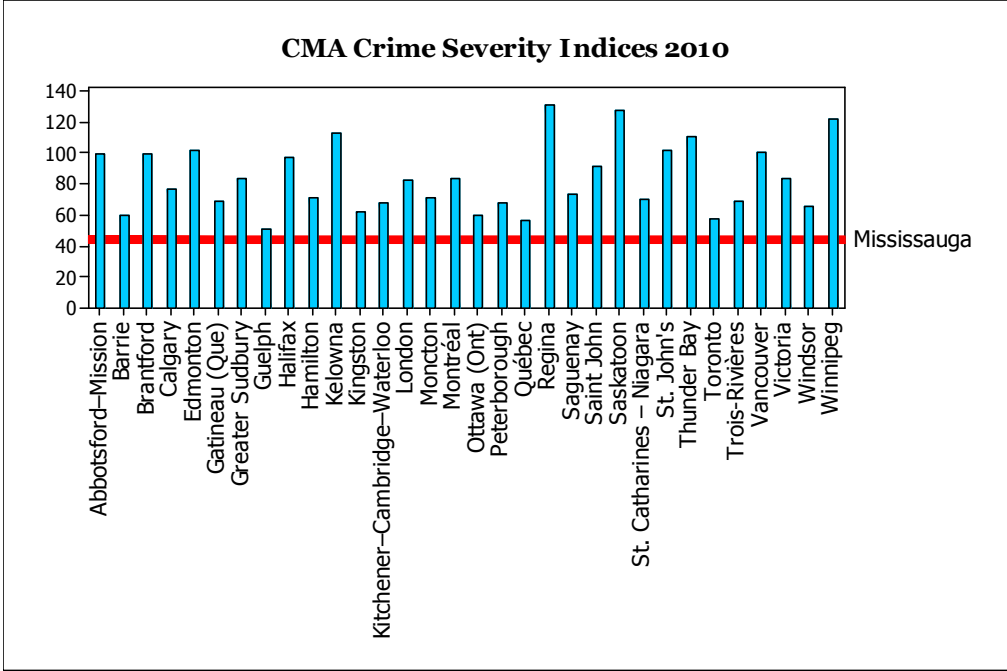
Drug offense rates: In 2010, police reported over 108,000 drug offences, about half of which were for possession of cannabis. The *cannabis possession rate* rose higher in Mississauga than it did nationally.

5.2 Comparison: Mississauga and Census Metropolitan Areas

The volume and severity of crime fell or remained stable across virtually all census metropolitan areas (with populations at least 100,000) in 2010, including Canada's 10 largest cities. The only increases are in St. John's, Greater Sudbury, and Peterborough.



*Mississauga's CR was estimated 2,964.5 ± 9.6.



*Mississauga's CSI was estimated 44.5±14.8

Total Crime Rate: Toronto (which includes Mississauga) has the lowest rate, 3,565. Guelph has the greatest percentage drop, 14%, from 2009 to 2010. Mississauga's estimated rate of 2,964.5 is lower than Toronto's rate.

Robbery Rate: Saguenay has the lowest rate, 19. Saint John has the greatest percentage drop, 50%, from 2009 to 2010.

Break and Enter Rate: Toronto (which includes Mississauga) has the lowest rate, 307. Guelph has the greatest percentage drop, 19%, from 2009 to 2010.

Motor Vehicle Theft Rate: Guelph has the lowest rate, 87. Trois-Rivières has the greatest percentage drop, 41%, from 2009 to 2010.

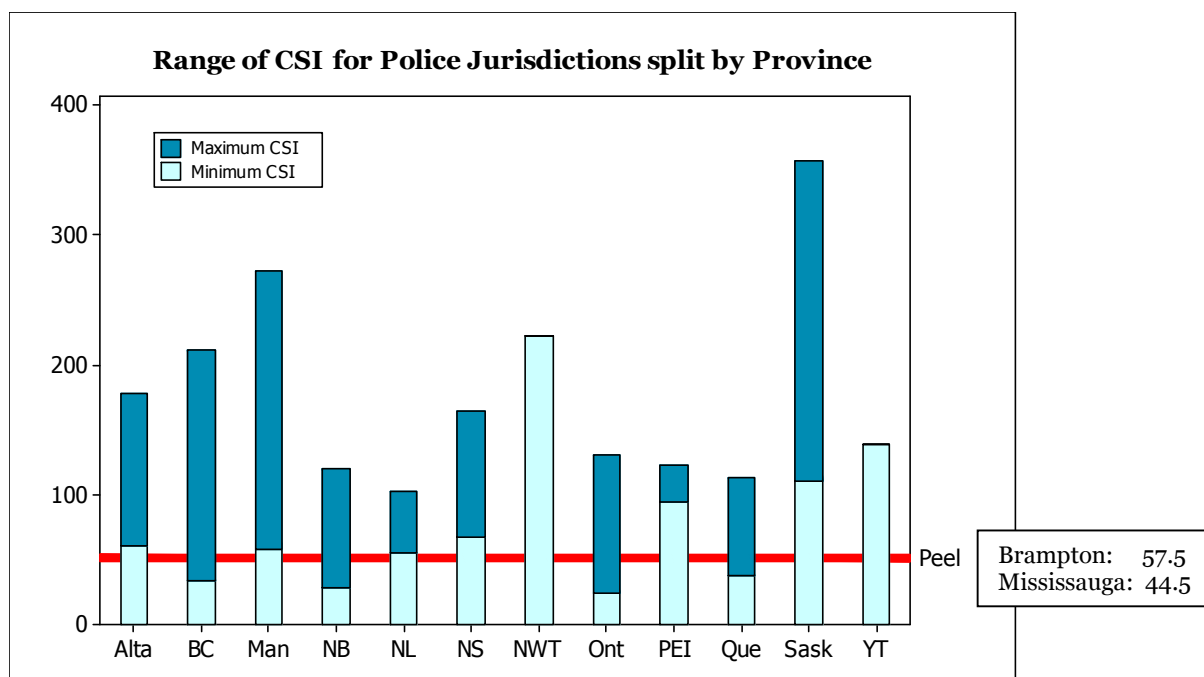
Crime Severity Index: Guelph has the lowest rate, 50.4. Guelph has the greatest percentage drop, 16%, from 2009 to 2010. . Mississauga’s estimated rate of 44.5 is lower than Guelph’s rate.

Violent Crime Severity Index: Trois-Rivières has the lowest rate, 44.4. Abbotsford-Mission has the greatest percentage drop, 24%, from 2009 to 2010.

Non-Violent Crime Severity Index: Toronto (which includes Mississauga) has the lowest rate, 46.0. Guelph has the greatest percentage drop, 17%, from 2009 to 2010.

5.3 Comparison: Mississauga and Police Jurisdictions with Populations over 10,000

In 2010 the Total Crime Severity Index for the Peel Regional Police jurisdiction was 51.9. This rate was lower than the smallest CSI value for all police jurisdictions in Alberta, Saskatchewan, Manitoba, Nova Scotia, Prince Edward Island, Northwest Territories and Yukon Territories.



Amherstburg Ontario, population 22,182, had the lowest 2010 Crime Severity Index of all 238 Police Jurisdictions. Amhurstberg’s CSI was 24.4

Parksville British Columbia, population 11,990, had the greatest drop from 2009 to 2010 in Crime Severity Index of all Police Jurisdictions. Parksville's CSI dropped 40.5%.

Caledon Ontario, population 65,633, had the lowest 2010 Crime Severity Index of all Police Jurisdictions with populations over 50,000. Caledon's CSI was 33.7.

Joliette Region Quebec, population 61,967, had the greatest drop from 2009 to 2010 in Crime Severity Index of all Police Jurisdictions with populations over 50,000. Joliette Region's CSI dropped 20.1%.

Halton (Oakville/Burlington) Ontario, population 506,900, had the lowest 2010 Crime Severity Index of all Police Jurisdictions with populations over 100,000. Halton's CSI was 37.5.

Cape Breton Region, Nova Scotia, population 101,339, had the greatest drop from 2009 to 2010 in Crime Severity Index of all Police Jurisdictions with populations over 100,000. Cape Breton Region's CSI dropped 19.0%.

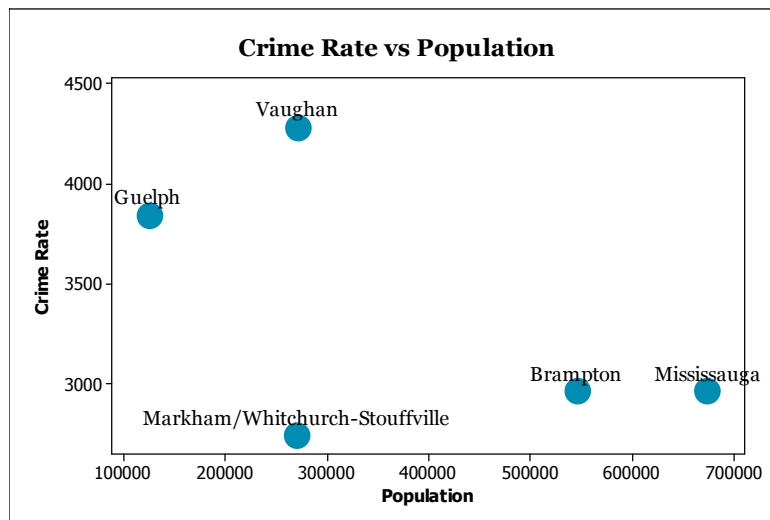
There are five Police Jurisdictions with populations over 1,000,000. Of these, York Region Ontario (Markham/Vaughn) had the lowest Crime Severity Index: 43.2. Peel Region Ontario (Mississauga/Brampton) had greatest drop in Crime Severity Index from 2009 to 2010: 8.1%.

Police Jurisdiction	Population	2010 CSI	% Change in CSI 2009 to 2010
York Region (Markham/Vaughn), Ont.	1,040,165	43.2	-2.7
Peel Region (Mississauga/Brampton), Ont.	1,273,348	51.9	-8.1
Toronto, Ont.	2,720,024	74.0	-6.7
Calgary, Alta.	1,138,393	75.8	-5.0
Montréal, Que.	1,934,082	103.3	-7.9

5.4 Comparison: Mississauga, Brampton, Guelph, Vaughan and Markham

Mississauga and Brampton (all four divisions of Peel Regional Police), Vaughan and Markham/Whitchurch-Stouffville (two divisions of York Regional Police), and Guelph have the best 2010 crime statistics for Canadian urban areas with populations in excess of 100,000. They are all mid-sized Canadian cities located in southern Ontario. All but Guelph are part of the Toronto Census Metropolitan Area.

	Population	Crime Rate
Mississauga	674,113	2964.5
Brampton	545,739	2966.1
Guelph	124,856	3845.2
Vaughan	270,886	4281.9
Markham/Whitchurch-Stouffville	270,247	2742.3



6. Cautions and Sources of Error

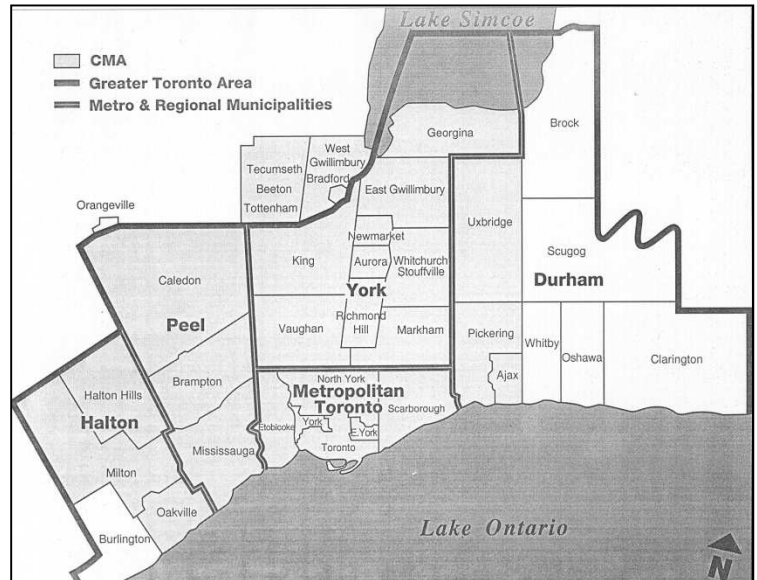
6.1 Regional Crime Risks are Averages of Diverse Sub-Regions

Crime risks, rates, and severities are averages across geographic regions, and each geographic region is a composite of numerous diverse sub-regions. The centering effect of averaging masks the true crime risk within a regions various sub-regions. Some pockets of Mississauga will have crime risks that are much lower than Mississauga’s average, while others will have crime risks that are much higher.

6.2 No Clear Reference Group for Comparison with Mississauga

There is no natural partition of Canadian urban areas, thus there is no natural comparison group for Mississauga.

Statistics Canada partitions Canadian urban areas into Census Metropolitan Areas. A CMA is an area consisting of one or more neighbouring municipalities situated around a major urban core. A CMA must have a total population of at least 100,000 of which 50,000 or more live in the urban core. By this definition Mississauga, Brampton, parts of York and Durham Regions, parts of Dufferin and Simcoe Counties, are all part of the Toronto CMA. We can't use CMA's as a comparison group for Mississauga, since Mississauga is a component of the Toronto CMA.



Canada does not have a legal definition of City. In British Columbia and Saskatchewan a city has population of at least 5,000 people. In Alberta, New Brunswick and Ontario a city has population of at least 10,000. In Manitoba a city has population of at least 7,500 people. Ontario also sometimes gives city status on primarily rural areas whose municipalities have been merged and formed a local government. Nova Scotia has no definition of city. In Quebec there is no distinction between a city and a town, both have the legal status of ville. Canada doesn't have a population of cities, so we can't use City as a comparison group for Mississauga.

Canada's 238 2010 Police Jurisdictions are a very diverse group. Populations range from 10,157 to 2,720,024. Locations range from fairly isolated (Selkirk Manitoba and Sylvan Lake Alberta) to surrounded by other urban police jurisdictions (Toronto Ontario). The population of Police Jurisdictions is too diverse a group for comparison with Mississauga.

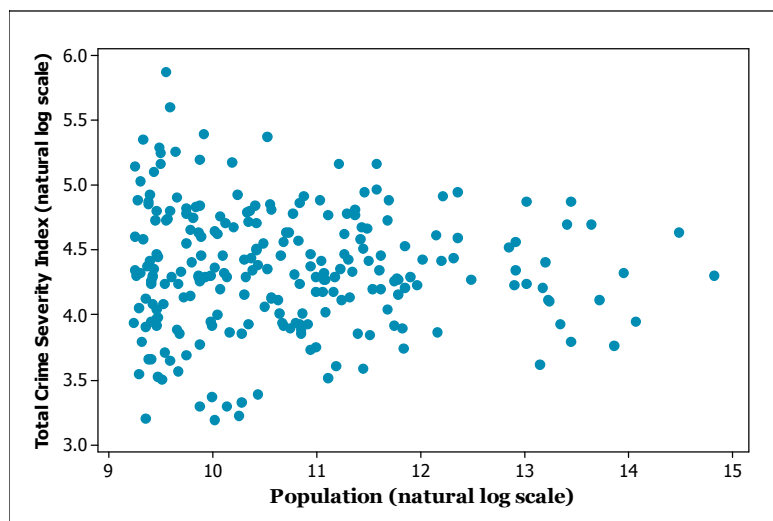
Cluster analysis was applied to the 201 2009 Police Jurisdictions. Clustering was done using 2009 Total, Violent, and Non-Violent CSI values and population. This methodology groups Peel Region, Ottawa Ontario, and Calgary Alberta. Within this group, Peel Region has the lowest Total CSI (51.9) and Mississauga's Total CSI is estimated to be even lower (44.5).

6.3 Victimization is Under-Reported

Crime data is particularly susceptible to errors due to irregularities in victim reporting. Statistics Canada estimates that about two-thirds of crime victims do not report their victimization to the police. Sexual assault is the most underreported of all crimes. Statistics Canada estimates that only 8% of all Canadian sexual assaults are reported to the police. The unreliability of police reported sexual assault statistics poses questions about the validity of crime risk comparisons if such comparisons are based on rates or indices that include counts of sexual assault.

6.4 Population Size Is Not Correlated with the Crime Severity Index

The hypothesis that there is a higher crime risk in a region with a larger population is not true in Canada. Crime Severity Indices are not correlated with Census Metropolitan Area populations (log-log model p-value 0.771). However the variability of CSI decreases as CMA population increases; some smaller CMAs are very safe and others are not.



6.5 Youth Crime Statistics Are Not Reported by Peel Regional Police

Youth crime is not addressed in the Peel Regional Police 2010 Annual Report. Youth crime rates and severity are fully documented by Statistics Canada, Guelph Police Service, and York Regional Police.

Nationally, the volume of youth crime declined 7% between 2009 and 2010. Youth crime rates declined for most offences including homicide, serious assaults, motor vehicle thefts and break-ins. Robbery was one of the few offences to show an increase for youth in 2010, up 2%. The youth Crime Severity Index has declined over the past 10 years, including a 6% drop in 2010. However, the severity of violent crime committed by youth

has not seen the same decrease. Despite a 4% drop between 2009 and 2010, the youth violent Crime Severity Index was 5% higher than in 2000.

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