

Liquor Bylaw Zoning Amendment Analysis

Edmonton Police Service
Business Performance Section



R16-231 - Liquor Bylaw Zoning Amendment Analysis

I. Objective

Assess the impact on workload for EPS and incidence of crime associated with an increase in the level of concentration of liquor stores.

II. Data

1. **Addresses for 249 liquor stores.** This data was provided to EPS by the planning section of the City of Edmonton. Six of these stores were removed from the analysis because although they have a valid development permit to construct/operate they had not yet applied for a business license (when data was collected - July 2016).
2. **Dispatched calls for service to a known location for the year 2015.** Police units are dispatched to a call for service or event in response to public calls to 911 and to the Police non-emergency line as well as calls that members initiate while on patrol. Dispatched calls for service for this analysis include calls that were concluded by the member without a police report and those for which a police report was filed. Calls for service were filtered by the Final Event Type to include only relevant types of events. A complete list of the included events is presented in Table A.
3. **Crime occurrences for the year 2015.** A crime occurrence is defined by the filing of a police report and can result from a dispatched call for service, a report made to a police station or an online report. Similarly to calls for service, crime occurrences were filtered by the Occurrence Type. A complete list of the occurrences that were included is presented in Table B.

III. Methodology

The general purpose of this statistical analysis was to determine if a greater concentration of liquor stores is correlated with higher levels of dispatched calls and/or crime occurrences. A higher level of calls for service would imply an increase on workload for EPS, while an increase in number of occurrences would imply an increase in crime. The following is a detailed description of the steps that were undertaken to conduct the analysis:

1. Liquor stores were geocoded and clustered by proximity to neighbouring liquor stores. These clusters were found using a hierarchical clustering approach and the manhattan distance as measure of proximity. The main purpose of clustering the liquor stores was to find areas of the city with large concentration of liquor stores.
2. The centroid for each cluster was calculated using the mean centre (Figure 1).
3. Starting from the centroid, a 100 metre buffer was defined. The number of dispatched calls for service, number of crime occurrences and the number of liquor stores within that buffer were calculated. This process was applied to each centroid and for a total of 10 buffer sizes: 100metres, 200 metres, 300 metres, 400 metres, 500 metres, 600 metres, 700 metres, 800 metres, 900 metres, and 1000 metres (Figure 1).

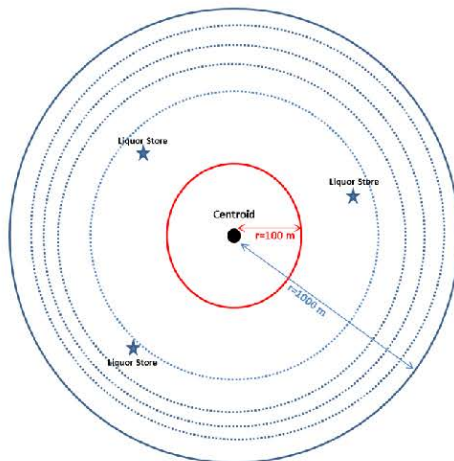


Figure 1. Illustration of the calculations made at each centroid for different buffer sizes.

4. The number of calls for service and crime occurrences around each centroid and for the different buffer sizes was normalized to obtain values from zero to 100. The tables below show an example of the results for one of the centroids. Table 1 contains the raw counts; Table 2 contains the normalized values. The purpose of this calculation is to make the values for calls for service and crime occurrences comparable among centroids.

Table 1: Raw Counts of Number of Calls for Service and Crime Occurrences

	r=100	r=200	r=300	r=400	r=500	r=600	r=700	r=800	r=900	r=1000
Number of Calls for Service	210	357	527	813	1150	1680	2179	2438	2841	3156
Number of Occurrences	154	255	356	519	740	1053	1477	1697	2030	2298
Number Liquor Stores	0	1	2	3	3	3	3	3	3	3

Table 2: Normalized values of Number of Calls for Service and Crime Occurrences

	r=100	r=200	r=300	r=400	r=500	r=600	r=700	r=800	r=900	r=1000
Number of Calls for Service	6.65	11.31	16.69	25.76	36.43	53.23	69.04	77.24	90.01	100
Number of Occurrences	6.70	11.09	15.49	22.58	32.20	45.82	64.27	73.84	88.33	100
Number Liquor Stores	0	1	2	3	3	3	3	3	3	3

5. A 500 metre buffer area around all centroids was plotted (see Figure 2). The plot revealed that for some of the cases, the buffer around one centroid overlapped with the buffer around other centroids. To avoid the overlapping of the 500 metre buffer considered in the analysis, centroids

were randomly selected to obtain samples for which there is no overlap (minimum distance between centroids was limited to be 2 km). 100 different random sample iterations were generated.

6. For each buffer radius and random sample iteration, a simple linear model was fitted to the data to determine whether there is a significant correlation on the normalized values of calls for service and/or crime occurrences and the number of liquor stores found within the buffer. Equation 1 displays the linear model equation used for the normalized value of calls for service. A similar model was used for the normalized value of crime occurrences as seen in Equation 2.

Equation 1:

$$\text{Normalized Number of CFS}_{radius} = \beta_0 + \beta_1 * \text{Num Liquor Stores}_{radius} + \varepsilon$$

Equation 2:

$$\text{Normalized Number of Crime Occurrences}_{radius} = \alpha_0 + \alpha_1 * \text{Number Liquor Stores}_{radius} + \varepsilon$$

Parameter β_1 measures the correlation between the normalized value of the number of calls for service and the number of liquor stores. Parameter α_1 measures the correlation between the normalized value of the crime occurrences and the number of liquor stores.

7. A significance t-test was applied to the sample of 100 estimated slopes for each buffer size.

IV. Results

141 centroids were identified. Figure 2 displays a close up view of an area of centroids.

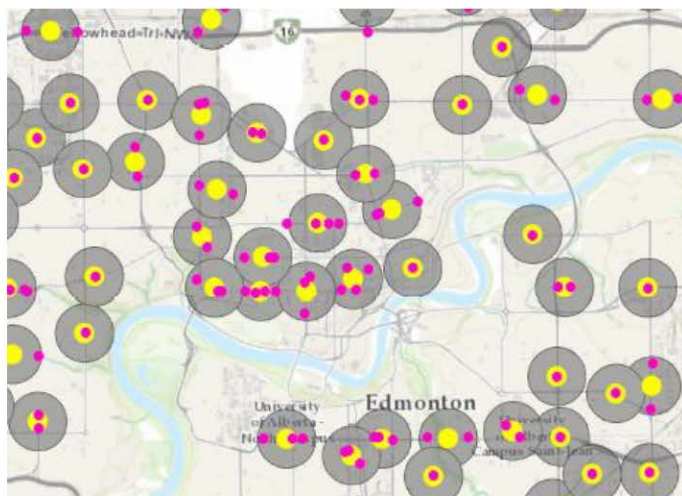


Figure 2 : Excerpt from Edmonton map with liquor store locations, buffers and centroids.

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Figure 3 displays the city-wide map including the location of the liquor stores, the centroids and a 500 metre buffer around the centroid.

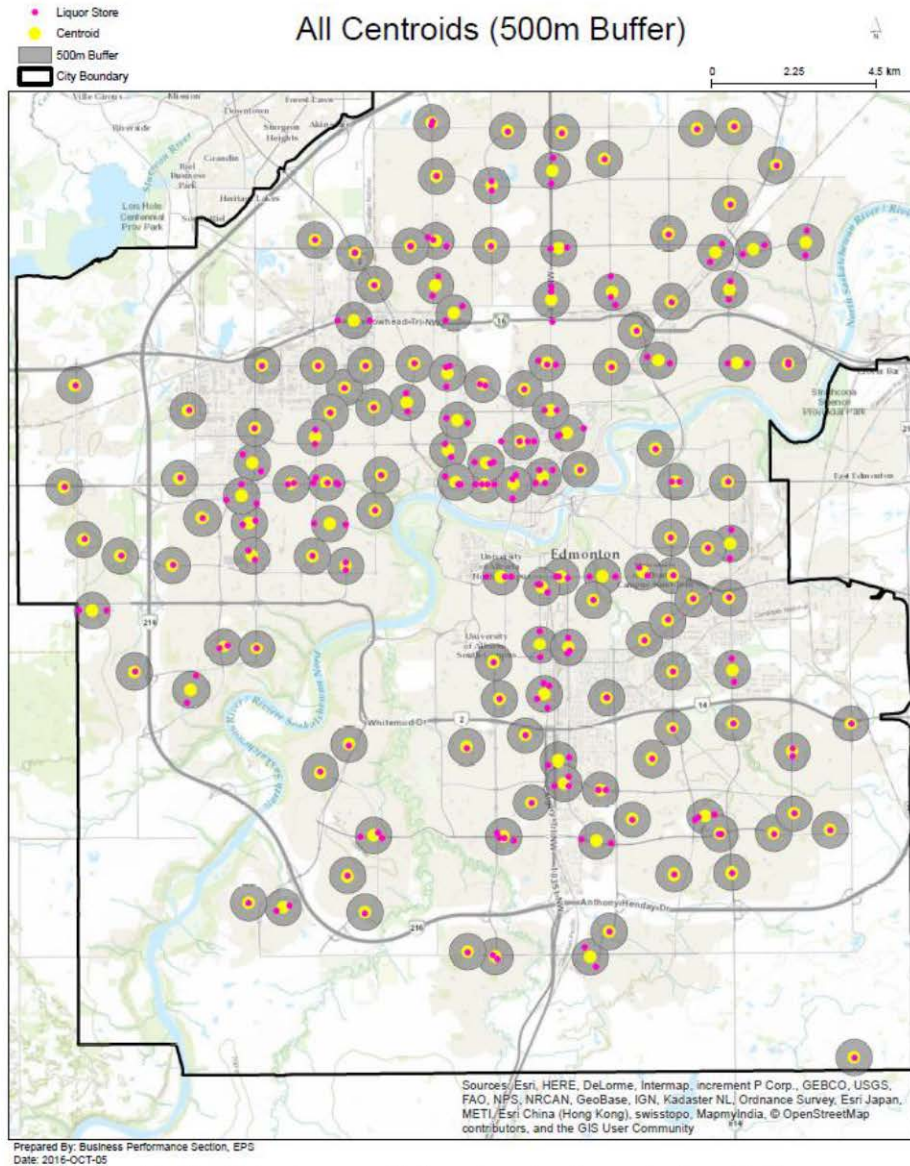


Figure 3: Complete City of Edmonton map with liquor stores locations, centroids and buffers.

Table 3 contains the frequency of cases for each buffer size. For instance, the number 50 in the left top corner indicates that 50 out of the 141 centroids had no liquor stores at the 100 metre radius around them. Notice that for some cases the sample size is very small. For instance, only two centroids had four liquor stores within the 300 metre buffer. Cases with very small sample sizes (<10) were removed from the statistical analysis as the sample size is not large enough to make a reasonable inference. Highlighted cells in Table 3 indicate cases with very small sample sizes.

Table 3: Sample sizes obtained for the different buffer sizes around the centroids

Radius (buffer size)	Number of Liquor Stores						Total
	0	1	2	3	4	5	
100m	50	82	9	0	0	0	141
200m	29	84	25	3	0	0	141
300m	20	74	36	9	2	0	141
400m	3	73	45	14	5	1	141
500m	0	72	46	15	7	1	141

Table 4 contains the summary statistics of the distances between liquor stores found within each buffer size. Notice that as the buffer size increases, the concentration of liquor stores decreases (distances between liquor stores increases).

Table 4: Summary statistics of the distances between liquor stores located within the buffer zones

Radius (buffer size)	Minimum	1st Quartile	Median	Mean	Maximum
100m					
200m	53 m	139 m	208 m	203 m	397 m
300m	46 m	171 m	245 m	276 m	537 m
400m	46 m	208 m	392 m	379 m	788 m
500m	46 m	229 m	482 m	413 m	879 m

Considering that the number of calls for service and crime occurrences for overlapping areas is not independent centroids were randomly sampled for the analysis. Each random sample iteration was generated so that there were no overlaps between the buffer areas around the centroids included in the sample.

Figure 4 displays four of the 100 random sample iterations that were used for the analysis.

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The number of centroids included in the different random sample iterations varied from 53 to 57. A linear model was fitted for each random sample and each buffer size.

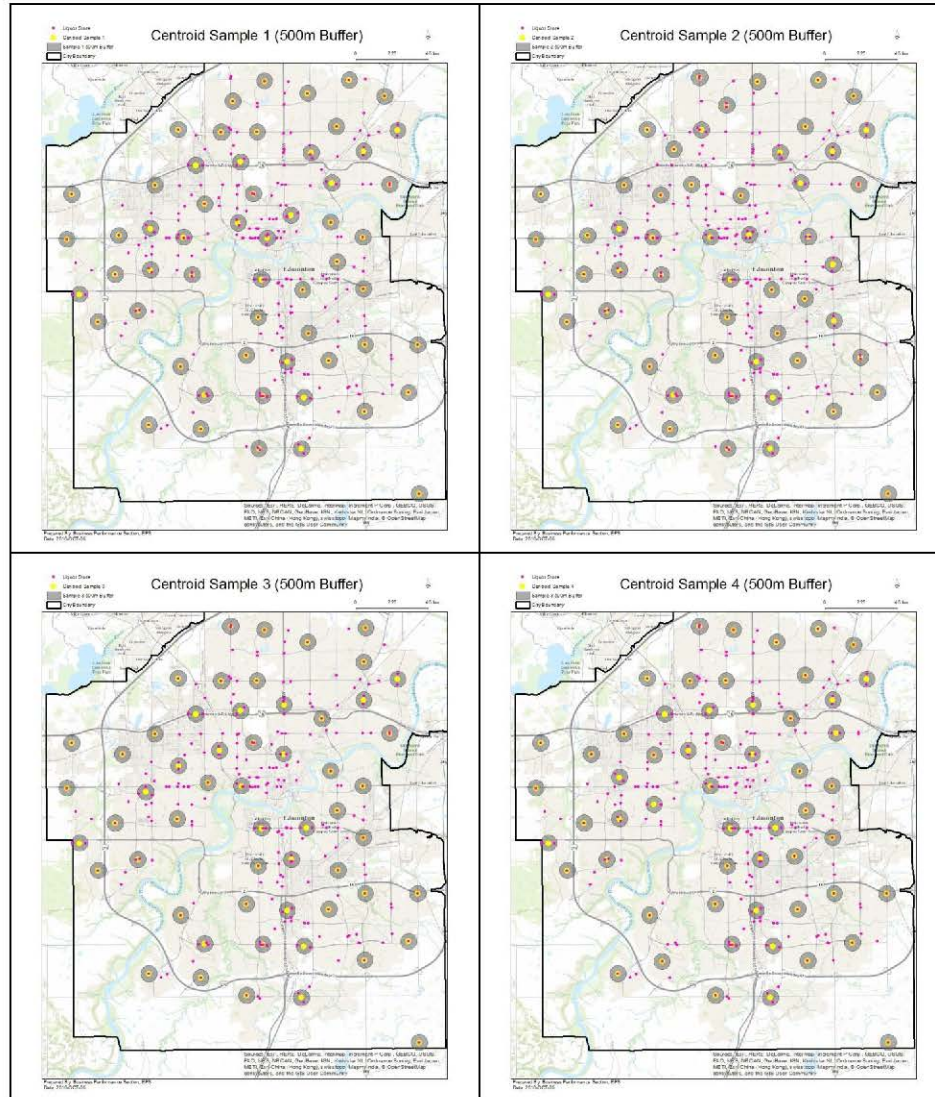


Figure 4: Illustration of 4 of the random sample iterations used for the analysis.

Table 5 and Table 6 contain the summary statistics of the results obtained for the 100 random sample iterations of the linear model for calls for service and crime occurrences.

Table 5: Summary statistics for the estimated slope for the linear model for calls for service.

Highlighted rows indicate that the slope is significantly different from zero.

Radius (buffer size)	Mean Estimate	Standard Error	P value
100m	0.64	0.65	0.325
200m	3.49	0.77	0.000
300m	3.41	0.67	0.000
400m	1.49	1.03	0.151
500m	1.55	1.20	0.196

Table 6: Summary statistics for the estimated slope for the linear model for crime occurrences.

Highlighted rows indicate that the slope is significantly different from zero.

Radius (buffer size)	Mean Estimate	Standard Error	P value
100m	0.86	0.69	0.215
200m	3.03	0.67	0.000
300m	3.22	0.55	0.000
400m	2.39	1.11	0.031
500m	2.11	1.19	0.078

V. Conclusions

Any conclusions derived from this statistical analysis only apply to the levels of concentrations of liquor stores found in the sample; that is, three liquor stores or less per buffer.

1. At a 100 metre buffer there are no significant differences in the normalized value of the number of dispatched calls between areas having 1 liquor store compared to areas that have no liquor stores. A similar result is observed for the number of crime occurrences.
2. **At 200 metre and 300 metre buffers, there is a significant positive correlation between the number of liquor stores and the number of dispatched calls.**
3. At 400 metre and 500 metre buffers, the correlation between the normalized value of calls for service and the number of liquor stores is not significant.
4. **At 200 metre, 300 metre, and 400 metre buffers, there is a significant positive correlation between the number of liquor stores and the number of occurrences.**
5. At a 500 metre buffer, the correlation between the normalized value of crime occurrences and the number of liquor stores is not significant.

VI. Interpretation

Conclusions derived from this statistical analysis only apply to the levels of concentrations of liquor stores found in the sample; that is, three liquor stores or less per buffer.

There is a significant positive correlation in the number of dispatched calls for service and the number of liquor stores in areas where the distance between liquor stores is less than 276 metres on average.

There is a significant positive correlation on the number of crime occurrences and the number of liquor stores in areas where the distance between liquor stores is less than 379 metres on average.

It must be noted that correlation is not the same as causation. It is not possible to say whether or not the presence of liquor stores were the cause of the calls for service or crime occurrences.

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Table A: Calls for Service Final Event Type Descriptions

Event Types Included in Analysis

Final Event Type Code & Description	Final Event Type Code & Description
ASSA0-106 ASSAULT AGGRAVATED ASSAULT	THEF0-130 THEFT FROM VEHICLE UNDER \$5000
ASSA1-106 ASSAULT BODILY HARM NO WEAPON	THEF1-130 THEFT FROM VEHICLE OVER \$5000
ASSA2-106 ASSAULT BODILY HARM WEAPON	THEF4-130 THEFT OVER \$5000
ASSA3-106 ASSAULT COMMON	THEF2-130 THEFT OF MOTOR VEHICLE OVER \$5000
ASSA4-106 ASSAULT ELDERLY PERSON	THEF3-130 THEFT OF MOTOR VEHICLE UNDER \$5000
BREA0-110 B & E APT. OR SUITE	THEF6-130 THEFT OF MOTOR VEHICLE
BREA1-110 B & E HOUSE	IMPA0-115 IMPAIRED DRIVING
BREA2-110 B & E INSTITUTION BUILDING	10-13-124 OFFICER IN DISTRESS
BREA3-110 B & E OFFICE BUILDING	10-17-124 OFFICER NEEDS ASSISTANCE
BREA4-110 B & E OTHER	ALAR0-104 ALARMS COMMERCIAL INTRUSION
BREA5-110 B & E PRIVATE GARAGE	ALAR1-104 ALARMS HOLD UP ROBBERY
BREA6-110 B & E SCHOOL	ALAR2-104 ALARMS OTHER
BREA7-110 B & E SHOP	ALAR3-104 ALARMS RESIDENTIAL INTRUSION
ARSO0-111 ARSON FIRES	BYLA0-132 BYLAW COMPLAINTS
ARSO1-111 ARSON FIRES MOTOR VEHICLES	BYLA1-132 BYLAW COMPLAINTS PARKING
DIST0-113 DISTURBANCE	CHIL0-102 CHILD ABUSE PHYSICAL
MENT0-121 MENTAL HEALTH ACT COMPLAINTS	CHIL1-106 CHILD ABUSE SEXUAL
MISC1-111 MISCHIEF UNDER \$5000	CHIL3-102 CHILD WELFARE ACT COMPLAINTS
MISC6-111 MISCHIEF GRAFFITI	CHIL5-102 CHILD LEFT UNATTENDED
NOIS0-113 NOISE COMPLAINT BYLAW	DEAT0-112 DEATHS CRIMINAL
NOIS1-113 NOISE COMPLAINT NOISY PARTY	DRUG0-116 DRUG RELATED COMPLAINTS
TROU1-113 TROUBLE WITH INTOXICATED PERSONS	EMER0-107 EMERGENCY PROTECTION ORDER EPO
TROU2-113 TROUBLE WITH PERSON	GAMI0-129 GAMING AND BETTING
TROU3-113 TROUBLE WITH PERSON AGGRESSIVE PANHANDLER	GAMI1-129 GAMING HOUSE OR BETTING HOUSE
WEAP0-135 WEAPONS COMPLAINT GUN	GENE0-122 GENERAL COMPLAINTS
WEAP1-135 WEAPONS COMPLAINT KNIFE	IMPA1-115 IMPAIRED DRIVING BODILY HARM
FAMI0-114 FAMILY DISPUTES INTIMATE PARTNER	IMPA2-115 IMPAIRED DRIVING DEATH
FAMI1-114 FAMILY DISPUTES VIOLENCE	IMPA3-115 IMPAIRED 24 HOUR SUSPENSION
FAMI2-114 FAMILY RELATED OCCURRENCE	IMPA4-115 IMPAIRED CHECKSTOP OPERATION
ROBB0-126 ROBBERY	IMPA5-115 IMPAIRED TADD OPERATION
ROBB1-126 ROBBERY PERSONAL	LIQU0-122 LIQUOR ACT GENERAL
ROBB2-126 ROBBERY WITH A FIREARM	MISC5-111 MISCHIEF TO VEHICLE
ROBB3-126 ROBBERY WITH A WEAPON	NEIG0-122 NEIGHBOR DISPUTES
SEXU0-106 SEXUAL ASSAULT	NOIS2-113 NOISE COMPLAINT COMMERCIAL VEHICLE
SEXU1-106 SEXUAL ASSAULT AGGRAVATED	NOIS3-113 NOISE COMPLAINT TRAFFIC GENERAL
SEXU2-106 SEXUAL ASSAULT WITH A WEAPON	NUIS0-113 NUISANCES
SEXU3-106 SEXUAL OFFENCES	POSS0-122 POSSESSION OF STOLEN PROPERTY OVER \$5000
SEXU4-120 SEXUAL OFFENCES INDECENT ACTS	POSS1-122 POSSESSION OF STOLEN PROPERTY UNDER \$5000
	PUBL0-125 PUBLIC HEALTH ACT

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Final Event Type Code & Description

RECO0-128 RECOVERED STOLEN AUTO
SHOP0-130 SHOPLIFTING OVER \$5000
SHOP1-130 SHOPLIFTING UNDER \$5000
SHOP2-130 SHOPLIFTING CO OP POLICING TRAINED
SICK0-125 SICK PERSONS
STAL0-119 STALKING
SUSP0-129 SUSPICIOUS PERSONS
SUSP1-129 SUSPICIOUS VEHICLES
SUSP2-129 SUSPICIOUS CIRCUMSTANCES

Final Event Type Code & Description

THEF5-130 THEFT UNDER \$5000
TRAF0-132 TRAFFIC COMPLAINTS GENERAL
TRAF1-132 TRAFFIC OFFENCES
TRES0-133 TRESPASS BY NIGHT
TRES1-133 TRESPASSING
TROU0-134 TROUBLE NOT KNOWN
VOYE0-133 TRESPASS BY NIGHT VOYEURISM
WEAP2-135 WEAPONS COMPLAINT OTHER

Event Types excluded from Analysis

Final Event Type Code & Description

10-92-TRAFFIC OR SUBJECT STOP
10-96-FOLLOW UP INVESTIGATION
911-911 Event
ABAN0-132 ABANDONED AUTO VEHICLE
ABDU0-101 ABDUCTION
ABDU1-101 ABDUCTION OF YOUNG PERSONS
AIRB1-108 AIRBORNE CONTAMINATE UNKNOWN
ASSI0-107 ASSIST EMS
ASSI1-107 ASSIST FIRE DEPARTMENT
ASSI2-107 ASSIST OTHER AGENCY
ASSI3-107 ASSIST TO LOCATE PERSONS
ASSI4-107 ASSIST TO LOCATE VEHICLE
ASSI5-107 ASSIST RCMP
BIAS0-119 BIAS CRIME
BOMBO-109 BOMB THREATS
BOMB1-108 BOMB EXPLOSIVE SUBSTANCE
BOMB2-108 BOMB SUSPICIOUS PACKAGE
BREA8-129 BREACH COURT ORDER
BREA8-129 BREACH RESTRAINING ORDER
BYLA2-105 BYLAW ANIMAL
CANCEL-CANCELLED EVENT
CATCO-CATCH UP MODE
CHEC1-125 CHECK ON WELFARE
CHIL2-120 CHILD PORNOGRAPHY POSSESSION/
DISTRIBUTION/ PRODUCTION
CHIL4-107 CHILD APPREHENSION PCHAD
COFFEE-COFFEE BREAKS
COLLO-131 COLLISION FATAL
COLL1-131 COLLISION HIT AND RUN
COLL2-131 COLLISION INJURY

Final Event Type Code & Description

COLL3-131 COLLISION PROPERTY DAMAGE
COMM STN-COMMUNITY STATION RELIEF
COUN0-118 COUNTERFEIT CURRENCY POSSESSION/
DISTRIBUTION/ PRODUCTION
COURT-COURT ATTENDANCE
CRIM0-122 CRIMINAL CODE OFFENCES
CRIM1-CHASE CRIMINAL FLIGHT
CRUE0-105 CRUELTY TO ANIMALS
DEAT1-112 DEATHS INDUSTRIAL ACCIDENT
DEAT2-112 DEATHS SUDDEN
DEAT3-112 DEATHS SUICIDE
DEFEO-103 DEFERRED RESPONSE FOLLOW UP
DESK-DESK RELIEF
DIARY-DIARY DATE REQUEST
DOCU0-103 DOCUMENT SERVICE
ELOP0-123 ELOPED JUVENILE FEMALE
ELOP1-123 ELOPED JUVENILE MALE
ELOP2-123 ELOPED MENTAL PATIENT
ENVIO-122 ENVIRONMENTAL PROTECTION ACT COMPLAINT
ENVI1-122 ENVIRONMENTAL PROTECTION HAZARDOUS
MATERIALS INCIDENT
EQUIP-EQUIPMENT SERVICE
ESCA0-129 ESCAPE FROM CUSTODY
ESCO0-103 ESCORTS CELLS EYOC ETC
ESCO1-103 ESCORTS FUNERAL
ESCO2-103 ESCORTS JUVENILES
ESCO3-103 ESCORTS
EXEC0-103 EXECUTIVE PROTECTION
EXT00-119 EXTORTION
FOUN0-103 FOUND BICYCLES

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Final Event Type Code & Description

FOUN1-103 FOUND PROPERTY
FRAU0-118 FRAUD CHEQUE
FRAU1-118 FRAUD CREDIT CARD
FRAU2-118 FRAUD FARE BY FRAUD
FRAU3-118 FRAUD MEAL BY FRAUD
FRAU4-118 FRAUD OTHER
HARA0-119 HARASSING PHONE CALLS
HARA1-119 HARASSMENT
HOST0-101 HOSTAGE TAKING
INDE0-119 INDECENT PHONE CALLS
INFO-C1-B REPORT WITHOUT A FILE NUMBER
INUJ0-125 INJURED PERSONS
INSE0-122 INSECURE PREMISES
INTER0-120 INTERNET CHILD EXPLOITATION ICE
KIDN0-101 KIDNAPPING
LAND0-122 LANDLORD AND TENANT TROUBLES
LOST0-103 LOST PROPERTY
LUNCH-LUNCH
MAJ00-MAJOR EVENT MANAGEMENT
MDT-MDT GENERATED FILE NUMBER (ELECTRONIC)
MEETING-MEETING
MISC0-MISC DISPATCH CODE
MISS0-123 MISSING PERSONS ADULT
MISS1-123 MISSING PERSONS CHECK LOCATION
MISS2-123 MISSING PERSONS JUVENILE FEMALE
MISS3-123 MISSING PERSONS JUVENILE MALE
MISS4-123 MISSING PERSONS LOCATED
NATU0-122 NATURAL DISASTER

Final Event Type Code & Description

PERS0-118 PERSONATE POLICE OFFICER
PHONE-C1-B REPORT WITH A FILE NUMBER
PHOT0-PHOTO RADAR
PROA0-PROACTIVE COMMUNITY INPUT MEETING
PROA1-PROACTIVE CRIME PREVENTION EDUCATION
PROA2-PROACTIVE ENFORCEMENT
PROA3-PROACTIVE TARGET LOCATION
PROA4-PROACTIVE TARGET PERSON
PROA5-PROACTIVE OFFENDER MANAGEMENT
PROB0-PROBLEM SOLVING
PROCO-120 PROCURING
PROSO-120 PROSTITUTION SOLICITING FEMALE
PROS1-120 PROSTITUTION SOLICITING MALE
PROS2-120 PROSTITUTION UNDER AGE 18
PROSECUTOR-PROSECUTORS REQUEST
RECRUIT PTO-RECRUIT PTO
REPORT-REPORTS PHONE
STAN0-125 STAND BY TO PREVENT BREACH OF PEACE
SBTPBP
STRI0-125 STRIKERS PICKETING
SUIC0-127 SUICIDE ATTEMPT
THRE0-119 THREAT UTTER OR THREAT BY LETTER
TRAINING-TRAINING
UNLA0-129 UNLAWFULLY AT LARGE
UPDATE-EVENTS ADDED SUBSEQUENT TO SYSTEM CRASH
WARRO-129 WARRANT EXECUTION
WILD0-105 WILDLIFE
Y-REGULAR SERIES CASE NUMBER

Table B. Occurrences Type Descriptions*Occurrence Types included in Analysis*

Occurrence Type Description	Occurrence Type Description
First Degree Murder	Robbery - Financial - Offensive Weapon
Second Degree Murder	Robbery - Commercial
Manslaughter	Robbery - Commercial - Firearm
Infanticide	Robbery - Commercial - Offensive Weapon
Criminal Negligence Causing Death	Oth Viol Cause Death/Bod Harm
Other Related Offences Causing Death	Arson Disregard Human Life
Attempted Murder	Abandon Child Etc.
Conspire/Murder	Other Violent Violation
Aggravated Sexual Assault	Arson Motor Vehicles
Sexual Assault - Weapon	Arson
Sexual Assault	Break & Enter House
Sexual Interference	Break & Enter Apt/Suite
Invitation to Sexual Touching	Break & Enter Private Garage
Sexual Exploitation	Break & Enter Office Bldg
Sexual Exploitation of a person with a disability	Break & Enter School
Corrupting Morals of a Child	Break & Enter Institute/ Building
Voyeurism	Break & Enter Shop
Assault - Aggravated	Break & Enter Other
Assault - Bh/Weapon	Attempted Break & Enter House
Assault	Attempted Break & Enter Apt/Suite
Unlawfully Causing Bodily Harm	Attempted Break & Enter Priv Garage
Discharge Firearm with Intent	Attempted Break & Enter Office Bldg
Using firearm (or imitation) in commission of offence	Attempted Break & Enter School
Pointing a Firearm	Attempted Break & Enter Institute/Bldg
Assault - Police	Attempted Break & Enter Shop
Assault - Other Officer	Attempted Break & Enter Other
Assault - Weapon or bodily harm - Police	B & E House - firearms
Assault - Weapon or bodily harm - Other Peace Officer	B & E Apt/Suite - firearms
Aggravated Assault - Police	B & E Private Garage - firearms
Aggravated Assault - Other Peace Officer	B & E Office Bldg - firearms
Cr Neg/Injury	B & E Shop - firearms
Trap Likely to or Causing Bodily Harm	B & E Other - firearms
Assaults - Other	Attempted B & E House - firearms
Robbery - Personal (Distraction)	Attempted B & E Private Garage - firearms
Robbery - Personal	Attempted B & E Institute/Bldg - firearms
Robbery - Personal - Firearm	B & E Vehicle - firearms
Robbery - Personal - Offensive Weapon	Theft Over (Distraction)
Robbery - Financial	Theft Of Bike Over
Robbery - Financial - Firearm	Theft Over

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Occurrence Type Description	Occurrence Type Description
Theft from Automobile Over	Public Mischief
Shoplifting over \$5,000	Nuisances
Theft of Automobile	Interfere With Property
Take/Occupy M/V - No Owners Consent	Heroin - Possession
Theft of Other M/V	Cocaine - Possession
Theft of Truck	Fentanyl-Possession
Theft of Motorcycle	C.D.S. Act Other
Theft of Automobile - Attempted	Cannabis - Possession Under
Theft of Other M/V - Attempted	Cannabis - Possession - Over
Theft of Truck - Attempted	Possession - Methamphetamines (Crystal Meth)
Theft of Motorcycle - Attempted	Possession - Methylenedioxyamphetamine (Ecstasy)
Theft Under (Distraction)	Heroin - Traffic
Theft Of Bike Under	Cocaine - Traffic
Theft Under	Fentanyl-Traffic
Theft of License Plate	Other Drugs - Traffic
Theft from Automobile Under	Cannabis - Traffic - Under
Shoplifting \$5,000 or under	Cannabis - Traffic - Over
Trafficking Stolen Goods (or Possess with intent) - Over \$5000	Trafficking - Methamphetamines (Crystal Meth)
Possess Stolen Property - Over \$5000	Trafficking - Methylenedioxyamphetamine (Ecstasy)
Trafficking Stolen Goods (or Possess with intent) - Under \$5000	Cocaine - Import
Possess Stolen Property - Under \$5000	Other Drugs - Import
Mischief	Production - Cocaine
Mischief - Graffiti	Production - Other Controlled Drugs and Substances
Mischief to Religious Property Motivated by Hate	Cannabis - Production
Betting House	Production - Methamphetamines (Crystal Meth)
Gaming House	Firearms Act
Other Gaming & Betting	Illegal Possession
Explosive Substances	Intoxications
Weapons Trafficking	Conveying In Motor Vehicle
Weapons Poss Contrary To Order	Consume Public Place
Possession Of Weapons	Minor - Obtain Liquor
Unauth Import/Export Weapons	Supply To Minors
Firearms Documentation/Admin	Liquor Act Generally
Unsafe Storage Of Firearms	Trespassing (Provincial Act)
Disturb The Peace	Dangerous Driving - Death
Indecent Acts	Dangerous Driving - B.Harm
Exposure To Under 14	Dangerous Driving
Trespass By Night	Dangerous Operation/Causing Deaths Evading Police
Offences Against Public Order	Danger Drive Evading - B.Harm
Acts Against Public Order	Impaired operation (alcohol) - causing death
Firearm/Other Offensive Weapon	Impaired operation (alcohol) - causing bodily harm
	Impaired operation (drugs) - causing bodily harm

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Occurrence Type Description

Impaired operation (alcohol) vehicle, vessel, aircraft
Blood/Alcohol Over .08
Impaired operation (drugs) vehicle, vessel, aircraft
Failure to Stop - Causing Death - CC
Fail to Stop - Causing Bodily Harm - CC
Fail to Stop or Remain - CC
Drive Disqualified
Other Criminal Code Traffic Violations
Dangerous Operation Causing Death While Street Racing
Dangerous Operation Causing Bodily Harm While Street Racing
Dangerous Operation of Motor Vehicle While Street Racing
Careless Driving
License Suspension
Alarms-Hold-Up, Robbery
Alarms-False Hold-Up
Alarms-Commercial Intrusion
Alarms-Residential Intrusion
Family Disputes
Domestic Violence
Suspicious Persons
Suspicious Vehicles
Suspicious Persons (Distraction)
Suspicious Vehicles (Distraction)
Tamper With Auto

Occurrence Type Description

Firearms Seized
Mental Health Act
Attempted Suicides
Suicides
Drug House
Emergency Protection Order
Juvenile Trouble
Sick Persons
Injured Persons
Person With Gun
Dispute With Weapon
Trouble With Person
Trouble Not Known
Abandoned Vehicle
Certain Noises Bylaw
Bylaws General
Public Place Bylaw
Streets Bylaw
Speeding Complaints General
General Complaints
General Drug Complaints
Traffic Complaints General
Licensed Premises Ejection
Assist Liquor Board

Occurrence Types excluded from Analysis

Occurrence Type Description

Incest
Sexually Explicit Material to Child with Intent
Luring A Child Via Computer
Bestiality - Commit/Compel/Incite Person
Non-consensual distribution of intimate images
Kidnapping
Forcible Confinement
Hostage Taking
Trafficking in persons
Abduction - Person Under 14
Abduction - Person Under 16
Removal Of Children From Canada
Abduction - Custody Order
Abduction - No Custody Order

Occurrence Type Description

Extortion
Intimidation of a justice system participant or a journalist
Intimidation of a non-justice participant
Criminal Harassment
Indecent Communications
Harassing Communications
Utter Threats to Person/Property/Animals
Obtaining sexual services for consideration
Procuring
Procuring - person under 18 yrs
Advertising sexual services
Fraud - Credit Card
Fraud - Cheque
Fraud - Cheque (Distraction)

Edmonton Police Service
Business Performance Section



Occurrence Type Description	Occurrence Type Description
Fraud - Credit Card (Distraction)	Possess Burglar Tool
Fraud - Other (Distraction)	Fraudulent Contracts/Trades
Fraud - Other	Intimidation
Identity Theft	Animal Abuse
Identity Fraud	False Fire Alarms
Altering/Destroying/Removing a VIN	Defacing/Impairing Currency
Bawdy Houses	Proceeds Of Crime Criminal Code
Prost Under 18 Living Avails	Conspiracy
Communicating to provide sexual services for consideration	Instruct Org Crime Offence
Sexual Services Communicating for purpose	Commit Org Crime Offence
Sexual Services Communicating for purpose <18	Participate In Org Crime Activ
Sexual Services Procuring	Criminal Code Other
Sexual Services Procuring <18	Income Tax Act
Sexual Services Advertising	Canada Health Act
Sexual Services Parent/Guardian/Household Owner permit <16	Excise Act
Fail Appear Notice	Youth Canada Justice Act
Fail Appear Summons	Immigration Act
Breach Recognizance	Human Trafficking
Counterfeiting	Federal Acts General
Escape From Custody	Sale & Keep For Sale
Child pornography - Possession or Accessing	Minor - Licensed Premise
Child pornography - Making or distributing	Securities Act
Corrupting Morals	Provincial Acts General
Obstruct Police Officer	Child, Youth & Family Enhancement Act
Resist Or Non-Aid	Public Health Act
Unlawfully At Large	Environmental Protection Act
Fail to Comply/Order (Warrant)	Danger Drive Evading Police
Breach Of Probation	Refuse Breathalyzer
Utter Threats to Property/Animals	Refuse Roadside Screening
Public Incitement of Hatred	Refuse/Fail to provide breath sample
Property/Service For Terrorism	Failure to comply or refusal (drugs)
Terrorist Group Participant	Failure to provide blood sample (alcohol)
Instruct/Commit Terrorist Act	Failure to provide blood sample (drugs)
Hoax - Terrorism	Remain At Scene - Hit & Run
Administration Law And Justice	Suspended Driver
Personate Police Officer	Motor Vehicle Fatal Collision
Invasion Of Privacy	Motor Vehicle Injury Collision
Offences against the person and reputation	Property Damage Collision
Defamatory Libel	CAD Transferred Occurrences
Extortion By Libel	EPROS Generated Occurrences
Property Rights Etc	Not Entered
	Offender Management

Edmonton Police Service
Business Performance Section



Occurrence Type Description	Occurrence Type Description
Photo Enforcement	Warrant Execution
PROBE Converted Arrest Booking Reports	Recovered Stolen Auto
PROBE Converted Case Files	Subject of 810 Recognizance
PROBE Converted Violation Tickets	Long Term Supervision Offender
Street Check Reports	Check On Welfare
Dog - Bites	Crank Letters
Alarms-False Intrusion	Sex Offender Information Act
Landlord & Tenant	Neighbour Disputes
Strikes & Picketing	Problem Solving Report
Chemical Spills	Non-culpable Homicide
Funeral Escorts	McNeil Report
General Escorts	Lost License Plate
Insecure Premises	Cancelled Ticket
TOS - Parole Violator - Day Parole	Follow-up Related File
TOS - Parole Violator - Full Parole	Alberta Hospital Board of Review
TOS - Parole Violator - Statutory Release	Offender Management
TOS - Unlawfully At Large (Federal) - Day Parole	Threat Assessment
TOS - Unlawfully At Large (Federal) - Full Parole	Dog Bylaw
TOS - Unlawfully At Large (Federal) - Statutory Release	Fire Bylaw
Cancelled File	Private Parking Complaints
Pawned Property	Rejected Online Report
Missing Pers Adult - Male	Assist Other Police
Missing Pers Adult - Female	Assist Fire Dept
Missing Pers Juv - Male	Assist Other Agency
Missing Pers Juv - Female	Assist R.C.M.P.
Eloped Juvenile - Male	Assist Attorney General
Eloped Juvenile - Female	Assist City Depts
Eloped Mental Patient	Assist Civil Court
Red Light Going Thru	Assist Military
Exceed Posted Speed	Assist - Enhanced Security Clearance
Police Notebook Tracking	Assist Locate Persons
About to Commit - Section 495 cc	Assist Locate Motor Vehicle
Occurrence Report not Received	Occurrence Type Description
Found Property	Incest
Bicycles Found	Sexually Explicit Material to Child with Intent
Lost Property	Luring A Child Via Computer
Sudden Death	Bestiality - Commit/Compel/Incite Person
Private Parking Tows	Non-consensual distribution of intimate images
Towed Vehicle	Kidnapping
Restrict Parking Tows	Forcible Confinement
Agent Status Letter	Hostage Taking
ProActive Policing	Trafficking in persons

Edmonton Police Service
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Occurrence Type Description	Occurrence Type Description
Abduction - Person Under 14	Corrupting Morals
Abduction - Person Under 16	Obstruct Police Officer
Removal Of Children From Canada	Resist Or Non-Aid
Abduction - Custody Order	Unlawfully At Large
Abduction - No Custody Order	Fail to Comply/Order (Warrant)
Extortion	Breach Of Probation
Intimidation of a justice system participant or a journalist	Utter Threats to Property/Animals
Intimidation of a non-justice participant	Public Incitement of Hatred
Criminal Harassment	Property/Service For Terrorism
Indecent Communications	Terrorist Group Participant
Harassing Communications	Instruct/Commit Terrorist Act
Utter Threats to Person/Property/Animals	Hoax - Terrorism
Obtaining sexual services for consideration	Administration Law And Justice
Procuring	Personate Police Officer
Procuring - person under 18 yrs	Invasion Of Privacy
Advertising sexual services	Offences against the person and reputation
Fraud - Credit Card	Defamatory Libel
Fraud - Cheque	Extortion By Libel
Fraud - Cheque (Distraction)	Property Rights Etc
Fraud - Credit Card (Distraction)	Possess Burglar Tool
Fraud - Other (Distraction)	Fraudulent Contracts/Trades
Fraud - Other	Intimidation
Identity Theft	Animal Abuse
Identity Fraud	False Fire Alarms
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Child pornography - Possession or Accessing	Minor - Licensed Premise
Child pornography - Making or distributing	Securities Act
	Provincial Acts General

Edmonton Police Service
Business Performance Section



Occurrence Type Description	Occurrence Type Description
Child, Youth & Family Enhancement Act	Missing Pers Juv - Male
Public Health Act	Missing Pers Juv - Female
Environmental Protection Act	Eloped Juvenile - Male
Danger Drive Evading Police	Eloped Juvenile - Female
Refuse Breathalyzer	Eloped Mental Patient
Refuse Roadside Screening	Red Light Going Thru
Refuse/Fail to provide breath sample	Exceed Posted Speed
Failure to comply or refusal (drugs)	Police Notebook Tracking
Failure to provide blood sample (alcohol)	About to Commit - Section 495 cc
Failure to provide blood sample (drugs)	Occurrence Report not Received
Remain At Scene - Hit & Run	Found Property
Suspended Driver	Bicycles Found
Motor Vehicle Fatal Collision	Lost Property
Motor Vehicle Injury Collision	Sudden Death
Property Damage Collision	Private Parking Tows
CAD Transferred Occurrences	Towed Vehicle
EPROS Generated Occurrences	Restrict Parking Tows
Not Entered	Agent Status Letter
Offender Management	ProActive Policing
Photo Enforcement	Warrant Execution
PROBE Converted Arrest Booking Reports	Recovered Stolen Auto
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Cancelled File	Private Parking Complaints
Pawned Property	Rejected Online Report
Missing Pers Adult - Male	Assist Other Police
Missing Pers Adult - Female	Assist Fire Dept

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Business Performance Section



Occurrence Type Description	Occurrence Type Description
Assist Other Agency	Assist Military
Assist R.C.M.P.	Assist - Enhanced Security Clearance
Assist Attorney General	Assist Locate Persons
Assist City Depts	Assist Locate Motor Vehicle
Assist Civil Court	