# AN ANALYSIS OF THE SOCIO-ECONOMIC AND SOCIO-DEMOGRAPHIC CONTRIBUTORS TO PROPERTY CRIME IN THE LOWER MAINLAND DISTRICT

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## Introduction

According to the data presented by police leaders at the September 29th, 2015 Metro Vancouver Crime Meeting, property crime increased for the second consecutive year in the Lower Mainland District (LMD) of British Columbia. Of the 22 RCMP and municipal police jurisdictions that comprise the LMD, it was reported that, between January and August 2015, 13 had experienced an increase in their property crime rates over the previous year, and that this trend was a continuation of the trend that saw a general increase in property crime rates in 2014 from 2013. Not surprisingly, the sudden increase in property crime over the past two years has resulted in a search for explanations.

Several lines of inquiry must be considered to better understand property crime. In particular, attention must be paid to the contextual differences that differentiate not just one municipality from other, but also the different neighbourhoods within the same municipality, which vary significantly in terms of their levels of crime. To talk about property crime in a city as a whole may mask important variations across communities and neighbourhoods. Given what research has found in other cities, it is possible that the effects of socio-demographic and socio-economic factors vary more *within* cities than *between* cities. Given this, the focus of this report includes a) how each municipality in the Lower Mainland District compares to each other, and b) identifying the "neighbourhood effects" that also contribute to fluctuations in property crime within single municipalities. The overall purpose of this report is to examine property crime in the LMD and provide a theoretical and empirical-based assessment of the socio-economic and socio-demographic variables that might be contributing to the increase in property crime rates over the past two years.

## Context of Property Crime in the Lower Mainland District

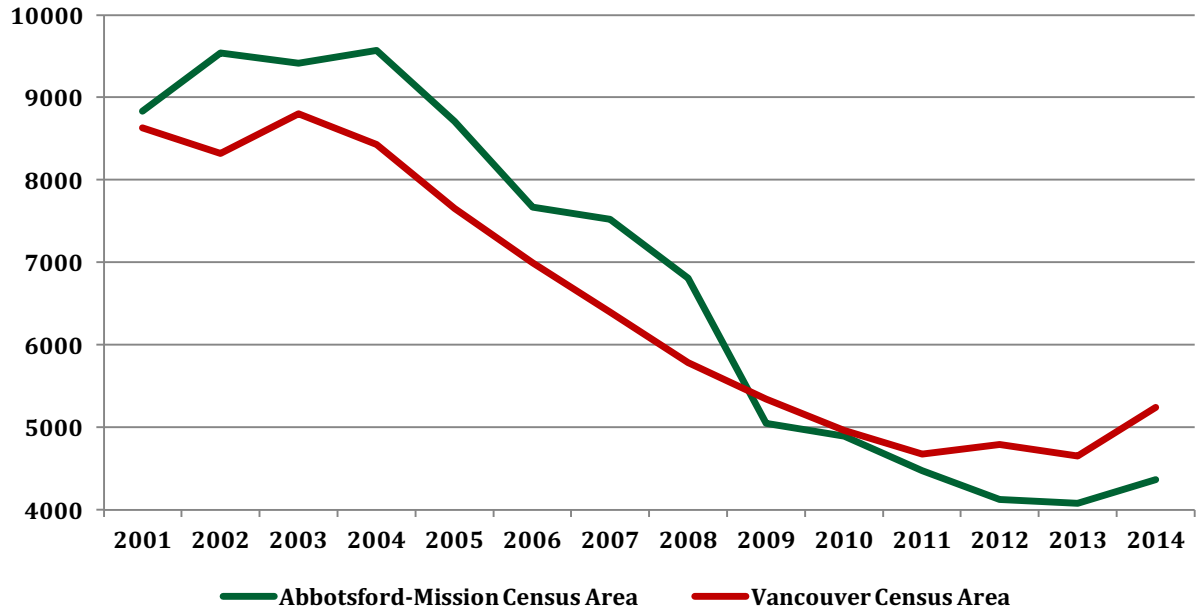
While there is a justifiable concern over the increase in the number of property crimes in the LMD since 2014, it is important to note that, for the most part, the property crime rate consistently dropped year over year between 2001 and 2013 in the LMD. As demonstrated in Figure 1, based on Statistics Canada's aggregated property crime rates for the Vancouver census area[1], property crime rates peaked in 2003, but, overall, decreased from 8,630 property crimes per 100,000 people in 2001 to 4,647 property crimes in 2013; a decrease of 46.2%. Although the Vancouver census area saw an increase of 11.4% in its property crime rate in 2014 from 2013, overall, between 2001 and 2014, the Vancouver census area's property crime rate decreased by 39.3%.

Similar to the pattern for the Vancouver census area, as demonstrated in Figure 1, the Abbotsford-Mission census area's property crime rate peaked in 2004, with a rate of 9,572 property crimes per

[1] The Vancouver Census Area includes Vancouver, Surrey, Burnaby, Richmond, Coquitlam, Langley, Delta, North Vancouver, Maple Ridge, New Westminster, Port Coquitlam, West Vancouver, Port Moody, White Rock, and Pitt Meadows.

100,000 people, but, overall, decreased from 8,829 property crimes per 100,000 people in 2001 to 4,072 property crimes in 2013; a decrease of 53.9%. Like the Vancouver census area, the Abbotsford-Mission census area also saw an increase in its property crime rate in 2014 from 2013 of 6.6%; however, overall, between 2001 and 2014, the Abbotsford-Mission census area's property crime rate decreased by an impressive 50.6%. One contributing factor that may help explain this substantial decline in property crime may be the police's adoption of a crime reduction strategy in the LMD.

**FIGURE 1: PROPERTY CRIME RATES BY CENSUS AREA (2001 – 2014)[2]**




While there have been some years with only small decreases, or even slight increases in the property crime rate, it is important to recognize that property crime rates are much lower today than they were in 2000 in every single Lower Mainland District jurisdiction. However, even with this substantial overall decrease in property crime rates in the Lower Mainland District over the past 14 years, several cities, as well as the larger Vancouver and Abbotsford-Mission census areas, have seen a slight increase in the property crime rate starting around 2013.

Some jurisdictions, including Abbotsford, Mission, Chilliwack, and Hope (see Figure 2), saw increases in property crime rates beginning in 2000; however, the peak year for property crime in Hope, Abbotsford, and Chilliwack was 2003, while the peak year for Mission was 2002. Moreover, the slope of the decline was somewhat similar for Chilliwack and Abbotsford. In contrast, there were somewhat smooth and consistent declines year over year, whereas the declines in Mission and Hope were somewhat less consistent year after year. For example, for Hope, the property crime rate increased sharply from a rate of 9,136 per 100,000 people in 2000 to 17,012 in 2003; an

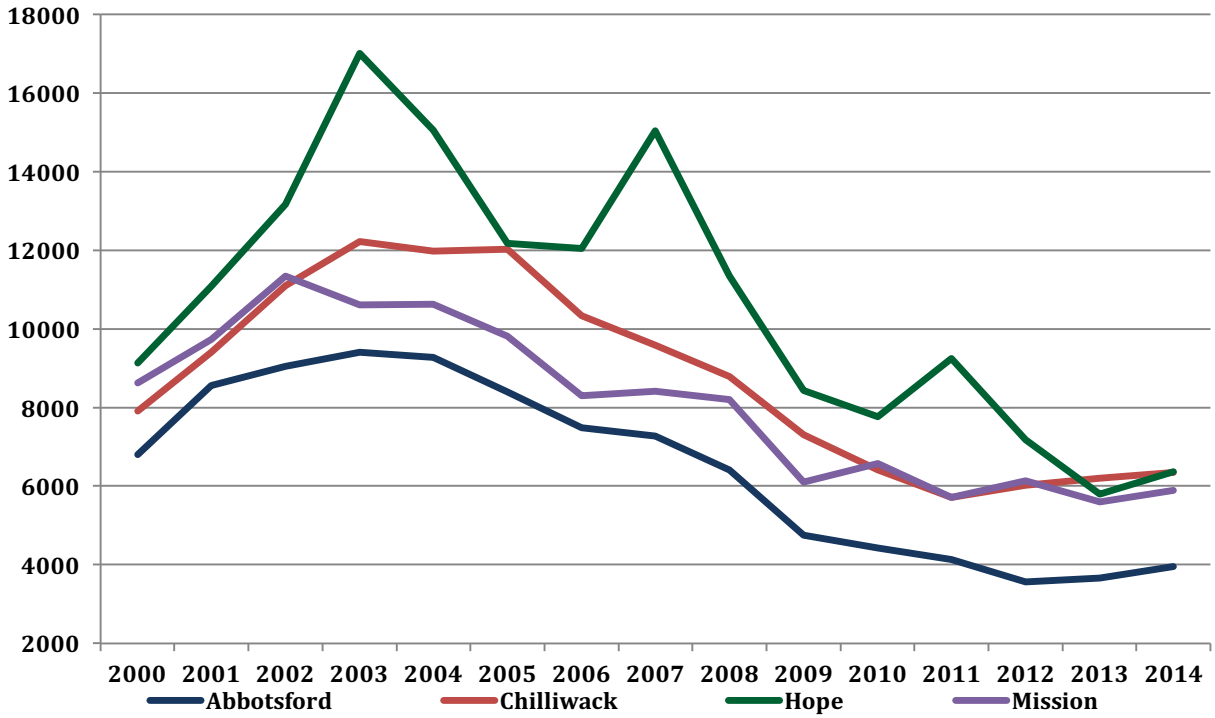
[2] Data collected from Statistics Canada CANSIM Table 252-0081, June 22, 2016.

increase of 86.2%, but then declined sharply to 12,177 by 2005; a decrease of 28.4%. The property crime rate remained virtually unchanged in 2006, but then rose again to 15,040 in 2007, before dropping to 7,764 by 2010; a decrease of 48.4% in just three years.

While not nearly as substantial as Hope, Mission also had some fluctuations year over year, unlike Abbotsford and Chilliwack, which had small, but consistent declines year over year from their peaks to 2012. This is just one example of why it is important to not just compare city to city, but to consider within city differences, which will be the focus of another section of this report. In terms of the overall decreases in the property crime rates between 2000 and 2014 for the Eastern Fraser Valley, the largest decrease was seen in Abbotsford (-42.0 per cent) followed by Mission (-31.7 per cent), Hope (-30.4 per cent), and Chilliwack (-19.8 per cent).

Of note, in the last few years, Chilliwack experienced an increase in its property crime rate each year since 2011, resulting in an 11.2% increase in their property crime rate from 2011 to 2014, Abbotsford also had an increase of 10.6% between 2012 and 2014, while Hope and Mission have seen their property crime increase by 9.8% and 5.0% respectively since 2013. So, while each of these jurisdictions have seen large decreases since 2000 and even larger decreases since their peak years, in the past couple years, property crime rates have begun to increase slightly.

**FIGURE 2: PROPERTY CRIME RATES FOR EASTERN FRASER VALLEY (2000 – 2014)[3]**




The same pattern emerged for the municipalities in the Western Fraser Valley, which included Langley City, Langley Township, Surrey, White Rock, Delta, Maple Ridge, and Pitt Meadows. With

[3] Data collected from Statistics Canada CANSIM Table 252-0081, June 22, 2016.

the exception of Pitt Meadows and White Rock, all of the other jurisdictions saw an increase in their property crime rate between 2000 and 2001 (see Figure 3). Conversely, Pitt Meadows experienced a reduction in their property crime rate until 2002, while White Rock's property crime rate began to increase in 2001. Regardless, by 2003, all of the Western Fraser Valley jurisdictions had peaked and then experienced decreases in their property crime rates that lasted until between 2010 and 2014. However, several distinct patterns emerged. One pattern, demonstrated by Langley City, Langley Township, and Surrey, involved a generally smooth and consistent decrease in the property crime rate year over year. For example, in Surrey, the property crime rate declined from its peak in 2001 of 10,049 property crimes per 100,000 people to a low of 5,539 in 2010 (-44.9 per cent) before increasing slightly through 2013 and then sharply in 2014. The increase from 2010 to 2014 represented a 26.6% increase in Surrey's property crime rate. Still, from 2000 to 2014, property crime decreased in Surrey by 22.5%.

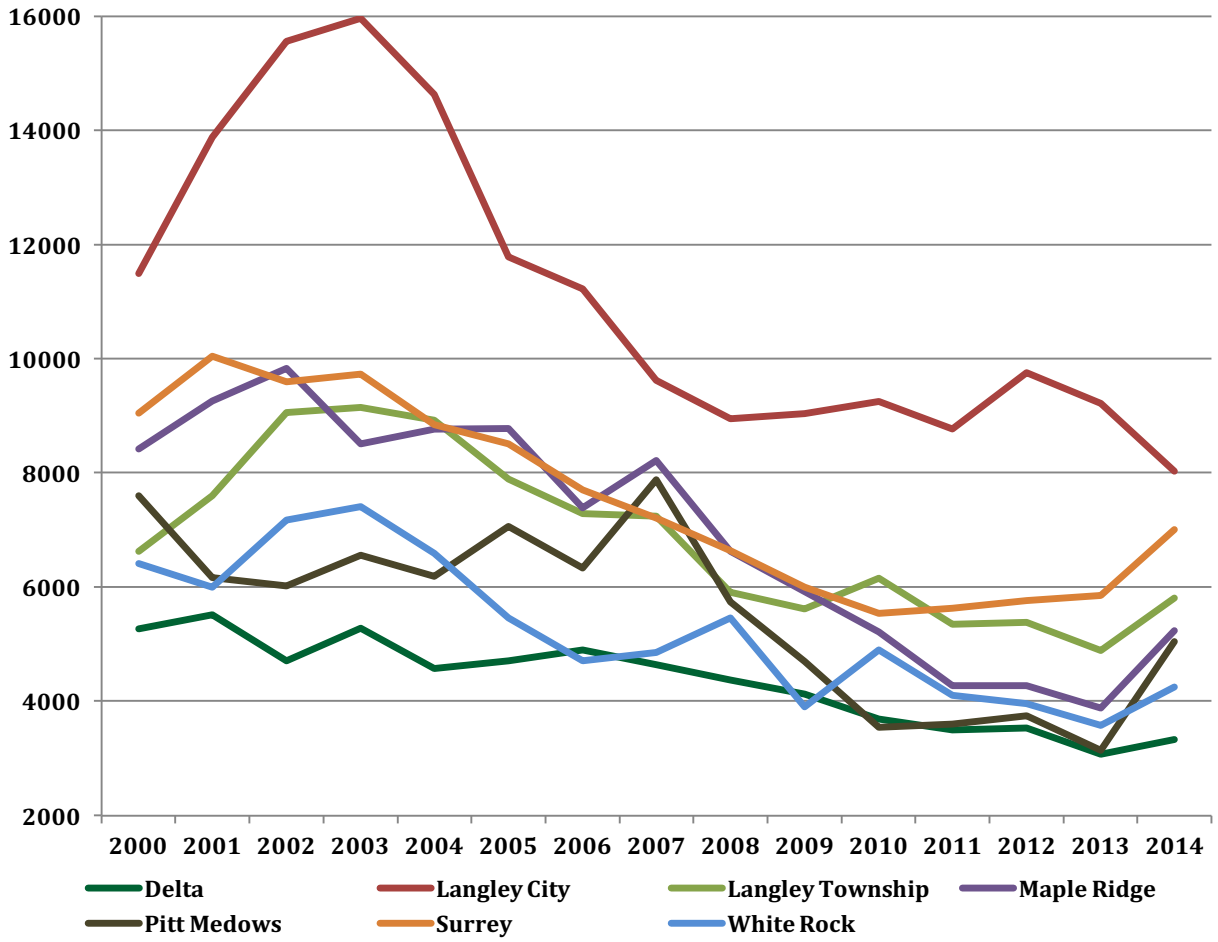
Langley City and Langley Township both saw a steady decline in their property crime rates through 2008 and 2009 respectively, before diverging. For Langley Township, the decline continued until 2014, when there was an increase of 18.7% from the previous year. Still, between 2000 and 2014, the property crime rate in Langley Township dropped by 12.4%. Langley City had a somewhat unique pattern, as its property crime rate increased very slightly from 2008 to 2010 (+3.5 per cent), declined again between 2010 and 2011 (-5.3 per cent), increased again between 2011 and 2012 (+11.4 per cent), before decreasing through 2014 (17.7 per cent). In effect, Langley City was the only jurisdiction from Eastern and Western Fraser Valley that did not experience an increase in the property crime rate in 2014 from 2013. Moreover, overall, between 2000 and 2014, the property crime rate dropped by 30.1% in Langley City.

The other jurisdictions in the Western Fraser Valley had a less consistent pattern with year over year increases and decreases (see Figure 3). Nonetheless, all of these jurisdictions experienced two things in common, namely, an overall decrease in their property crime rates between 2000 and 2014, and an increase in their property crime rates in 2014 from the previous year. For example, Delta had an overall property crime rate decrease of 36.7%, but had an increase of 8.7% in 2014 from the previous year. Maple Ridge had an overall property crime rate decrease of 37.9%, but had an increase of 34.8% in 2014 from the previous year.

As mentioned above, the other interesting finding was in Pitt Meadows and White Rock. In both of these jurisdictions, rather than seeing property crime rates increase in 2001 from 2000, as was common all of the other Western Fraser Valley and Eastern Fraser Valley jurisdictions, these municipalities saw decreases of 19.0% and 6.6%, respectively (see Figure 3). In addition to these decreases, the overall decline in property crime rates for White Rock between 2000 and 2014 was 33.8%, and the decrease in Pitt Meadows over the same time period was 33.6%.

In summary, in terms of the overall decreases in the property crime rates between 2000 and 2014 for the Western Fraser Valley, the largest decrease was seen in Maple Ridge (-37.9 per cent), followed by Delta (-36.7 per cent), White Rock (-33.8 per cent), Pitt Meadows (-33.6 per cent), Langley City (-30.1 per cent), Surrey (-22.5 per cent), and Langley Township (-12.4 per cent).

**FIGURE 3: PROPERTY CRIME RATES FOR WESTERN FRASER VALLEY (2000 – 2014)[4]**

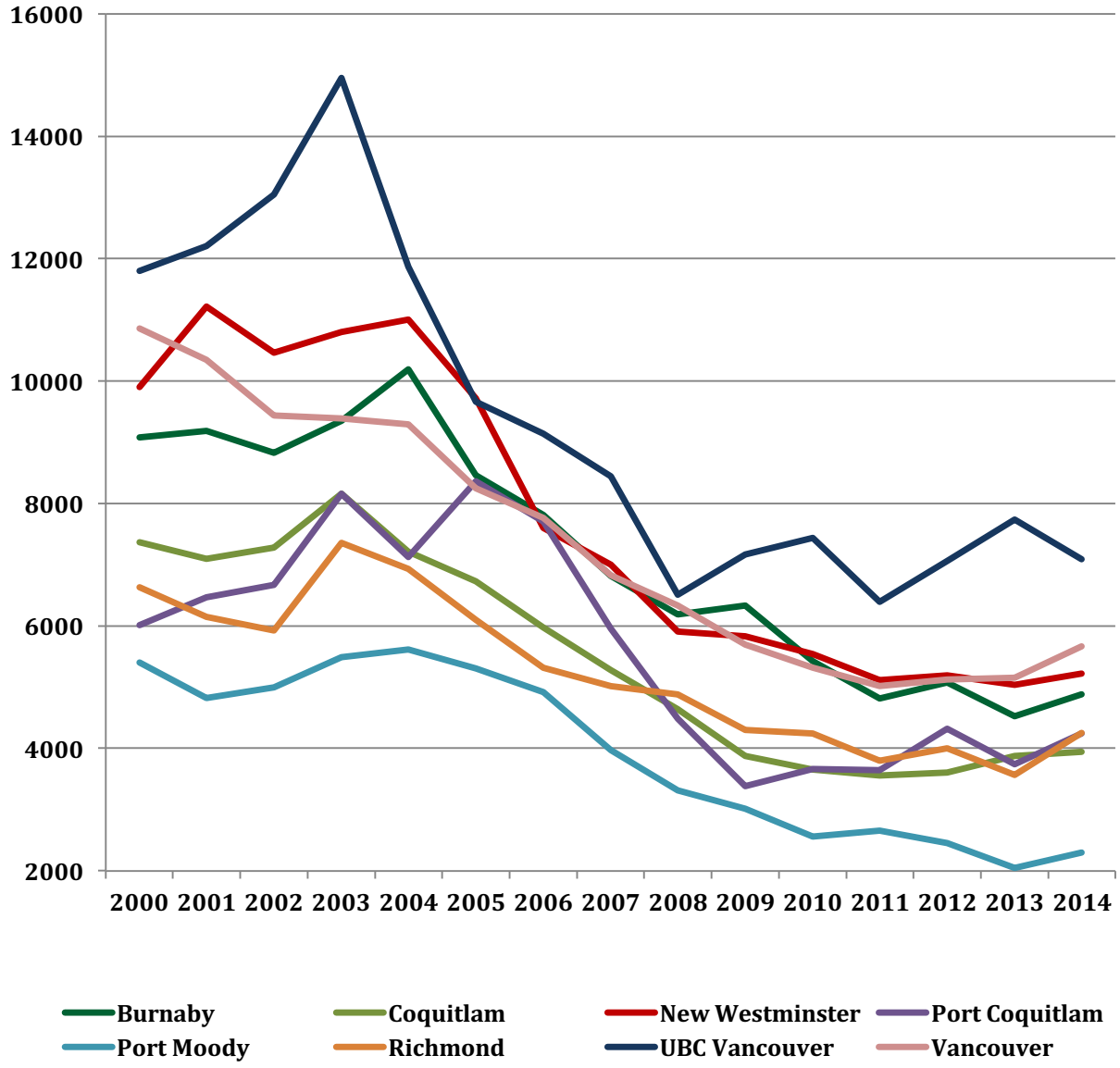



For the Greater Vancouver Area, which included Coquitlam, Port Coquitlam, Port Moody, New West, Richmond, Burnaby, Vancouver, and UBC Vancouver, again, the main general patterns discussed above were found (see Figure 4). For example, one trend was that most jurisdictions saw an increase in their property crime rates in 2001 from the previous year, with the only exceptions being the City of Vancouver, Coquitlam, and Port Moody. Also, all of the jurisdictions had their property crime rates peak between 2001 and 2005.

A second trend involved a generally smooth decrease in property crime rates year over year from their peak year to the beginning of their rising property crime rates sometime after 2011. For example, Coquitlam's peak year for property crime was 2003 with a rate of 8,159 property crimes per 100,000 people. This rate declined each year to 2011, resulting in a 56.4% decrease over that time period (see Figure 4). However, between 2011 and 2014, the property crime rate increased by 11.1%.

[4] Data collected from Statistics Canada CANSIM Table 252-0081, June 22, 2016.

**FIGURE 4: PROPERTY CRIME RATES FOR THE GREATER VANCOUVER AREA (2000 – 2014)[5]**




Similarly, in Port Moody, the crime rate declined from its peak in 2004 of 5,617 property crimes per 100,000 people year over year, with just one exception in 2011, until 2013 resulting in a 63.6% decrease over that time period (see Figure 4). As was common for most jurisdictions, Port Moody experienced a 12.5% increase in its property crime rate in 2014 compared to the previous year. Of note, of all the 22 jurisdictions included in these analyses, only the City of Vancouver had its peak

[5] Data collected from Statistics Canada CANSIM Table 252-0081, June 22, 2016.

property crime rate in 2000. Their overall pattern was also somewhat unique with a decline in their property crime rate each year from 2000 to 2011, resulting in a 53.8% decrease over that time, before increasing each subsequent year through 2014, resulting in a 9.9% increase over those last four years.

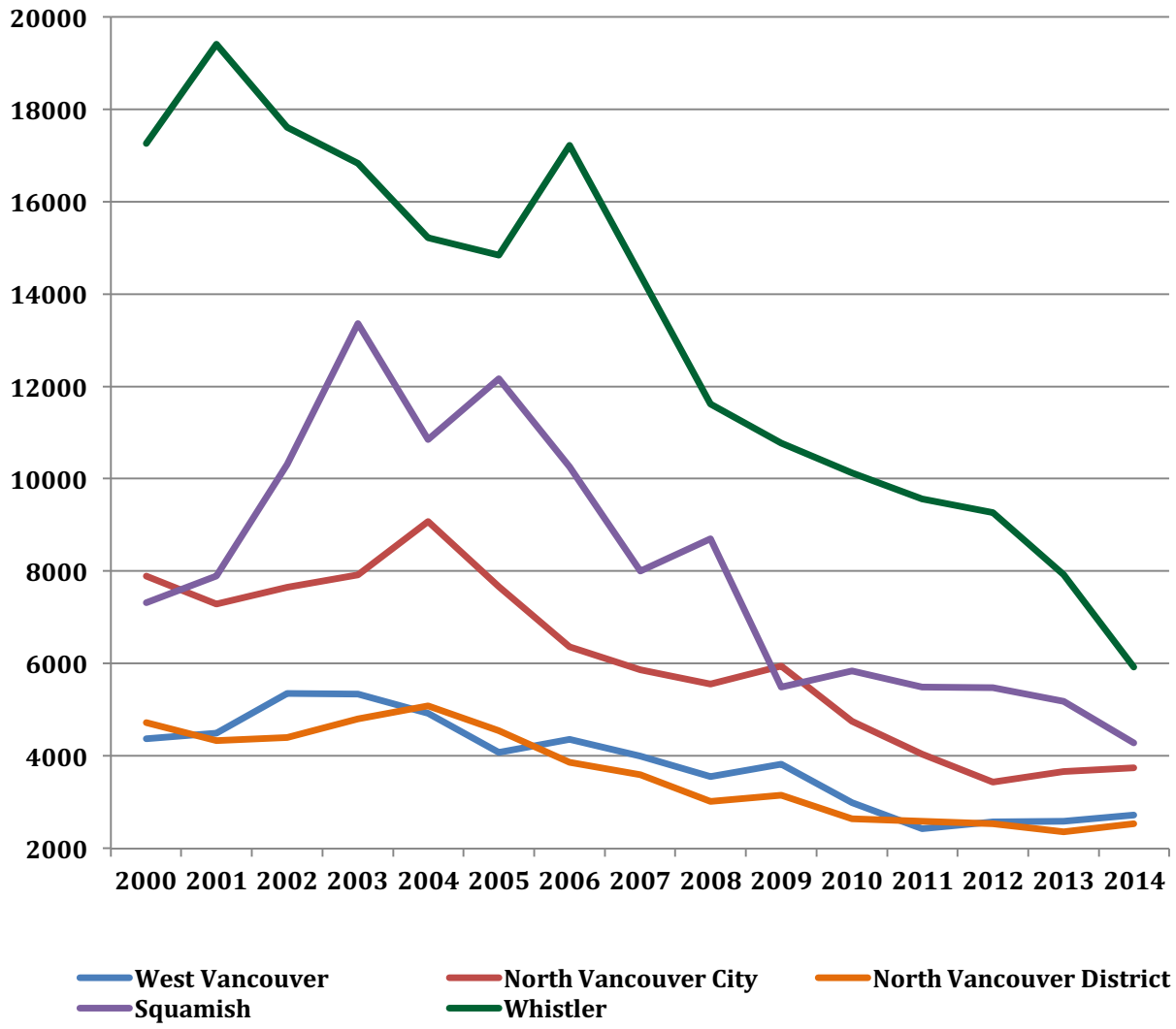
The final pattern, which was demonstrated by UBC Vancouver, New Westminster, Burnaby, Port Coquitlam, and Richmond, involved a much more erratic pattern of increases and decreases year over year (see Figure 4). For example, in Port Coquitlam, property crime rates increased between 2000 and 2003 (+35.6 per cent), decreased in 2004 (+12.6 per cent), increased in 2005 (+17.3 per cent), decreased between 2005 and 2009 (-59.5 per cent), increased in 2010 (+8.2 per cent), held steady in 2011 before increasing again in 2012 (+18.6 per cent), decreasing in 2013 (-13.4 per cent), and finally increasing again in 2014 (+13.5 per cent). It should also be noted that of the jurisdictions that comprise the Greater Vancouver Area, only UBC Vancouver experienced a decline in their property crime rate in 2014 from the previous year (-8.4 per cent). All other jurisdictions in this area had an increase in their property crime rates in 2014 when compared to the previous year.

In summary, in terms of the overall decreases in the property crime rates between 2000 and 2014 for the Greater Vancouver Area, the largest decrease was seen in Port Moody (-57.4 per cent) followed by the City of Vancouver (-47.9 per cent), New Westminster (-47.2 per cent), Coquitlam (-46.4 per cent), Burnaby (-46.2 per cent), UBC Vancouver (-39.9 per cent), Richmond (-35.8 per cent), and Port Coquitlam (-29.5 per cent).

Finally, four municipalities were grouped into a category defined as being areas north of the City of Vancouver. These cities were North Vancouver, West Vancouver, Squamish, and Whistler. Again, there was a mixed pattern found for these jurisdictions' property crime rates (see Figure 5). For example, in more common fashion, Whistler, Squamish, and West Vancouver experienced an increase in their property crime rates at the beginning of the 21st century, with a peak between 2001 and 2003. However, North Vancouver City and North Vancouver District saw a decrease from 2000 to 2001 before their property crime rates began to climb and peak in 2004. Moreover, West Vancouver and North Vancouver District experienced a generally smooth decline through to 2011 and 2013, respectively, before seeing small increases in their property crime rates to 2014. In fact, West Vancouver's property crime rate increased by only 12.7% from 2011 to 2014, while North Vancouver District's property crime rate increased by only 7.8% in 2014 from the previous year.

The pattern of change was much more substantial for the other three jurisdictions. For example, in Whistler, the property crime rate increased by 12.5% in 2001 from the previous year before dropping by 23.5% by 2005. However, the following year, the property crime rate increased by 16.0% before dropping year over year through to 2014, resulting in a 65.6% decrease in the property crime rate over the next eight years (see Figure 5). Squamish had a very erratic property crime rate between 2000 and 2010 with rather large increases and decreases over short periods of time. However, since 2010, there has a been a steady decrease in the property crime rate from 5,846 property crimes per 100,000 people to 4,285 property crimes per 100,000 people in 2014; a decrease of 26.7%.

**FIGURE 5: PROPERTY CRIME RATES FOR JURISDICTIONS NORTH OF THE CITY OF VANCOUVER (2000 – 2014)[6]**




North Vancouver City has seen a general pattern of a few years of increasing property crimes followed by a few years of decreasing property crime. Of note here, North Vancouver City experienced declining property crime rates from 2009 to 2012 (-42.2 per cent) before experiencing an increase in 2013 and 2014; in total an 8.7% increase between 2012 and 2014 (see Figure 5). It is also important to note that both Whistler and Squamish saw a decrease in their crime rate in 2014 from the previous year, whereas the other three jurisdictions fit the more common pattern of property crime rate increases in 2014.

In terms of the overall decreases in the property crime rates between 2000 and 2014 for the cities north of the City of Vancouver, the largest decrease was seen in Whistler (-65.7 per cent), followed

[6] Data collected from Statistics Canada CANSIM Table 252-0081, June 22, 2016.

by North Vancouver City (-52.6 per cent), North Vancouver District (-46.3 per cent), Squamish (-41.5 per cent), and West Vancouver (-37.6 per cent).

In summary, for the most part, based on the data provided from Statistics Canada, the 22 jurisdictions included in this report experienced an increase in their property crime rates in the first few years of the 21st century followed by a relatively steady and substantial decline until the last few years. With very few exceptions, most jurisdictions experienced an increase in their property crime rates beginning around 2012, and virtually all of the jurisdictions saw an increase in their property crime rates in 2014 compared to 2013. Moreover, based on the data presented at the September 2015 Metro Vancouver Crime Meeting, this trend continued through the first three quarters of 2015. Based on that data, while the overall property crime rate was virtually the same in 2015 as it was over the same time period in 2014, every jurisdiction, with the exceptions of Delta, Langley, New Westminster, North Vancouver, Richmond, Squamish, Surrey, and West Vancouver experienced increases in their property crime rates. Those jurisdictions with the largest increases were Mission (+25.6 per cent), Port Moody (+19.6 per cent), Ridge Meadows (+16.8 per cent), Abbotsford (+16.4 per cent), and Coquitlam (11.2 per cent). The jurisdictions with the largest decreases were Squamish (-17.3 per cent), Surrey (-9.9 per cent), and Delta (-8.6 per cent).

The data of property crime used in this report was provided by OSB "E" Division on the number, type, and location of property crime for each of the 22 jurisdictions examined in this report for 2015. Given population differences, it was expected that property crime would not be evenly distributed among the 22 jurisdictions of the Lower Mainland District examined in this report. As demonstrated in Table 1, nearly half of all the property crimes in 2015 (47.3 per cent) were recorded in just two cities, namely Surrey and Vancouver. This was not surprising given the large resident and ambient populations of these two cities.[7] After these two cities, the largest number of property crimes was found in Burnaby (8.2 per cent), Richmond (5.7 per cent), and Langley (5.5 per cent). Again, if we consider only raw numbers of crimes and not population, it was not surprising that Hope, Whistler, Squamish, Port Moody, and White Rock had the fewest reported incidents of property crime in 2015.

[7] As population figures for 2015 had not been released by the time this report was written, crime rates could not be used.

**TABLE 1: FREQUENCY OF PROPERTY CRIMES IN THE LOWER MAINLAND DISTRICT (2015)**

| | Raw Number of Property Crime Offences (n = 144,293) | % of Total |
|---|---|---|
| City of Vancouver | 37,581 | 26.0% |
| Surrey | 30,727 | 21.3% |
| Burnaby | 11,865 | 8.2% |
| Richmond | 8,237 | 5.7% |
| Langley | 7,989 | 5.5% |
| Abbotsford | 6,744 | 4.7% |
| Chilliwack | 6,307 | 4.4% |
| Coquitlam | 5,750 | 4.0% |
| North Vancouver | 4,599 | 3.2% |
| Maple Ridge | 4,506 | 3.1% |
| New Westminster | 3,493 | 2.4% |
| Delta | 3,279 | 2.3% |
| Port Coquitlam | 2,946 | 2.0% |
| Mission | 2,804 | 1.9% |
| West Vancouver | 1,404 | 1.0% |
| UBC Vancouver | 1,111 | 0.8% |
| Pitt Meadows | 1,001 | 0.7% |
| White Rock | 988 | 0.7% |
| Port Moody | 904 | 0.6% |
| Squamish | 753 | 0.5% |
| Whistler | 740 | 0.5% |
| Hope | 565 | 0.4% |

In terms of the nature of property crime in 2015, Table 2 presents the offences considered for the next section of the report, the raw occurrence number of each offence type, and the percentage of the total that each offence type contributed to the overall total of property crime in 2015. As demonstrated in Table 2, one-quarter of all property offences in 2015 in the LMD was for theft from vehicle. This was followed by theft under $5,000 (14.5 per cent), mischief to property (14.2 per cent), and shoplifting (10.0 per cent). Importantly, the more serious property offences were less common, such as break and enter of a residence (6.1 per cent), arson (0.6 per cent), and theft over $5,000 (0.6 per cent). It is also interesting to note that despite technological solutions, insurance benefits, and increased police attention, in addition to specific police strategies, such as the bait car program, auto theft was sixth most common property crime accounting for 6.6% of all property crime in 2015. In effect, excluding the more serious forms of property crime, such as auto theft, all forms of break and enters, other theft over $5,000, and arson, 78.5% of property crime in 2015 in the LMD could be characterized as more minor in nature.

**TABLE 2: NATURE OF PROPERTY CRIMES IN THE LOWER MAINLAND DISTRICT (2015)**

| | Raw Number (n = 144,293) | % of Total |
|---|---|---|
| Theft From Vehicle | 37,158 | 25.8% |
| Other Theft Under $5,000 | 20,914 | 14.5% |
| Mischief to Property | 20,467 | 14.2% |
| Shoplifting | 14,359 | 10.0% |
| Frauds | 12,459 | 8.6% |
| Auto Theft | 9,496 | 6.6% |
| Break & Enter – Residence | 8,867 | 6.1% |
| Break & Enter – Business | 7,687 | 5.3% |
| Bike Theft | 6,350 | 4.4% |
| Break & Enter – Other | 2,806 | 1.9% |
| Possession of Stolen Property | 1,506 | 1.0% |
| Arson | 831 | 0.6% |
| Other Theft Over $5,000 | 909 | 0.6% |

There were some interesting differences in how the four most common property offences were distributed across the various jurisdictions in the Lower Mainland District (Table 3). For example, with respect to theft from vehicles, Coquitlam (5.2 per cent) and the City of Vancouver (27.6 per cent) were overrepresented in the proportion of this type of offence in their cities.[8] In other words, although the City of Vancouver recorded 26.0% of all the property offences in 2015 among the 22 municipalities examined, it contributed 27.6% of all the theft from vehicle offences. Of note, Surrey was somewhat underrepresented. For 'other theft under $5,000', only the City of Vancouver was overrepresented. However, when considering mischief to property, Chilliwack, Maple Ridge, and North Vancouver were overrepresented, while the City of Vancouver was underrepresented. Finally, with respect to shoplifting, Burnaby, New Westminster, the City of Vancouver, and West Vancouver were overrepresented, while Surrey was underrepresented. In sum, while the degree of overrepresented and underrepresented was typically small, it was interesting to note that, for the two largest cities, Vancouver was overrepresented in theft from vehicle, other theft under $5,000, and shoplifting, while being underrepresented in mischief to property, while Surrey was underrepresented in theft from vehicle and mischief to property.

[8] Cells highlighted in red represent an overrepresentation of that specific offence type for that municipality, while cells highlighted in blue indicate an underrepresentation of that offence type for that municipality.

**TABLE 3: PROPORTION OF KEY PROPERTY CRIMES BY JURISDICTION (2015)**

| | Theft From Vehicle (n = 37,158) | Other Theft Under $5,000 (n = 20,914) | Mischief To Property (n = 20,467) | Shoplifting (n = 14,359) |
|---|---|---|---|---|
| Abbotsford | 4.4% | 4.0% | 5.4% | 4.2% |
| Burnaby | 8.3% | 6.9% | 9.1% | 11.0% |
| Chilliwack | 3.8% | 4.5% | 5.5% | 4.3% |
| Coquitlam | 5.2% | 3.3% | 4.1% | 4.0% |
| Delta | 2.4% | 2.0% | 2.9% | 1.9% |
| Hope | 0.2% | 0.5% | 0.8% | 0.2% |
| Langley | 5.0% | 5.9% | 5.2% | 5.9% |
| Maple Ridge | 3.3% | 3.7% | 4.3% | 2.4% |
| Mission | 1.9% | 1.9% | 2.8% | 1.2% |
| New Westminster | 1.9% | 2.5% | 2.6% | 3.7% |
| North Vancouver | 3.2% | 2.2% | 4.8% | 2.8% |
| Pitt Meadows | 0.8% | 0.7% | 1.0% | 0.9% |
| Port Coquitlam | 2.7% | 1.4% | 2.2% | 1.7% |
| Port Moody | 0.9% | 0.6% | 0.8% | 0.4% |
| Richmond | 6.4% | 6.3% | 4.8% | 4.7% |
| Squamish | 0.4% | 0.6% | 0.8% | 0.2% |
| Surrey | 19.4% | 22.3% | 20.7% | 18.2% |
| UBC Vancouver | 0.4% | 1.1% | 0.6% | 0.2% |
| City of Vancouver | 27.6% | 27.5% | 19.3% | 29.7% |
| West Vancouver | 0.8% | 0.7% | 0.9% | 2.2% |
| Whistler | 0.2% | 1.0% | 0.9% | 0.2% |
| White Rock | 0.7% | 0.4% | 0.8% | 0.1% |
| TOTAL | 100.0% | 100.0% | 100.0% | 100.0% |

While each municipality's specific property crime profile will be examined in greater detail below, another way to consider the data is to examine the distribution of each of the four main types of property crime across each of the 22 municipalities. In other words, rather than the focus of the analysis being the city, the focus of the analysis shifts to the type of property crime. As demonstrated in Table 4, theft from vehicles accounted for 25.8% of all property crimes in 2015; however, many municipalities were overrepresented in their specific proportion of property crimes that were theft from vehicles. For example, in Coquitlam, one-third of their property crime was theft from vehicle, while 27.4% of Delta's property crime was theft from vehicle. Similarly, Maple Ridge, Pitt Meadows, Port Coquitlam, Port Moody, Richmond, and Vancouver were overrepresented in their proportion of property crime that was theft from vehicles. Conversely, many other jurisdictions were underrepresented in the proportion of their property offences that were theft for vehicle, such as Whistler, UBC Vancouver, and Hope.

With respect to theft under $5,000, while there were many municipalities that were either over or underrepresented, there were only three jurisdictions that were substantially overrepresented; namely, Whistler (27.4 per cent), UBC Vancouver (21.2 per cent), and Hope (19.3 per cent). Similarly, there were four municipalities that were substantially underrepresented in their proportion of theft under $5,000; namely, North Vancouver (10.2 per cent), Port Coquitlam (9.9 per cent), West Vancouver (10.8 per cent), and White Rock (9.1 per cent).

Many municipalities were overrepresented in their proportion of property crimes that were mischief to property; however, those with the largest overrepresentation included Hope (27.4 per cent), Mission (20.2 per cent), North Vancouver (21.5 per cent), Squamish (20.5 per cent), and Whistler (24.7 per cent). A few municipalities were underrepresented in their proportion of mischief to property; namely, Richmond, UBC Vancouver, and Vancouver. Finally, when it came to shoplifting, most municipalities were underrepresented; however, Burnaby, New Westminster, Pitt Meadows, Vancouver, and West Vancouver were overrepresented.

**TABLE 4: DISTRIBUTION OF THE FOUR MOST COMMON PROPERTY CRIMES WITHIN EACH JURISDICTION (2015)**

| | Theft From Vehicle | Other Theft Under $5,000 | Mischief To Property | Shoplifting |
|---|---|---|---|---|
| Abbotsford | 24.2% | 12.3% | 16.4% | 8.8% |
| Burnaby | 26.0% | 12.2% | 15.7% | 13.3% |
| Chilliwack | 22.6% | 15.0% | 17.9% | 9.9% |
| Coquitlam | 33.4% | 12.1% | 14.6% | 10.0% |
| Delta | 27.4% | 12.7% | 17.9% | 8.5% |
| Hope | 15.8% | 19.3% | 27.4% | 3.9% |
| Langley | 23.2% | 15.6% | 13.4% | 10.5% |
| Maple Ridge | 27.4% | 17.0% | 19.5% | 7.5% |
| Mission | 25.7% | 13.8% | 20.2% | 6.4% |
| New Westminster | 20.1% | 14.8% | 15.2% | 15.3% |
| North Vancouver | 25.9% | 10.2% | 21.5% | 8.7% |
| Pitt Meadows | 28.1% | 14.7% | 19.5% | 13.6% |
| Port Coquitlam | 33.9% | 9.9% | 15.4% | 8.2% |
| Port Moody | 35.2% | 12.8% | 17.9% | 6.6% |
| Richmond | 28.7% | 15.9% | 11.8% | 8.1% |
| Squamish | 20.1% | 15.8% | 20.5% | 4.0% |
| Surrey | 23.5% | 15.2% | 13.8% | 8.5% |
| UBC Vancouver | 14.5% | 21.2% | 10.7% | 2.4% |
| City of Vancouver | 27.3% | 15.3% | 10.5% | 11.3% |
| West Vancouver | 21.9% | 10.8% | 13.5% | 22.4% |
| Whistler | 11.5% | 27.4% | 24.7% | 3.0% |
| White Rock | 25.4% | 9.1% | 15.6% | 1.6% |
| TOTAL | 25.8% | 14.5% | 14.2% | 10.0% |

While the circumstance of each property offence was not examined, given the findings presented in Tables 2 and 4, nearly two-thirds (64.5 per cent) of all property crimes in 2015 were theft from vehicles, theft under $5,000, mischief to property, or shoplifting. Of note, these particular crimes fit well into two well established criminological theories of crime; routine activities theory and social disorganization theory. Given this, the next section of this report will examine several leading contemporary theories designed to explain property crime and consider what the research literature says about the relative contribution of various socio-economic, socio-demographic, and jurisdiction composition factors on property crime rates.

Following the theoretical explanations, the actual distribution of property crime in 2015 in each jurisdiction will be presented and examined to determine whether there are property crime 'hot

spots' in each jurisdiction. Once the spatial distribution of property crime in each jurisdiction is presented, census tract data will be used to explore the socio-demographic and socio-economic features of these hot spots to assess whether there are any unique features in these hot spots that could explain the increase in property crime rates in those jurisdictions that have experienced recent increases. Together, the theoretical explanations for variations in property crime along with the empirical examination of these variations will be used to formulate several recommendations for police to consider.

## Social Theories Explaining Property Crime

### SOCIAL DISORGANIZATION

The study of geographic clustering of crime was popular in the early to mid-1900s in the United States, due mainly to a large number of empirical research studies carried out by sociologists at the University of Chicago. Arguably one of the most influential theories, which is still used today to explain property crime, is social disorganization theory, developed by Shaw and McKay (1942). One of the key assumptions of social disorganization theory is that human behavior is shaped by the environment. This does not mean that biological or individual factors are ignored by social disorganization theorists; it simply assumes that the environment in which an individual lives, as well as other social factors, is of greater importance in determining and explaining behaviour (Heidt & Wheeldon, 2015). In particular, of key importance to social disorganization is the neighborhood an individual lives in, and the effects that neighborhood characteristics can have on influencing one's behavior.

Shaw and McKay were heavily influenced by the sociological works of authors like Burgess (1925) and his concentric zone theory, which argued that crime was not evenly distributed throughout a city. Instead, Burgess (1925) demonstrated that rapid population changes in an urban environment led to certain (inner) parts of the city becoming more prone to crime problems, while other (suburban) areas enjoyed much lower crime rates, with a major driving factor being the transient nature of inner city neighbourhoods. Burgess (1925) argued that the center or core of a city, generally filled with commercial or industrial businesses, stores, offices, restaurants, and entertainment, was often surrounded by another zone, known as a zone-in-transition. This zone-in-transition, of great interest to criminologists due to the often high crime rates in this zine, generally contained slums or underdeveloped areas, and tended to be the location that first-generation immigrants moved to upon arriving to a new country, simply due to the low rents that were available. This zone-in-transition was often in flux, characterized by high residential mobility, people with lower levels of education, and people of lower socio-economic status. In addition, this zone was constantly being invaded by urban sprawl as the center of the city grew outwards. This constant population churn prevented a sense of community or strong relationships between people living in the zone-in-transition. The zone-in-transition also tended to be filled with a large number of different racial groups and ethnicities that lacked many tangible connections, either due to language, cultural, or religious differences. In effect, this zone suffered from low levels of social capital and low levels of collective efficacy. Burgess (1925) noted that all of these features contributed to a constant state of social disorganization and low levels of social control, which

resulted in higher rates of crime and delinquency. Burgess (1925) referred to the next area, Zone 3, as the area of workingmen's homes, often inhabited by individuals working in the city centre. Often, as those living in the zone-in-transition became more successful, often after one or two generations, residents would eventually move to live in Zone 3, as it was more stable, safer, and desirable. This area, along with the next zone, tended to have much lower levels of residential mobility compared to the zone-in-transition. Zone 4, which Burgess (1925) referred to as the residential zone, was generally filled with more successful single family dwellings, and upper and middle class apartment buildings. Finally, the outer area of a city, Zone 5, was known as the commuter zone, which included the suburbs of the larger city, or smaller satellite cities, often 30 to 60 minutes away from the city core. Zones 3, 4 and 5 tended to have far lower rates of crime and delinquency than the zone-in-transition.

Based on these findings, Shaw and McKay posited that neighborhood organization was likely a key factor in determining whether an individual would become involved in crime and also the level of crime in a specific part of the city (Lilly, Cullen, & Ball, 2007). In support of this, their research on juvenile crime suggested that crime tended to have higher concentrations in specific areas, while others maintained lower crime rates, even when controlling for population growth. These findings led Shaw and McKay (1942) to conclude that concentrations of crime within a city were not due simply to population growth, but were likely due to other social factors within those specific communities or neighbourhoods. In other words, it was something about the environment, rather than the specific characteristics of the people living there that contributed to increased crime rates in certain parts of a city.

In effect, social disorganization theory links the characteristics of a neighborhood or community to crime rates, and posits that a community would become disrupted or disorganized by several key factors, such as rapid population growth, immigration, or an invasion of business or industry into a residential area. As this occurred, the internal norms and standards of the community begin to weaken, break down, and eventually disappear (Bruinsma, Pauwels, Weerman, & Bernasco, 2013). As these norms break down, a neighborhood would be unable to exert social control over the behaviour of the individuals living there, which could lead to higher rates of delinquency and crime.

Shaw and McKay (1942) argued that social disorganization was the outcome of three main characteristics, namely low economic status (poverty), cultural heterogeneity, including individuals from multiple ethnic or religious backgrounds, and high levels of residential mobility. Low economic status could be indicated by higher rates of social assistance, lower rates of home ownership, and lower job wages for individuals in the community. With regards to cultural heterogeneity, neighborhoods with many small groups of different ethnicity, religious, culture, languages, and norms would experience high levels of social disorganization. It was argued that these various groups would have difficulty finding common ground, and would have a hard time communicating with one another due to language and cultural barriers, leading to weak or non-existent personal relationships. Shaw and McKay (1942) also believed that individuals living in these communities of low economic status would become frustrated when confronted with individuals of high economic status, which could also lead to further criminal behavior. They argued that as the frequency of these characteristics increased, the community would have a lowered resistance to unconventional behavioral norms challenging the conventional norms and moral

values. As different groups with different sets of norms and values moved into a disorganized area, it would become further disorganized. Residential mobility, partially linked to lower rates of home ownership, would lead to residents constantly moving in or out of the neighborhood, making it difficult for individuals to create strong friendship networks. The constant change in residents could also lead to institutions, such as schools or churches, having weak or non-existent social control. Sampson (1986) later added the additional factor of family disruption to social disorganization theory, stating that marital problems, such as divorce, would likely weaken the informal social control of youth, which could lead to higher crime rates.

Although social disorganization theory fell out of favor during the 1960s and 1970s after methodological issues with Shaw and McKay's early works were pointed out (Bursik, 1988; Weisburd, Bruinsma, & Bernasco, 2009), this theoretical framework has seen a resurgence in interest since the 1980s, with elaborations on the original model, as well as new extensions like Bursik and Grasmick's community control theory (1993) and Sampson's collective efficacy theory (1997).

Bursik and Grasmick (1993) identified several levels of community control in their theory. The first level of control, private control, was centered on personal relationships and friendships with other individuals in the community, which enforced norms informally. For example, if an individual's behavior did not conform to the social norm, friendship might be withdrawn. The second level of control was identified as parochial control, and referred to the control exerted by institutions, such as schools and churches. These first two levels of community control, while informal, allowed individuals to integrate and conform to the norms of a community (Heidt & Wheeldon, 2015). The third level of control identified by Bursik and Grasmick (1993) was that of public control, which focused on the ability of the neighborhood to secure resources from public and private agencies outside of the neighborhood, such as federal government agencies. These resources could include economic resources for things like schools, recreation centres, or law enforcement. Bursik and Grasmick (1993) argued that a neighborhood that was economically deprived, and was unable to secure these types of outside resources, would likely suffer from higher crime rates. They also posited that an area with high levels of poverty, but low crime rates, could exist, as long as they were able to secure assistance from outside agencies. This would occur because well-funded public institutions, such as schools, would be able to exert control in the neighborhood, while underfunded institutions would not.

Recent research on social disorganization has been largely supportive, particularly for the elements of low economic status, family disruption, weak social networks, high residential mobility, and low community organization, which have all been associated to higher crime rates - particularly in urban areas (Miethe, Hughes, & McDowall 1991; Sampson & Groves, 1989; Lowenkamp, Cullen, & Pratt, 2003; Hipp, 2007; Bellair & Browning, 2010; Kaylen & Pridemore, 2013). That being said, some authors have questioned the explanatory ability of social disorganization theory in rural areas due to the quality of police crime report data in these areas, and some inconsistent results from empirical research in these settings (Wiersma et al., 2000; Kaylen & Pridemore, 2013). Research on community control theory, and the ability of organizations to contribute to social order, is more scarce, but the research available is largely supportive (Triplett, Gainey, & Sun, 2003; Maeres & Korkran, 2007; Slocum, Rengifo, Choi, & Herrmann, 2013). While some community institutions

produce few crime-reducing effects, others are associated with notable decreases in crime. For example, organizations that aim to improve the well-being of families and children, such as schools, activity centers, or service providers, tend to have a positive effect on reducing property crime.

## ROUTINE ACTIVITY THEORY

Rather than focusing on social factors within a neighborhood, Cohen and Felson (1979) focused on the specific circumstances that led to an offender committing a criminal offence. Their theory, entitled routine activity theory, is strongly rooted in the belief that offenders make a rational, logical decision to commit a crime in an attempt to gain some benefit or pleasure. Instead of focusing on external factors, such as neighborhood composition, routine activity theory focuses on the individual, although it does not focus on individual-level characteristics. Routine activity theory does not posit that people are immune to the effects of their environment, and admits that sometimes human behavior is not completely rational or logical, but holds the belief that people have free will to commit or not commit crime and, therefore, make a conscious choice to commit an offence (Heidt & Wheeldon, 2015).

Three main principles were central to Cohen and Felson's (1979) routine activity theory. The first was that, like most people, offenders are interested in gaining quick, easy pleasure, while typically attempting to avoid imminent pain or punishment. Next, Cohen and Felson (1979) believed that the day-to-day activities in an individual's life, described as 'routine activities', would set the stage for illegal or criminal choices by an individual. Finally, they argued that criminal opportunities and crime rates could be affected by altering daily routines. More specifically, Cohen and Felson (1979) posited that crime would occur when there was a convergence in time and space between a motivated or likely offender, a suitable target, and the absence of capable guardianship.

While many criminologists have focused on what makes and differentiates a likely offender, routine activity theory believed that increasing crime rates were more closely associated to and the result of changes in the other two factors, namely a suitable target and the absence of a capable guardian. Cohen and Felson (1979) noted that, while theories, such as social disorganization, focused on social issues, like poverty, as a cause of crime, empirical evidence showed that poverty actually decreased in the United States after World War II. Theoretically, this should have resulted in a decrease in the crime rate over the same period of time; however, crime rates continued to increase throughout the 1950s and 1960s. This led Cohen and Felson (1979) to posit that the increased crime rate was due to changes in day-to-day activities or the 'routine activities' of people. Of particular interest to Cohen and Felson was the increased leisure time spent away from the home by many people, as well as the increased number of women entering the work force and spending time away from their homes. For Cohen and Felson, this had two important, unintended consequences that increased the opportunity for crime. First, homes were left without capable guardianship far more often than ever before, and, second, households had more discretionary money to spend on material goods that would attract property offenders.

Cohen and Felson (1979) showed that, as more women entered the work force, leading to higher levels of households without a capable guardian, the rates of rape, robbery, assault, and theft increased. A year later, in 1980, Cohen, Felson, and Land used routine activity theory to explain and

predict property crime rates in the United States, showing that property crime decreased in high density residential areas due, they believed, to higher rates of guardianship. Other studies have demonstrated that variations in the patterns of individual behavior has had an effect on crime by changing the likelihood that a motivated offender will come into contact with a suitable target in the absence of a capable guardian (McNeely, 2015).

One of the most prominent theories stemming from routine activity theory is lifestyle exposure theory, developed by Hindenlang, Gottfredson, and Garofalo (1978), which focused on individual victimization. While routine activity theory largely focused on macro level explanations for crime, lifestyle exposure theory focused on explaining individual level victimization. Hindenlang et al. (1978) believed that different demographic groups suffered from victimization at different rates because of their differences in 'lifestyle'. Lifestyle, as defined by Hindenlang et al. (1978), included various elements of routine daily activity, including school, work, and leisure activities, and posited that demographic characteristics, such as age, sex, race, income, or education, would all have an effect on what daily activities an individual would engage in. As an individual was placed into high-risk places, particularly in locations with motivated offenders, their likelihood of being a victim of crime would increase. Cohen, Kluegel, and Land (1981) further expanded on this theory by stating that five factors would affect the likelihood of criminal victimization; exposure, proximity, attractiveness, guardianship, and the properties of the crime themselves. Cohen et al. (1981) believed that individuals or objects that were more visible to motivated offenders would be more likely to be victimized. For example, individuals that spend more time away from their homes were at greater risk for victimization, not because they were doing anything wrong, but simply be leaving their homes unprotected and by being in locations where groups of people who may not know each other mix. Second, proximity referred to the distance between a motivated offender and a potential target. All things being equal, it was argued that individuals closer to a motivated offender were more likely to be victimized. For example, individuals living in a high-crime neighborhood had a much higher chance of being a target of crime due to their constant close proximity to motivated offenders. Third, Cohen et al. (1981) posited that victims or targets that were seen as attractive or desirable, whether due to the financial gain or the potential ease with which the target could be offended against, would lead to higher rates of victimization. This has been particularly true for economic crimes, like theft or burglary (McNeeley, 2015). Fourth, guardianship was defined as any security measure aimed at decreasing victimization, such as people or objects capable of preventing crime. Finally, Cohen et al. (1981) argued that opportunity could largely vary by the type of crime itself. Specifically, crimes, such as burglary or theft, could be explained by target attractiveness, guardianship, exposure, and proximity to a motivated offender.

There is a substantial amount of empirical evidence showing that both property and violent victimization increases with exposure, as outlined by McNeely (2015). Research has consistently found that victimization is far more likely when the proximity to motivated offenders is higher, particularly for crimes such as burglary, theft, and assault. The importance of attractive targets has received substantial support in academic literature, particularly for economic crimes (McNeely, 2015). For example, Miethe and Meier (1990) showed that homes with expensive items, such as household electronics, were more likely to be burglarized, and individuals who carried cash more frequently were at an increased risk for being the victim of a robbery and an assault. Increasing guardianship, either through methods like target hardening (alarms, bars on a window), or

individuals capable of preventing crime (such as security guards) has been shown to have a strong negative relationship with both property and violent crime (McNeely, 2015). For example, research has shown that simply locking one's doors, owning a dog, or having a neighbor watch their homes decreases the likelihood of being the victim of a burglary (Miethe & McDowall, 1993; Wilcox, Land, & Miethe, 1994). Tactics such as these underlie the next perspective commonly used to explain and reduce the occurrence of property crime, Crime Prevention through Environmental Design.

## CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

Crime prevention through environmental design, or CPTED, focuses on the relationship between individual factors and the physical environment. In particular, CPTED posits that the physical environment can play a significant role in determining an individual's behaviour (Jacobs, 1961; Jeffery, 1971), and if properly designed, can reduce the occurrence of crime (Sohn, 2016). Jeffery (1971) believed that architecture, lighting, and urban planning could play a significant role in either reducing or increasing criminal activity; a well-lit area, for example, would likely be safer than a dark alleyway, and an open, highly visible area would be safer than a closed-off area with architecture blocking lines of sight. Jacobs stated that for a street to be safe, it "must have three main qualities. There must be a clear demarcation between what public space is and what private space is. There must be eyes upon the street; eyes belonging to those we might call natural proprietors of the street. The building on a street equipped to handle strangers… must be oriented to the street. The sidewalk must have users on it fairly continuously, both to add to the number of effective eyes on the street and to introduce people in buildings along the street to watch the sidewalks in sufficient numbers" (1961: 31).

Much of the research on CPTED focuses on the four main principles of territory, natural surveillance, activity support, and access control (Cozens & Love, 2015; Sohn, 2016). The principle of territory focuses on urban design that clearly delineates private space and public space, along with the belief that people will protect their own private space, and will respect the private space of others. Research by Brown and Altman (1983) showed that applying concepts of territoriality reduced the rates of burglary in residential areas by affecting the evaluation of a target by potential offenders. Natural surveillance refers to the use of light, windows, door locations, and landscaping to improve visibility and increase the likelihood of spotting offenders in the area. For example, removing shelves and posters blocking the windows of a business to improve visibility from and to the outside could reduce the chances of a robbery, while improving outdoor lighting and trimming bushes and hedges might improve safety in a public park. Improving surveillance and lighting in an area has also been shown to improve neighborhood safety (Welsh and Farrington, 2002). Activity support focuses on the promotion of safe public spaces for outdoor activities, mainly through public planning at the neighborhood level. For example, improving sidewalks and lighting along public corridors, supporting public activities in parks and large public spaces, and improving pedestrian movement in a neighborhood have all been linked to reducing crime (Sohn, 2016). Finally, the last principle of CPTED is that of access control. Access control attempts to reduce crime by denying offenders access to areas with potential targets for crime. It also attempts to increase the sense of risk to potential offenders in an area in order to deter potential offenders. Access control can often include target hardening methods, such as bars on a window, high fences, or alarm systems. At a

neighborhood level, it could include limiting through traffic, limiting parking, or creating other barriers or restrictions. Previous research has shown these methods to be effective in reducing crime (Yang, 2006; Armitage, 2010).

Since its emergence, a number of authors have contributed to the development and improvement of CPTED. For example, environmental criminology, developed by Brantingham and Brantingham (1981), Broken Windows theory, developed by Wilson and Kelling (1982), and situational crime prevention (Clarke, 1997, Cornish and Clarke, 2003) are all examples of theories building on the ideas of CPTED. Further, CPTED theories are supported by a number of governments around the world, including the United States, Canada, Australia, and the United Kingdom. That being said, much of the empirical research on CPTED, and the numerous theories developed since the emergence of CPTED, are based on individual case studies, and are somewhat limited in their scope (Cozens & Love, 2015). However, many of those studies focusing on property-related offences show strong evidence of the positive effects increased security has had on reducing crime rates (Farrell, Tilley, Tseloni, & Mailey 2008; Farrell, Tseloni, Mailey & Tilley, 2011; Bassmann, 2011). For example, the installation and use of immobilizers in automobiles has had a significant positive effect on reducing car theft in the United States (Fujita and Maxfield, 2012), the United Kingdom (Clancy and Lulham, 2014), and Australia (Mayhew, 2012) simply by reducing the number of suitable targets available for theft.

## Socio-Demographic Factors of Property Crime

While socio-demographic features of a neighborhood, such as population density, residential mobility, and gender and age distributions have often been a focus of study when attempting to explain crime rates over the past several decades, it is becoming apparent in more recent literature that there are substantial methodological challenges with this process. In particular, past research has focused on the demographic features of large areas, such as a city, or even a state, and has tried to link these macro-level demographic features to crime rates. It is becoming more and more apparent that these types of macro-level analyses are not terribly accurate in explaining crime. Instead, more contemporary literature has shifted to focusing on micro-levels of analysis. Rather than looking broadly at an entire city, researchers are starting to narrow their focus to a few blocks, a single street, or even a single street corner in an attempt to more accurately explain crime (Boessen and Hipp, 2015).

### POPULATION SIZE AND DENSITY

Population density, often defined as the number of people living in one square kilometer in Canada, is also sometimes defined by the number of people living in a dwelling, or the number of people per room in a dwelling (Harries, 2006). Much of the research looking at the relationship between crime and population density focuses on a particular type of offence, such as murder or some other violent crime, drug crimes, or property crime. The results of these reports can vary greatly, with some seeing an association, while others find no relationship; however, the majority of reports tend

to suggest that most types of crimes appear to increase when population density increases (Ackerman, 1998; Harries, 2006).

While population size and density within a city has often been noted as having an effect on crime rates, particularly violent crimes, just how substantial that relationship is has been debated in the research literature for decades (Harries, 2006). In fact, the relationship between population and crime is not as simple as it seems, and the results from empirical research have been mixed. This could be due, in large part, to the methodological challenges in determining the relationship between crime and population, such as the issue of clearly identifying the boundaries of a city or a particular urban area. For example, there may be several smaller 'cities' in a contiguous urban area, or a mix of regions, municipalities, or boroughs. Crime in these districts can be difficult to separate from one city to another, particularly cross-jurisdictional crime or when trying to account for individuals living in one city while working or travelling in another. For instance, some authors have pointed out the problem of crime 'spill-over', where offenders from a larger city will commit crimes in smaller neighbouring communities (Ackerman, 1998). Further complicating the issue, the socio-economic status of a neighborhood can also have a significant effect on the amount and type of crime an area experiences (Harries, 2006; Hipp & Roussell, 2013). For example, a cluster of high density, but very affluent homes could see no difference in average crime rates, while a poorer, high density area might see an increase. Hipp and Roussell (2013) tried to solve this issue by looking at micro density and macro density, and found support for the theory that crime rates increase with density at the macro level for crimes like robbery and theft, albeit in a non-linear fashion.

While the research literature has shown that population density can have varying effects on different types of crimes, the results from empirical research is somewhat mixed. For example, the results on the effect of population density can change depending on the proximity of the jurisdiction to other major cities or the socio-economic status of the neighborhood. That being said, there seems to be at least some support for the idea that property crimes, such as robbery and theft, increase with population density (Hipp & Roussell, 2013).

## RESIDENTIAL MOBILITY

The relationship between crime and residential mobility has long been a topic of discussion for sociologists and criminologists. Numerous sociologists, as discussed previously with social disorganization theory, pointed out that high levels of residential mobility, often linked to low levels of home ownership, could lead to crime due to a breakdown of interpersonal relationships and connections to social institutions in the community. This, in turn, could impede social control within a neighborhood and reduce the willingness of a neighbour to intervene on the behalf of another resident, thus contributing to higher crime rates. Research appears to support this theory by showing that high levels of residential mobility is often related to higher rates of crime, particularly various types of property crime, such as robbery, burglary, motor vehicle theft, and larceny (Boessen & Hipp, 2015). This trend is especially true for adolescents, who exhibit higher rates of criminal behavior, particularly minor offences and drug offences, when compared to peers who do not have a high level of residential mobility (Porter & Vogel, 2013). That being said, Porter and Vogel (2013) also stressed the importance of individual, family, and neighborhood factors that

needed to be accounted for when attempting to make the link between residential mobility and crime.

Interestingly, crime rates can often drive increased residential mobility, where individuals seek to leave a neighborhood because of its real or imagined high crime rate (Hipp, Tita, & Greenbaum, 2009). As the area becomes less desirable, and as more people leave the area, home values often decrease, leading to a concentration of poverty and, along with it, higher rates of crime (Tita, Petras, & Greenbaum, 2006). Further complicating the problem, if the people moving into the neighborhood differ in ethnicity from the current residents, higher crime rates could occur due to increased ethnic heterogeneity (Hipp, Tita, & Greenbaum, 2009). This creates what Hipp, Tita, and Greenbaum (2009) described as a self-perpetuating cycle or feedback effect of crime in a neighborhood.

In effect, the research literature largely supports the idea that high levels of residential mobility, or people frequently moving in or out of a neighborhood, can cause an increase in crime rates, particularly property crime rates, such as theft, robbery, burglary, and motor vehicle theft (Boessen & Hipp, 2015). According to the literature, it would appear that residential mobility has a meaningful effect on youth and adolescents in particular, who often exhibit higher rates of criminal behavior when experiencing higher levels of residential mobility. This increase in crime can have many negative outcomes for a community, and can often cause a neighborhood to become undesirable for residential renters or buyers, leading to decreased home and property values, which, in turn, can contribute to higher levels of poverty and higher levels of crime.

## THE NUMBER AND DENSITY OF POLICE

There are few jobs that undertake a larger variety of tasks than a police officer. In addition to responding to calls for service from the public, police also serve as first responders in emergencies and accidents, undertake patrol duties in neighborhoods to look out for crime, act as caretakers for the city and community, and often serve as mediators in non-criminal disputes between residents and strangers. It should be no surprise then that the number and density of police officers in a city is often an area of focus for researchers trying to explain crime rates. Police officer tasks often fall into one of two categories; reactive policing, such as responding to 9-11 calls, or proactive policing, such as setting up a roadblock to search for impaired drivers or patrolling a neighborhood hot spot. Obviously, when police officers spend the majority of their time serving in their reactive capacity, it leaves little or no time for proactive work, such as focusing on problem areas or chronic, prolific, or priority offenders. This can be a significant problem for policing agencies, as research has shown that focusing on these types of offenders and specific public safety issues is a key strategy in reducing crime (Cohen, Plecas, McCormick, & Peters 2014).

That being said, gauging individual police officer productivity has always been an issue for researchers (Bonkiewicz, 2016). For example, counting the number of calls for service as a measure of police performance can be problematic, as one call for service might take an officer 20 minutes to deal with, while another might take two or three hours. Looking at the number of arrests or traffic citations by an officer is problematic for similar reasons. Moreover, counting the number of arrests or tickets issued is a decent indication of a police output, in that it can measure what a police officer

is doing, but it is commonly not a very good indicator of a police outcome or a measure of what effect that particular action has on the crime rate or making a community safer. Furthermore, authors have pointed to a number of possibilities that could account for differences in police officer productivity, including individual factors (Shane, 2011), operational variables, organizational variables, and community variables (Bonkiewicz, 2016), making it difficult to compare one officer to another, or one department to another.

Still, it is clear that the number of police officers in a city can have serious implications for how that police detachment or department operates. This is often described in terms of the number of police officers per capita, or the 'cop to pop' ratio. Having too few police officers in a given area can be problematic for a number of reasons. For example, researchers have posited that police may resort to 'load shedding' in a high crime jurisdiction with low policing numbers, where officers continue to respond to and record serious crimes, but decide to let less serious offenders off with just a warning or not record the crime at all due to time and resource constraints (Maxfield, Lewis, & Szoc, 1980). Others, such as Bonkiewicz have looked at the number of crimes per police officer, or 'crime per cop ratio', to argue that high crime cities or areas require a larger police presence to be effective, stating that the "crime to cop ratio can dramatically effect officers' productivity" (2016: 22).

One of the most common responses to a crime problem within a city is the call for the hiring of more police officers. It is logical to assume that more police on the street would deter crime, and it is often a popular strategy with the public, who usually feel safer when they see more police on patrol (Caudill, Getty, Smith, Patten, & Trulson, 2013). Similarly, Becker (1968) argued that an increased police presence would raise the likelihood of an offender getting caught, which would lead to lower criminal activity. However, the relationship between police and crime is not always a negative relationship, as some studies have shown that higher numbers of police officers often have no effect or can actually increase crime rates, in that more police mean more crime is being detected, which means a higher crime rate, particularly in the short-term (Eck & Maguire, 2000). It should be noted that these studies have been criticized for not accounting for the difference between correlation and causation (Lin, 2009). Recent research that has attempted to control for the correlation/causation issue has often found that an increase in the number of police officers decreases crime by roughly the same amount. In other words, a 10% increase in the number of police officers would decrease crime by about 10% (Levitt, 2002). With this in mind, using cop to pop ratios as a potential explanation for variations in property crime rates must be done cautiously.

## Socio-Economic Factors of Property Crime

One of the leading explanations for property crime rates has historically been socio-economic factors, such as household income levels, unemployment rates, and education levels. However, crime rates have not always followed economic trends. Instead, there have been different periods of time where strong economic conditions occurred during a period of rising crime rates, such as the 1950s and 1960s. Conversely, there have been periods of poor economic conditions and high unemployment rates that have not seen a corresponding increase in crime rates, such as the late 2000s during the US/Global Financial Crisis (Clancey & Lulham, 2014).

## LOW INCOME OR POVERTY

The relationship between neighborhoods suffering from high levels of poverty and crime rates has often been the subject of criminological study. As Chester (1976) pointed out, poverty was seen as a contributing factor to crime rates since the time of Plato and Aristotle. However, while some studies have found that poverty, as measured by variables including income levels and proportion of public housing, is associated with more crime (Shaw & McKay, 1942; Chester, 1976; Bursik & Grasmick, 1993; Ackerman, 1998; Peterson, Krivo, & Harris, 2000; Hannon, 2002), other studies have not found this relationship (Slocum et al., 2013; Boessen & Hipp, 2015). That being said, it would appear that adults living in neighbourhoods with higher levels of poverty, social disorder, and disorganization are at higher risk for engaging in or being a victim of crime, even after accounting for demographic characteristics (Aaltonen, 2011; Sciandra, Sanbonmatsu, Duncan, Gennetian, Katz, Kessler, Kling, & Ludwig, 2013). Moreover, individuals living in poverty are often exposed to property crime far more than those in the general population (Larsson, 2006). This largely supports theories like social disorganization, which state that poverty weakens a community's social bonds and social controls, leading to a higher proportion of criminal offenders in a community. These types of findings also frequently mention routine activity theories as an explanation for this relationship. Interestingly, as Hannon (2002) pointed out, poverty can also simultaneously lessen the opportunities for property crime by reducing the presence of worthwhile or valuable targets for offenders. This could be, in part, an explanation for some of the varied results seen in the research literature on the relationship between property crime and poverty.

In a unique residential mobility experiment from the United States, families living in high-poverty public housing in five different major cities (Baltimore, Boston, Chicago, Los Angeles, and New York) were given the opportunity to move to a less-distressed neighborhood using a housing voucher. Data collected from this experiment initially showed significant decreases in both violent crime arrests (32%) and property crime arrests (33%) for individuals who moved out of the high-poverty neighborhoods (Sciandra et al., 2013). However, follow up research 10 years after the initial move showed no statistically significant difference in property crime rates for individuals who were selected to move away from the high-poverty neighborhoods. This is similar to the results seen in many of the studies on social disorganization previously discussed. These results suggest that offender characteristics may play more of a role than neighborhood characteristics when it comes to property crime, although the research supporting this position was limited in scope.

In sum, empirical findings on the relationship between crime and poverty have been mixed over the past several decades. While some research has found a relationship between higher crime rates and low income, other research has not reached the same conclusion. Still, most researchers would agree that as levels of poverty, social disorder, and social disorganization increase, the risk of engaging in criminal behaviour or being a victim of crime increases. While it would appear that those living in poverty are often exposed to property crime at higher levels than the general population, some research has found the opposite to be true. This contradiction is commonly explained by the notion that those living in poverty and those locations characterized as being in poverty often have the least valuable items to steal.

## INCOME INEQUALITY

Related to the issue of poverty, much of the academic literature focuses not just solely on individual poverty, but on the level of inequality between the poor and the wealthy in the same city or community. Again, this is not a new area of study, as early criminologists, such as Bonger (1916; as cited in Chester, 1976) pointed out that poverty in and of itself is not what causes crime. Instead, Bonger argued that crime was caused by the contrast between the poor and the rich. This has been reflected in modern literature as well, where researchers have consistently found strong relationships between crime, particularly property crimes like burglary, motor vehicle theft, and robbery, and income inequality (Kposowa, Breault, & Harrison, 1995; Neumayer, 2005; Boessen & Hipp, 2015). Interestingly, as Chester pointed out (1978), this problem is often perpetuated by interpersonal contacts between the lower class and the middle or upper class, and is also constantly displayed and discussed in the media, in television, and in movies. Whether it is true or not, it is often pointed out through the media that anyone can move from 'rags to riches' or live the American dream, but clearly this does not happen to everyone living in poverty. Chester (1976) argued that it was these types of interactions that led to frustration, which motivated the lower classes to commit a disproportionately high rate of crime. The idea of frustration caused by economic inequality leading to criminal activity, both property and violent crime, has been repeated in numerous studies (Hagan & Peterson, 1995; Neumayer, 2005); however, many of these authors also noted that the evidence was not always conclusive, and often limited in support of the relationship between income inequality and crime.

Income inequality, or the difference between the incomes of the wealthy and poor in the same jurisdiction, has been shown to have a strong effect on property crime in the contemporary research literature. In particular, many researchers have found that crimes, such as burglary, motor vehicle theft, and robbery, were linked to income inequality (Kposowa, Breault, & Harrison, 1995; Neumayer, 2005; Boessen & Hipp, 2015). However, it should be noted that some researchers have found more limited support for this relationship (Hagan & Peterson, 1995; Neumayer, 2005). It is likely that rather than being an independent explanation for property crime, income inequality interacts with other socio-economic factors, such as employment opportunities.

## UNEMPLOYMENT

Research on the relationship between crime and unemployment is extensive, spanning multiple academic disciplines, including contributions from economists, criminologists, sociologists, and more. Theoretical literature, such as social disorganization theory, rational choice theory (Becker, 1968), or strain theory (Agnew, 1992), typically agreed that there was a positive relationship between unemployment and crime for a variety of reasons. However, recent empirical research has been far more inconsistent (Cook & Watson, 2014). The reasoning for this inconsistency is varied, with some pointing to issues with data, while others dispute the proper methodology or modeling for analyzing the issue (Cook & Watson, 2014). Based on their research, Cantor and Land (1985) argued that unemployment did not have a linear effect on crime, but that crime often increased during times of low unemployment due to the opportunity effect (more desirable and accessible targets), and also increased during periods of high unemployment due to the relationship between

crime and poverty (e.g. more motivated offenders). They went on to state that opportunity is 'pro-cyclical', meaning that crime could increase during good times, while motivation was 'counter-cyclical', meaning that crime could also increase during bad times (Cantor & Land, 1985). These findings are in line with the theories discussed previously, such as routine activity theory and social disorganization theory.

Clearly, the relationship between unemployment and property crime is quite mixed in the empirical literature. Again, while some researchers have found that higher rates of unemployment have contributed to higher rates of property crime (Becker, 1968; Agnew, 1992), other research has drawn much more inconsistent findings (Cook and Watson, 2014). For example, while unemployment rates were high during the financial collapse in the United States in 2008, property crime remained low. Meanwhile, when unemployment rates were very low in the 1960s, property crime rates remained high. There are several possible explanations for why property crime rates remain low during times of higher unemployment. For instance, it is possible that people remain at home more often when unemployed leading to the presence of guardianship of property. As a result, less property crimes, such as break and enter or motor vehicle theft, occur. Alternatively, it is also possible that during times of high unemployment, people spend less money on expensive items that might be desirable to steal, such as small electronics. Given this, it is possible that low unemployment has the opposite effect. Low unemployment likely results in more people being home less often and spending more money on goods that would be desirable to a property crime offender.

## EDUCATION

It would appear that a low level of education is a very powerful predictor of crime. For example, research has shown that over 40% of inmates in American prisons had not completed high school, compared to less than 20% of the average population. Similarly, in the UK, research has demonstrated that nearly 50% of new prisoners had no educational qualifications compared to just 15% in the general population (Bell, Costa, & Machin, 2015). This outcome was also found by Aaltonen (2011), who showed that lower levels of educational attainment were often associated with higher levels of crime, and further stated that education and unemployment was a strong predictor of criminal activity. Lochner and Moretti (2004) provided substantial evidence of the relationship between lower levels of education and higher rates on crime and demonstrated that each academic year of schooling successively decreased the likelihood of incarceration later in life. Moreover, research from the United Kingdom indicated that, after increasing the high school graduation age from 15 to 16, criminal convictions decreased (Machin, Marie, & Vujic, 2011). Even when attempting to control for other variables, such as income, unemployment, or occupation, education has often been shown to be a key factor in determining criminal activity, although these other variables did have some effect (Aaltonen, 2011; Maynard, Salas-Wright, & Vaughn, 2015).

Low levels of education are associated with numerous types of crimes, including property crime (Aaltonen, 2011). Of course, there is some overlap between individual traits related to poor academic performance and crime. Specifically, individual traits, such as low self-control, lower intelligence, or the inability to delay gratification, are linked to both poor academic performance

and criminal activity (Aaltonen, 2011). Still, one study concluded that high school dropouts were two to three times more likely to get arrested for theft than an individual who completed high school, even when controlling for other demographic variables (Maynard et al., 2015).

Many of the socio-economic factors that are often discussed as having a possible link to property crime, such as unemployment, poverty, education, residential mobility, and income inequality, have had mixed findings in the empirical research literature in that there are a large number of research articles both demonstrating and refuting a relationship between one of these variables and property crime within a community. This issue is especially true for the variables related to low income, poverty, and unemployment. Still, one variable that was repeated by multiple sources as having a positive relationship with property crime was income inequality. Several research studies have pointed to higher rates of income inequality being linked to higher rates of various types of property crimes within a community. Similarly, low levels of education also had a positive relationship with increased property crime, but many researchers cautioned that low levels of education are also related to other confounding factors, such as unemployment, low income, or occupational success. However, even when controlling for these other factors, the research suggests that the higher the proportion of members in a community with low levels of education, the higher that community's property crime rate.

## Neighborhood Composition Relating to Property Crime

The final major contributing factor is neighborhood composition and the level of social disorganization in a community. In particular, research has shown strong links between illegal drug use, homelessness, mental health issues, and property crime. However, these are often not direct causal links, but are often highly interrelated to one another. For example, the homeless population has very high rates of illegal drug use and mental health issues, making it difficult to disentangle one from the others.

### ILLEGAL DRUG USE

Illegal drug use is a major problem in many cities around the world, including North America, Europe, Asia, and Australia. Vancouver is an example of this, with a large and long-standing drug scene in the Downtown East Side. A high proportion of users involved in the drug lifestyle have reported involvement in either property crime, drug crime, or both, in a number of empirical studies (Iritani, Hallfors, & Bauer, 2007; United Nations Office on Drugs and Crime, 2009). In fact, one study concluded that drug users offend up to four times more than non-drug users (Sutherland, Sindicich, Barrett, Whittaker, Peacock, Hickey, & Burns, 2015). Wilkins and Sweetsur (2010) outlined several reasons why frequent drug use often leads to property crimes. First, the 'drug-crime' model argues that drug users resort to property crimes to pay for expensive drugs. Second, the 'crime-drug' model posits that the criminal lifestyle encourages drug use, typically through peer relationships or party lifestyles. Third, the 'common-cause' model, states that both drug use and property crime are caused by overlapping psychological or social issues, such as unemployment, delinquency, or social exclusion. Finally, the fourth explanatory model outlined by Wilkins and

Sweetsur (2010) is that of 'coincidence', which argues that drug use and crime are not connected in any way.

The exact scope of the relationship between drug use and crime can be difficult to measure, and can be specific to different types of drugs and different types of crime. For example, the rates of violent offences vary substantially from property crime offences committed by drug users, and similarly, drugs, such as opioids, often have a much stronger correlation to property crime than a drug like marijuana (Sutherland et al., 2015). Further, when considering this relationship in Australia, Clancy and Lulham (2014) pointed out that international events, such as the war on terror or the invasion of Afghanistan, or domestic policies, such as the introduction of safe injection sites, had a substantial impact on the availability of heroin in Australia that, in turn, led to a decline in theft, but an increase in robberies. Others have pointed out that it is more important to look at the amount of money a property crime offender can generate through crime or what fences or illegal markets are paying for stolen property, rather than simply looking at the overall crime numbers. For example, a shoplifter may need to commit dozens of crimes to get the same amount of money as someone else can get from just one robbery or burglary (Wilkins & Sweetsur, 2010).

While some have identified zero-tolerance drug policies as a leading cause for crime rate decreases in the United States, particularly in property-related offences, these findings should be taken with caution. Clancy and Lulham (2014) pointed out, for example, that while changes in drug policy may have contributed to the decline in crime, it would not explain the long-term decline experienced over the past decade or more. Further, it should be noted that several countries, including Canada, have seen similar decreases in crime without zero-tolerance drug policies. Instead, some believe that increasing the funding for drug treatment and education programs would have a similar effect of reducing property crime without the necessity of putting drug users into prisons (Wilkins & Sweetsur, 2010). In effect, these researchers point to numerous studies showing the effectiveness of drug treatment programs, such as methadone maintenance, as an effective way of reducing levels of criminal activity by drug addicts while dealing with addiction issues. Given these findings and the findings of many other research studies, it remains unclear the strength of the relationship between a community's property crime rate and its level of illicit drug use. For example, the research literature seems to indicate that the rates of illegal marijuana use would likely have little effect on the property crime rate in a community, while the rate of heroin or methamphetamine use would likely have a far more positive correlation with the property crime rate. Similarly, property crime, such as motor vehicle theft, could provide far more income for an individual than shoplifting, in that the shoplifter would likely have to commit dozens of crimes to collect the same amount of money as the individuals stealing a motor vehicle.

The majority of researchers support the idea that an increased rate of drug use, particularly harder drugs, like heroin or methamphetamines, can lead to higher rates of property crime within a city (Iritani, Hallfors, & Bauer, 2007; United Nations Office on Drugs and Crime, 2009; Sutherland et al., 2015). That being said, the relationship can vary depending on a number of variables, including the type of property crime, the type of drug used, and other external factors. As a result, it is not surprising that most researchers support the approach of drug treatment and housing over enforcement or zero-tolerance policies.

## HOMELESSNESS

Research has given considerable attention to the numbers of homeless individuals involved in the criminal justice system. For example, recent studies examining prison populations in the United States have found that upwards of 25% of inmates have had a history of homelessness, poor health, and disadvantaged socioeconomic status, roughly six times greater than the general population (McNiel, Binder, & Robinson, 2005; Greenberg & Rosenheck, 2008), while others have identified homelessness as a powerful predictor of crime (Somers, 2013). Further, the most common type of crime committed by inmates, and offenders more generally, is property crime, which Greenburg and Rosenheck (2008) suggested was 'survival behavior'. One of the biggest challenges when considering the effect of a city's homeless population on crime rates is getting an accurate count of the homeless. Due to the challenges inherent in the population itself, such as a distrust of authority, problems with defining homelessness, as well as many methodological issues, getting an accurate number has proven to be extremely difficult (Heerde & Hemphill, 2014). That being said, some researchers have estimated that over 500,000 people are homeless on any given night in the United States (Fargo, Munley, Byrne, Montgomery, & Culhane, 2013). Further, and related to the earlier discussion on drug abuse, research has shown higher rates of drug use within the homeless population, which further compounds the problem (Fargo et al., 2013).

Although explaining the causes of homelessness is far beyond the scope of this paper, authors have pointed to numerous causes, such as poverty, residential mobility, high median rent costs, and unemployment (Fargo et al., 2013). Greenberg and Rosenheck (2008) outlined several reasons why the homeless population have higher rates of involvement in the criminal justice system. First, they pointed out that homelessness may drive individuals to crime simply to survive. Second, they argued that the high rates of drug abuse, poor health, or mental health issues seen in the homeless population may increase their involvement in the justice system. Next, they posited that socioeconomic factors, such as a poor education, could be a cause. Finally, they suggested that the relationship was bi-directional, and that involvement in the criminal justice system could contribute to homelessness through the damaging of family and community ties or restrictions to employment or housing opportunities after being in custody.

In addition, the issue of homeless youth has been covered extensively in the academic literature, particularly homeless youth who have suffered family violence or abuse. This highly marginalized group often has a number of barriers to finding safe housing, including basic education, employment, or treatment, which might contribute to their risk of participating in property crime (Heerde & Hemphill, 2016). Estimates for the United States posited that between 1.6 and 2.8 million adolescents were considered homeless (Terry, Bedi, & Patel, 2010), while Rachlis, Wood, Zhang, Montaner, and Kerr (2009) estimated that roughly 10,000 adolescents were homeless on any given night in Canada in 2001. This research has also shown that homeless youth engaged in, and were victims of, numerous types of crime, including property crimes (Heerde & Hemphill, 2014). For example, Heerde and Hemphill (2016) estimated that two-thirds of homeless youth had engaged in at least one illegal act. Similar to the adult homeless population, research has also shown that drug use among homeless youth is considerably higher than in the general population (Heerde & Hemphill, 2014).

Halfway houses in Canada are operated by private, non-governmental organizations or individuals, and are used to house 15 to 30 adult criminal offenders on day parole in the community. These types of community-based homes are used in several countries around the world, including the United States, United Kingdom, Japan, and Singapore (Brown, 2010). These types of facilities are often used to reintegrate offenders into back into the community, or are used to house low risk offenders as an alternative to prison. As Brown (2010) pointed out, halfway houses are an important part of the reintegration process for offenders, who often have trouble securing and maintaining housing in the community after release from prison. It also allows for corrections to supervise and assist in programming for offenders after release. Brown (2010) also argued that, although there is very little research on the subject, there is no evidence showing that the presence of a correctional halfway house has an effect on crime rates in the community. However, there is growing concern that illegal halfway houses or unlicensed halfway houses can increase an offender's risk of recidivism, particularly around drug and property offences, rather than serving as a transition point between a criminal lifestyle and a pro-social lifestyle.

The majority of research supports the idea that higher rates of homelessness can cause an increase in property crime in a neighborhood (Somers, 2013). This is an important finding for cities trying to deal with large homeless populations. It has also been pointed out that the rates of homelessness for individuals suffering from mental health issues, and/or drug addiction issues have also both been linked to increased property crime rates in some circumstances. Whether these individuals commit crime to survive, commit crime to support a drug habit, or commit crime due to other challenges, such as a lack of education or employment, it is clear that homelessness has a positive correlation with property crime in a community. This relationship is especially true for homeless youth, who comprise a vulnerable and at-risk group. Still, the debate tends to focus on the strength of this correlation.

## MENTAL HEALTH ISSUES

Often related to the previous discussion of homelessness, individuals with mental health issues are at very high risk for being arrested or otherwise involved with the criminal justice system (Somers et al., 2013). In fact, it is not at all uncommon to see visible populations of people suffering from mental health issues as part of the homeless population in the Lower Mainland of Vancouver, British Columbia. However, it should be noted that there is very little evidence to support the idea that there is a direct causal relationship between mental health issues and crime. Instead, as Somers et al. (2013) pointed out, it is far more likely that there is an indirect relationship, overlapping with other issues, such as drug addiction, poverty, social marginalization, unemployment, or criminal victimization. In the past, the majority of the population of mentally ill individuals were treated in hospitals; however, the number of beds available in these facilities has continued to decline in both the United States and Canada (Markowitz, 2010). As hospitals have closed, the majority of individuals suffering from various mental health issues were discharged into the community. As Markowitz (2010) pointed out, the majority of these individuals suffering from mental health issues ended up living in the community with little or no supervision or support, which can lead to a number of issues, including criminal behavior. In effect, it appears that the

research literature tends to view mental health issues as an additional or contributing factor in explaining property crime rates, rather than as a main or leading factor.

In sum, the majority of the research literature supports the idea that neighborhood composition can have an effect on property crime rates, although to varying degrees. For example, as discussed above, the relationship between drug use and the property crime rate in a community can vary depending on the type of drug used, as stronger narcotics, such as heroin and methamphetamines, have more of an influence than softer drugs, like marijuana. Most of those same researchers support a treatment approach to dealing with the drug problem, rather than zero-tolerance policies, such as those used in the United States. Homelessness was also strongly linked to increased property crime, particularly when considering the high percentage of homeless people dealing with concurrent drug addiction or mental health challenges. Mental health issues, on their own, do not appear to directly contribute to property crime rates, but, when combined with overlapping issues of poverty, homelessness, addiction, unemployment, or marginalization, it is clear that mental health issues within a community should not be ignored when trying to understand property crime rates.

## SUMMARY OF THEORETICAL EXPLANATIONS FOR PROPERTY CRIME FLUCTUATIONS

In conclusion, there are a number of theories that attempt to explain the causal factors related to property crime and the social, economic, and demographic variables that contribute to increases or decreases in the rate of property crime in a community. However, one theory that does provide some context and can contribute to an understanding of the significant increase in property crime witnessed throughout North America in the late 1990s, as well as the significant drop that occurred in the 2000s, is routine activity theory, and the related situational crime prevention theories (Clancy, 2014). According to these theories, the decline in property crime in Canada and the United States over the past several years could be explained by an overall improvement to personal and property security, such as home alarms or immobilizers in motor vehicles, as well as a heightened awareness among individuals for their own personal safety. Many of these advancements were created in response to the high property crime rates seen in the late 1990s. Immobilizers, for example, were created in response to skyrocketing motor vehicle theft rates, and were immediately shown to be very effective in preventing motor vehicle thefts. Since that time, more and more automobile manufacturers include immobilizers as a standard feature in new vehicles, and along with an increased adoption rate, motor vehicle theft rates have substantially declined (Clancy, 2014). Of note, Transport Canada has made immobilizers mandatory for all new vehicles. In effect, these types of strategies aim to reduce the opportunity for a criminal to commit an offence by making it either difficult or impossible to be successful.

Given these innovations, and the contributions of police-based crime reduction strategies, it was not surprising there has been a significant decline in certain types of property crimes, like motor vehicle theft or break and enters, throughout the LMD in the 2000s. However, there remains a large number of property crimes that are relatively easy for an offender to commit, such as theft from vehicles, other theft under $5,000, and mischief to a property, particularly around commercial areas, where the goal is to be opening and inviting to potential customers. For example, a parking

lot full of motor vehicles with owners inside a shopping mall for extended periods of time creates an excellent opportunity for potential offenders. Likewise, mischief to property can be more difficult to prevent in a commercial area where few people are around late at night, creating an easy opportunity for an offender. As will be demonstrated below, it is these types of crimes that make up, for the most part, the majority of recent property crime in the LMD.

## Methodology for the Analysis of Property Crime in 2015 in 22 Lower Mainland Districts

The data for the property crime profiles was provided by "E' Division RCMP. In addition to the nature and quantity of property crime in each jurisdiction in 2015, the specific location for each offence was also provided. This data was geocoded within ArcMap. Point maps were created to indicate the exact location where each offence originated from, while density maps were created to visualize those areas with the greatest concentration of offences.[9] All of the density maps were created using the same color scheme, ranging from clear representing the lowest level of density, to dark green, light green, yellow, orange, and red, which represented the highest level of density of property crimes.

In terms of the bivariate, multivariate, and municipal-level analyses, in its raw form, the property crime rate demonstrates significant skew. As a result, it was subjected to a logarithmic transformation. This transformation was successful in normalizing the variable. In addition, the structural variables used in this study were all derived from the 2011 National Household Survey (NHS), which is the most up-to-date source of census information in Canada. The definition of each of the variables is provided in Table 6.

[9] Only the density maps are provided in this report. The point maps were used to understand the spread of property crimes throughout a jurisdiction.

**TABLE 6: VARIABLE DEFINITIONS**

| Variable | Definition |
|---|---|
| Population Density | Population per square kilometer |
| Population Change 2006-2011 (%) | Percentage change in population between 2006 and 2011 |
| Young Males – Aged 15-24 (%) | Percentage of population comprised of males aged 15-24 |
| Unmarried (%) | Percentage of population that is aged 15 and over that is not married and not living with a common-law partner |
| Mobility - Last 5 Years (%) | Percentage of population that has moved into the area in the past 5 years |
| Immigration (%) | Percentage of population that was born outside of Canada |
| Recent Immigration – Last Five Years (%) | Percentage of population that immigrated to Canada in the past 5 years (2006-2011) |
| Recent Immigration – Last Ten Years (%) | Percentage of population that immigrated to Canada in the past 10 years (2001-2011) |
| Visible Minority (%) | Percentage of population comprised of persons, other than aboriginal peoples, who are non-Caucasian in race or non-white in colour |
| Non-Citizens (%) | Percentage of population that is non-permanent residents |
| Linguistic Isolation (%) | Percentage of population that cannot speak English or French |
| Aboriginal Population (%) | Percentage of population that is aboriginal. Aboriginal refers to persons that are First Nations (North American Indian), Métis or Inuk (Inuit) and/or are Registered or Treaty Indian, (that is, registered under the Indian Act of Canada) and/or are members of a First Nation or Indian band |
| Median Household Income | Median income of households |
| Low Income Families (%) | Percentage of families that are characterized as low income after tax |
| Unemployment Rate | Percentage of population that is aged 15 and over that is not employed |
| Labour Force Participation (%) | Percentage of population that is aged 15 and over that is not in the labour force |
| Less Than High School Education (%) | Percentage of population that is aged 15 and over that did not complete high school |
| Renters (%) | Percentage of households that rent their dwellings |
| Housing Condition - Major Repairs (%) | Percentage of occupied private dwelling in need of major repairs. For examples of major repairs, please consult https://www12.statcan.gc.ca/nhs-enm/2011/ref/guides/99-014-x/99-014-x2011007-eng.cfm |

The units of analysis for the analyses presented below are dissemination areas (DA). Dissemination areas are small areas composed of one or more neighbouring dissemination blocks, with a population of 400 to 700 persons. It is the smallest standard geographic area for which all census data are disseminated. All of Canada is divided into dissemination areas.

The first step in understanding the effect of any variable is to analyze it alone in relation to the dependent variable of interest, in this instance property crime rates. This is the function of the bivariate analyses. In these analyses, each variable is analyzed separately in relation to property crime rates. But, to get a more accurate estimate of the "real" effects of each variable, they must be analyzed simultaneously in the same model. This is the purpose of the multivariate analysis presented in this report. Because the data used for both the bivariate and multivariate analyses were clustered, in that dissemination areas are clustered within municipalities, they were analyzed using mixed effects modeling techniques.

While the bivariate and multivariate analyses are designed to provide assessments at the aggregate level, it stands to reason that there is likely to be variation in effects across different municipalities. As a result, separate analyses for 21 municipalities was conducted. The analyses consisted of t-tests, comparing property crime "hotspots" and high volume areas with "non-hotspots" in each municipality. The hotspots were derived from the density maps presented later in this report. The dissemination areas with the highest concentrations of property crime were designated as hotspots, while all other disseminations were designated as non-hotspots. The t-test analyses then compared the various structural variables to see if there were significant differences between hotspot and non-hotspot areas. Because the range of dissemination areas that comprise each municipality is quite disparate, and some municipalities have relative few DAs, statistical significance is reported at both the standard $p < .05$ level and the more generous $p < .10$ level.

## Bivariate and Multivariate Analyses of Property Crime in the LMD in 2015

The results of the bivariate analyses are presented in the "Bivariate" columns in Table 7. The "Effect %" column provides an indication of the size of the effect of each variable on property crime rates. For example, the effect size for *unmarried* is 3.07%, meaning that for every one-unit increase in the percentage of unmarried individuals in a dissemination area, the property crime rate is expected to increase by 3.07%. Conversely, a variable such as *immigration* is negatively related to property crime. In other words, every one-unit increase in the percentage of immigrants is anticipated to reduce the property crime rate by 0.67%.

There are two variables that merit special attention because they are measured on different scales. First, the coefficient for *population density* has been multiplied by 1,000 to represent persons per square kilometer. Thus, the value of -6.16 indicates that for every 1,000-unit increase in population density, the rate of property crime is predicted to decrease by 6.16%. Second, the coefficient for *median household income* has been multiplied by 10,000. Here, for every $10,000 increase in median household income, property crime should go down by 6.34% (see Table 7).

According to the bivariate results, most of the structural variables tested showed a statistically significant relationship with property crime rates (see Table 7). Only four variables failed to reach the level required to be considered statistically significance. These variables were the percentage of recent immigrants (last five years), the percentage of non-citizens, unemployment rate, and labour force participation. Moreover, most of the significant variables produced results in the expected direction. For example, each of the following variables revealed a significant, positive association with property crime; population change (0.17), proportion unmarried (3.07), residential mobility (1.23), low income families (1.16), less than high school education (0.41), renters (0.88), and poor housing condition (1.13). Put another way, as each of these variables increased, the level of property crime in the area was also expected to increase. The percentage of the population that self-identified as Aboriginal was also related to an increase in property crime in the bivariate analysis. However, this relationship is potentially spurious and likely reflects the confluence of other social and economic indicators. This possibility will be explored further in the multivariate analysis.

**TABLE 7: EFFECTS OF STRUCTURAL VARIABLES ON PROPERTY CRIME RATES (LOGGED)**

| | Bivariate Models | | Multivariate Model | |
|---|---|---|---|---|
| | Effect (%) | t value | Effect (%) | t value |
| Population Density | -1.41 | -6.16* | -4.13 | -17.54* |
| Population Change 2006-2011 (%) | 0.17 | 4.33* | 0.09 | 2.44* |
| Young Males - Aged 15-24 (%) | -5.40 | -9.29* | -2.99 | -5.06* |
| Unmarried (%) | 3.07 | 21.28* | 2.49 | 11.62* |
| Mobility - Last 5 Years (%) | 1.23 | 15.75* | 0.86 | 8.81* |
| Immigration (%) | -0.67 | -7.44* | -0.44 | -4.45* |
| Recent Immigration - Last Five Years (%) | -0.40 | -1.90 | | |
| Recent Immigration - Last Ten Years (%) | -0.31 | -2.26* | | |
| Visible Minority (%) | -0.44 | -7.50* | | |
| Non-Citizens (%) | 0.26 | 1.72 | | |
| Linguistic Isolation (%) | -1.54 | -6.09* | | |
| Aboriginal Population (%) | 1.82 | 5.72* | -0.25 | -0.81 |
| Median Household Income | -6.34 | -14.05* | -1.45 | -2.27* |
| Low Income Families (%) | 1.16 | 10.27* | | |
| Unemployment Rate | 0.38 | 1.81 | -0.37 | -1.85 |
| Labour Force Participation (%) | -0.09 | -0.80 | -0.07 | -0.61 |
| Less Than High School Education (%) | 0.41 | 2.80* | 0.26 | 1.69 |
| Renters (%) | 0.88 | 16.00* | 0.16 | 2.11* |
| Housing Condition - Major Repairs (%) | 1.13 | 6.25* | 0.34 | 2.02* |

* $p < .05$

Although its coefficient was negative, the effect of median household income was in the expected direction; that is, lower levels of median income were associated with higher levels of property crime (see Table 7). However, there were two other variables that had significant negative effects that were harder to explain, namely, population density and the proportion of young males. Conventional wisdom would suggest that both of these relationships should be positive, as property crime rates are expected to be higher in areas that are more densely populated and that have a greater concentration of young males. Here, the results indicated the opposite, that increases in population density and young males were associated with lower rates of property crime. The effect for density may reflect aggregation bias. In effect, in the municipal-level analysis that will be presented in the next section of the report, the effect of density was generally positive. The effect of young males was more consistent across the various analyses and thus harder to explain. Unlike violent crime, the distribution of property crime was not clearly concentrated among younger males. Perhaps property crime is more equally distributed across age categories, or is biased toward those over 25 years of age. This is possible as many of the most common property crimes may be committed by a small number of prolific offenders, who tend to be somewhat older, more commonly around 32 to 36 years old. Because this variable is statistically significant, it was retained across all remaining models, but because this effect remains poorly understood, it is not discussed in those models.

The other unexpected but noteworthy finding in Table 7 is the significant negative relationship between various indicators of immigration and property crime. Traditional criminological theorizing, particularly as it relates to social disorganization, assumes that the disruptive and

destabilizing influence of immigration is a primary contributor to rising crime rates. However, research has cast considerable doubt on this perspective, arguing instead that immigration can, in fact, have substantially protective effects that work to reduce crime (Davies & Fagan, 2012). This alternative approach is overwhelmingly supported by the findings in this study. With the exception of recent immigration (last five years), which was insignificant, all of the "immigration-related" variables, including visible minorities and linguistic isolation, were significantly, but negatively associated with property crime. Overall, as immigration levels go up, property crime rates go down. Unfortunately, the various indicators of immigration are highly correlated with one another and, therefore, cannot be included in the same multivariate model. For this reason, the most general variable, *immigration*, was selected to represent all the immigration-related variables. For the same reason of multicollinearity, the variable *low income* families, which correlated with median household income, was also dropped from the multivariate analysis.

Bivariate analyses are useful for establish baseline effects. In simple terms, they tell us how an independent variable of interest is related to a dependent variable, in this case the property crime rate. But, bivariate analyses are unable to capture the rich complexity of social conditions. More precisely, variables do not operate in a vacuum. To properly estimate the effects of a given variable, it is necessary to control for the effects of other variables that may also explain the phenomenon of interest. This controlling of effects is accomplished via multivariate modeling. Instead of comparing variables to property crime rates one at a time, in the multivariate analysis, all of the variables are considered simultaneously. Otherwise, the interpretation of results remains very much the same as with the bivariate analyses. For example, the effect of *immigration* under the "Multivariate Model" column in Table 7 of –0.44% would be interpreted as follows: controlling for all of the other effects in the model, a one-unit increase in the proportion of immigrants is expected to lower property crime rates by 0.44%.

In effect, Table 7 demonstrates that, while the effect sizes of each the variables were reduced in the multivariate model, almost all of the variables remain statistically significant. The only two variables that dropped to insignificance were the proportion of Aboriginal residents and the proportion of residents with less than a high school education. As noted earlier, the effect of Aboriginal population in the bivariate model was likely an artifact. When other social and economic indicators are included, Aboriginal population was no longer related to property crime. Similarly, it is possible that the effect of failing to graduate from high school is mediated by other economic measures. Although these variables have been reduced to insignificance, they are nonetheless retained in the municipal-level analyses that follow because, while they are not statistically significant in the aggregate, they may have an impact at the disaggregated level. This logic underlies the decision to keep unemployment and labour force participation in the model, even though they were not significant in either the bivariate or multivariate context.

## Municipal-Level Analyses of Property Crime in 2015

This section of the report will present the property crime profile of 21 Lower Mainland Districts considered in this report.[10] In addition to the profile, density maps will be discussed to indicate where property crime hotspots exist within each municipality. Analyses comparing the socio-demographic and socio-economic characteristics of property crime hot spots to other parts of each municipality will be provided to suggest some explanations for the distribution and volume of property crime in each municipality.

### ABBOTSFORD

In 2015, Abbotsford had 6,744 property crimes or approximately 18.5 property crimes per day. By volume alone, Abbotsford ranked sixth out of the 21 jurisdictions considered in this report. The most common types of property crime were theft from vehicle (24.4 per cent), mischief to property (16.6 per cent), and other theft under $5000 (12.4 per cent). This was followed by auto theft (9.4 per cent) and shoplifting (8.9 per cent). On average, in a typical day, Abbotsford Police Department recorded 4.4 thefts from vehicles, three mischiefs to property, 2.3 other theft under $5,000, and 1.7 auto thefts, in addition to all the other offence types presented in Table 8. While believed to be one of the types of property crimes underreported to the police, Abbotsford Police Department recorded 531 frauds in 2015. In terms of the more serious property crimes, while there were 629 auto thefts in 2015, there were also 410 break and enters of a residence, 260 break and enters of a business, and 235 break and enters 'other'. Combining all the different types of break and enters, Abbotsford Police Department recorded 2.8 break and enters per day. Finally, there were also a substantial number of arsons (n = 35) and a small number of thefts over $5,000 (n = 47) in 2015. Still, in effect, approximately three-quarters (75.8 per cent) of all property crime was of a more minor nature in Abbotsford in 2015.[11]

[10] For these analyses, UBC Vancouver was removed as their geography was covered in the analyses conducted for the City of Vancouver.

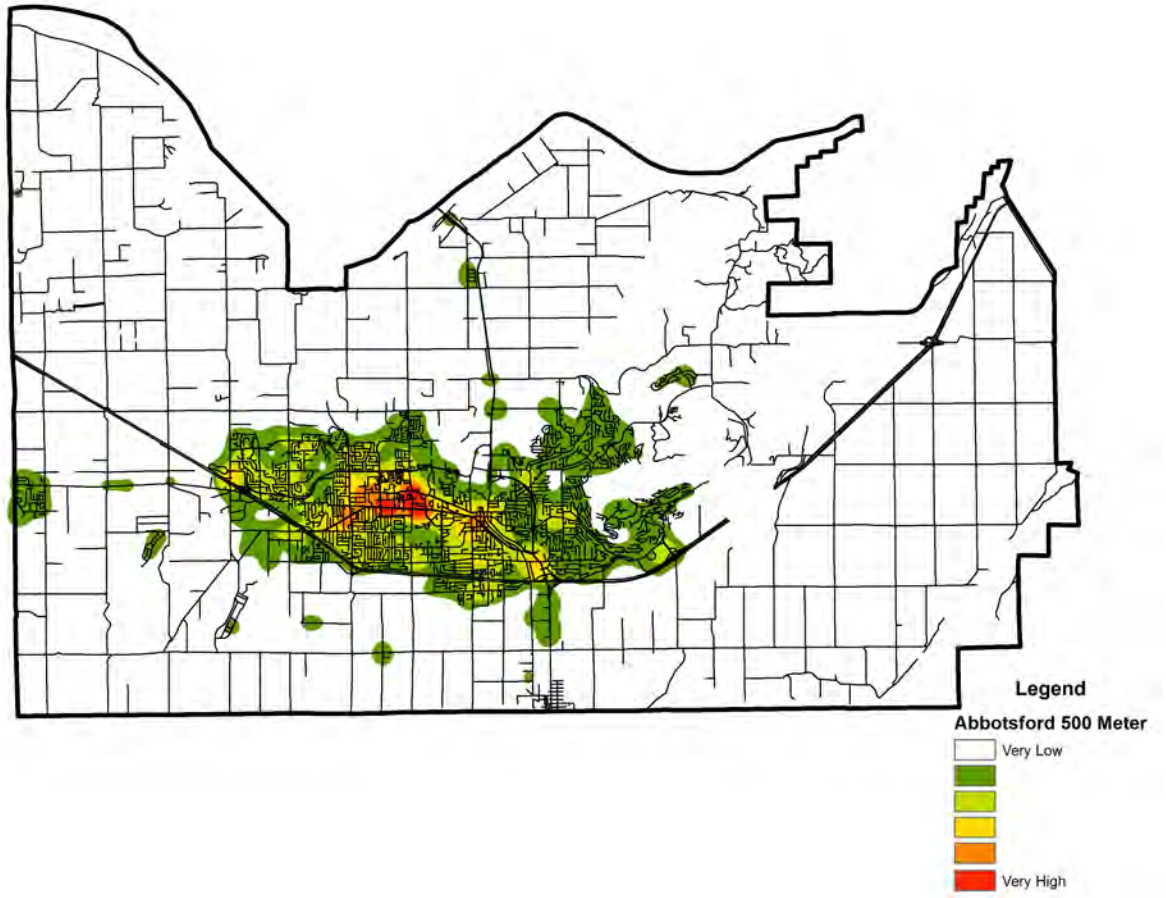
[11] Included in the category of less serious property crimes for all the cities discussed in this report were theft from vehicles, mischief to property, other theft under $5,000, shoplifting, fraud, bike theft, and possession of stolen property. This was done to distinguish these types offences from auto theft, break and enter, other theft over $5,000, and arson.

**TABLE 8: PROPERTY CRIME PROFILE FOR ABBOTSFORD IN 2015**

| | Raw Number (n = 6,744) | % of Total |
|---|---|---|
| **Theft From Vehicle** | **1,633** | **24.4%** |
| **Mischief to Property** | **1107** | **16.6%** |
| **Other Theft Under $5,000** | **829** | **12.4%** |
| **Auto Theft** | **629** | **9.4%** |
| **Shoplifting** | **596** | **8.9%** |
| **Frauds** | **531** | **7.9%** |
| **Break & Enter – Residence** | **410** | **6.1%** |
| **Bike Theft** | **284** | **4.3%** |
| **Break & Enter – Business** | **260** | **3.9%** |
| **Break & Enter – Other** | **235** | **3.5%** |
| **Possession of Stolen Property** | **86** | **1.3%** |
| **Other Theft Over $5,000** | **47** | **0.7%** |
| **Arson** | **35** | **0.5%** |

As demonstrated in Figure 6, property crime was concentrated in the middle of the city. There were two main hotspots for property crime in 2015 in Abbotsford. While the bulk of property crime extended from Mt. Lehman in the west to Sumas Mountain in the east and from Trans-Canada Highway in the south to Downes Road in the north, the first hotspot was along Gladwin Road right up to Mill Lake Road and between the area just south of South Fraser Way to just north of George Ferguson Way. In effect, this hotpot was in the Clearbrook commercial area. The second main hotspot was nearby, just to the west of the first hotspot; namely, the area along South Fraser Way between Trethewey Street and Garden Street and Simon Avenue and Hillcrest Avenue. These two hotspots were surrounded by an area of high concentration for property crime that continued along South Fraser Way to beyond Clearbrook Road to the west. There was also an emerging hotspot in the area between Old Yale Road and Maclure Road and Clearbrook Road and Trethewey Street. A final high concentration of property crime was found in the area just to the east of McCallum road around Jubilee Park and extending to George Ferguson Way and West Railway Street.

**FIGURE 6: PROPERTY CRIME HOTSPOTS IN ABBOTSFORD IN 2015**




There are several variables that show clear effects with regards to property crime in Abbotsford (see Table 9). For example, the percentages of unmarried individuals, mobility, and the proportion of housings needing major repairs are all positively related to property crime hotspots. That is, all of these indicators are significantly higher in high density property crime areas and in the hotspot, as opposed to the non-hotspot areas of the city. Moreover, median household income and labour force participation are both significantly lower in hotspots areas. Finally, two variables, the unemployment rate and the proportion of people who self-identify as Aboriginal was marginally significantly higher in the higher concentration areas, although the absolute numbers for Aboriginal population was very low in both the hotspot and the non-hotspot areas in Abbotsford. Although the proportion of renters, as well as population density, was higher in the hotspot areas, the differences with non-hotspot areas were not statistically significant. Given that rates of immigration and less than high school education was virtually the same across the entire city, it is not surprising that these variables were insignificant when comparing the property crime hotspots to the rest of the city.

**TABLE 9: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – ABBOTSFORD**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 4,116 | 2,969 | 1.43 |
| Population Change 2006-2011 (%) | 11.6% | 4.2% | 1.46 |
| Young Males - Aged 15-24 (%) | 4.7% | 7.2% | -3.94** |
| Unmarried (%) | 51.8% | 38.2% | 5.41** |
| Mobility - Last 5 Years (%) | 54.3% | 41.7% | 2.73** |
| Immigration (%) | 25.9% | 24.6% | 0.30 |
| Aboriginal Population (%) | 4.5% | 2.6% | 1.66 |
| Median Household Income ($) | $37,171 | $73,027 | -8.86** |
| Unemployment Rate | 12.4 | 6.5 | 1.82* |
| Labour Force Participation (%) | 49.4% | 68.1% | -3.03** |
| Less Than High School Education (%) | 17.6% | 14.4% | 0.63 |
| Renters (%) | 30.8% | 22.1% | 1.43 |
| Housing Condition - Major Repairs (%) | 6.5% | 2.1% | 2.25** |

* p < .10; ** p < .05

## BURNABY

In 2015, Burnaby had a total of 11,865 property crimes, or approximately 32.5 property crimes per day. By the volume of property crime, Burnaby ranked third out of the 21 jurisdictions considered in this report. Similar to Abbotsford, the most common property crimes were theft from vehicle (26.1 per cent) and mischief to property (15.8 per cent). Shoplifting (13.4 per cent), theft under $5,000 (12.3 per cent), and break and enter of a residence (7.8 per cent) rounded out the top five property crimes in Burnaby in 2015 (see Table 10). Of note, break and enter of a residence was the fifth most common property offence in Burnaby in 2015. Moreover, these five offence types comprised three-quarters (75.4 per cent) of all property crimes in Burnaby in 2015. In considering these five offence types, on average, in a typical day, the Burnaby RCMP recorded 8.5 thefts from vehicles, 5.1 mischief to property offences, 4.3 shoplifting offences, four other thefts under $5,000, and 2.5 break and enters of a residence.

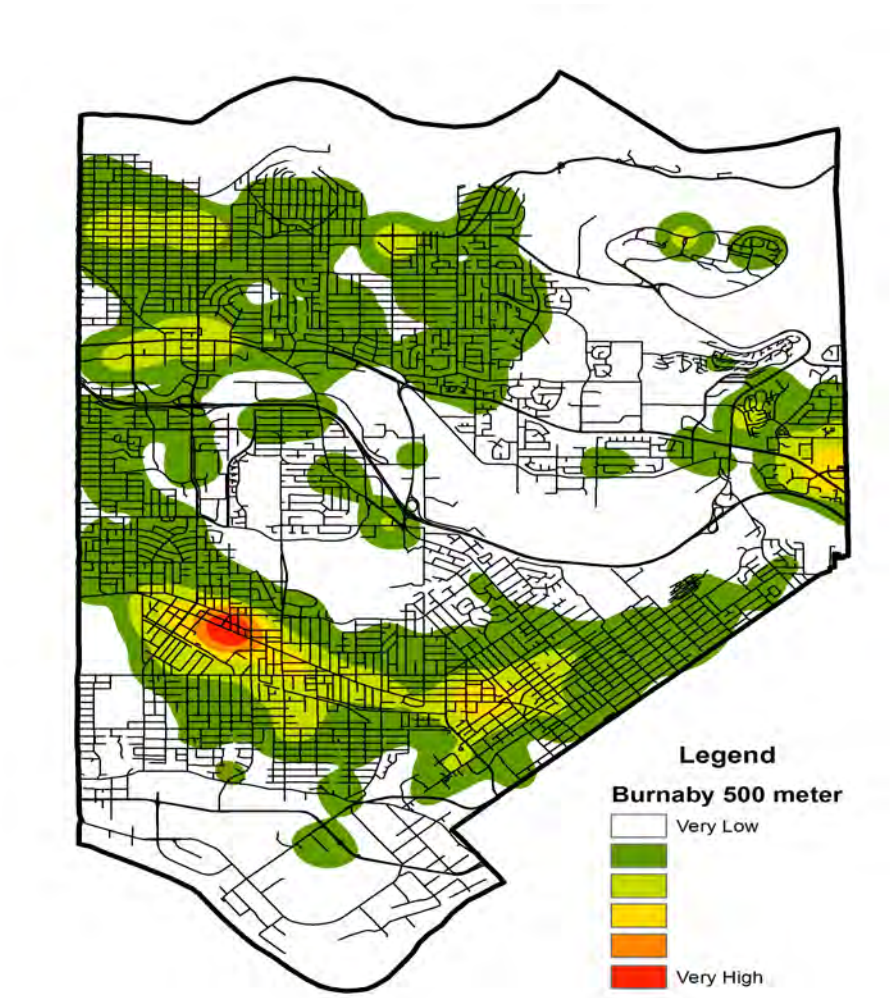
In terms of the more serious property crimes, the Burnaby RCMP recorded 916 break and enters of a residence, 697 auto thefts, 676 break and enters of a business, 195 'other' break and enters, 55 arsons, and 54 other thefts over $5,000. Given this, the Burnaby RCMP recorded 4.9 break and enters per day, and the more serious forms of property crime comprised more than one-fifth (22.1 per cent) of all property crime in Burnaby in 2015.

**TABLE 10: PROPERTY CRIME PROFILE FOR BURNABY IN 2015**

| | Raw Number (n = 11,865) | % of Total |
|---|---|---|
| **Theft From Vehicle** | **3,084** | **26.1%** |
| **Mischief to Property** | **1,858** | **15.8%** |
| **Shoplifting** | **1,580** | **13.4%** |
| **Other Theft Under $5,000** | **1,448** | **12.3%** |
| **Break & Enter – Residence** | **916** | **7.8%** |
| **Frauds** | **904** | **7.7%** |
| **Auto Theft** | **697** | **5.9%** |
| **Break & Enter – Business** | **676** | **5.7%** |
| **Bike Theft** | **251** | **2.1%** |
| **Break & Enter – Other** | **195** | **1.7%** |
| **Possession of Stolen Property** | **72** | **0.6%** |
| **Arson** | **55** | **0.5%** |
| **Other Theft Over $5,000** | **54** | **0.5%** |

While property crimes occurred throughout most parts of the city of Burnaby, there was only one major hotspot. This hotspot was focused in the area around the Metropolis Mall at Metrotown (see Figure 7) and, as expected, there were elevated rates of property crime in the areas surrounding the mall. Given that property crime was found throughout the city, it is important to note that there were higher concentrations of property crime all along Kingsway Highway across the entire city of Burnaby, with increased levels of property crime in the area around where North Road and Austin Road intersect with Lougheed Highway, which is a commercial and shopping area with many strip malls or outdoor malls, including Lougheed Town Centre, and the area where Kingsway Avenue intersects with Edmond Street and Walker Avenue.

**FIGURE 7: PROPERTY CRIME HOTSPOTS IN BURNABY IN 2015**




The most notable predictor of property crime in Burnaby was median household income, which, in hotspot areas, was barely half of what it was in non-hotspot areas (see Table 11). Mobility was significantly higher in hotspots, while labour force participation was lower. Perhaps the most interesting finding concerns immigration. Rates of immigration are comparatively high Burnaby in comparison to the other municipalities in this study. Moreover, the percentage of immigrants in hotspots was more than one-third (34 per cent) higher in hotspot areas when compared to the rest of the city. Several other variables were marginally significant in accounting for property crime. Hotspot areas in Burnaby were much more densely populated and had higher proportions of both renters and housing in need of major repairs. For the remainder of the variables, the differences between hotspot and non-hotspot areas were not significant. In most cases, the lack of difference was readily apparent. With the exception of population change, none of the insignificant variables

showed more than a two-point difference when comparing the higher concentration of property crime areas to the lower concentration areas.

**TABLE 11: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – BURNABY**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 21,994 | 6,021 | 2.35* |
| Population Change 2006-2011 (%) | 18.9% | 8.8% | 0.76 |
| Young Males - Aged 15-24 (%) | 6.0% | 7.1% | -1.30 |
| Unmarried (%) | 42.1% | 43.8% | -0.60 |
| Mobility - Last 5 Years (%) | 58.7% | 40.7% | 2.77** |
| Immigration (%) | 66.4% | 49.5% | 3.52** |
| Aboriginal Population (%) | 0.0% | 0.8% | -0.96 |
| Median Household Income ($) | $35,602 | $67,167 | -9.22** |
| Unemployment Rate | 8.3 | 6.3 | 0.79 |
| Labour Force Participation (%) | 54.1% | 63.5% | -2.49* |
| Less Than High School Education (%) | 5.2% | 6.6% | -0.51 |
| Renters (%) | 50.4% | 32.9% | 1.69* |
| Housing Condition - Major Repairs (%) | 9.3% | 4.2% | 1.70* |

* p < .10; ** p < .05

## CHILLIWACK

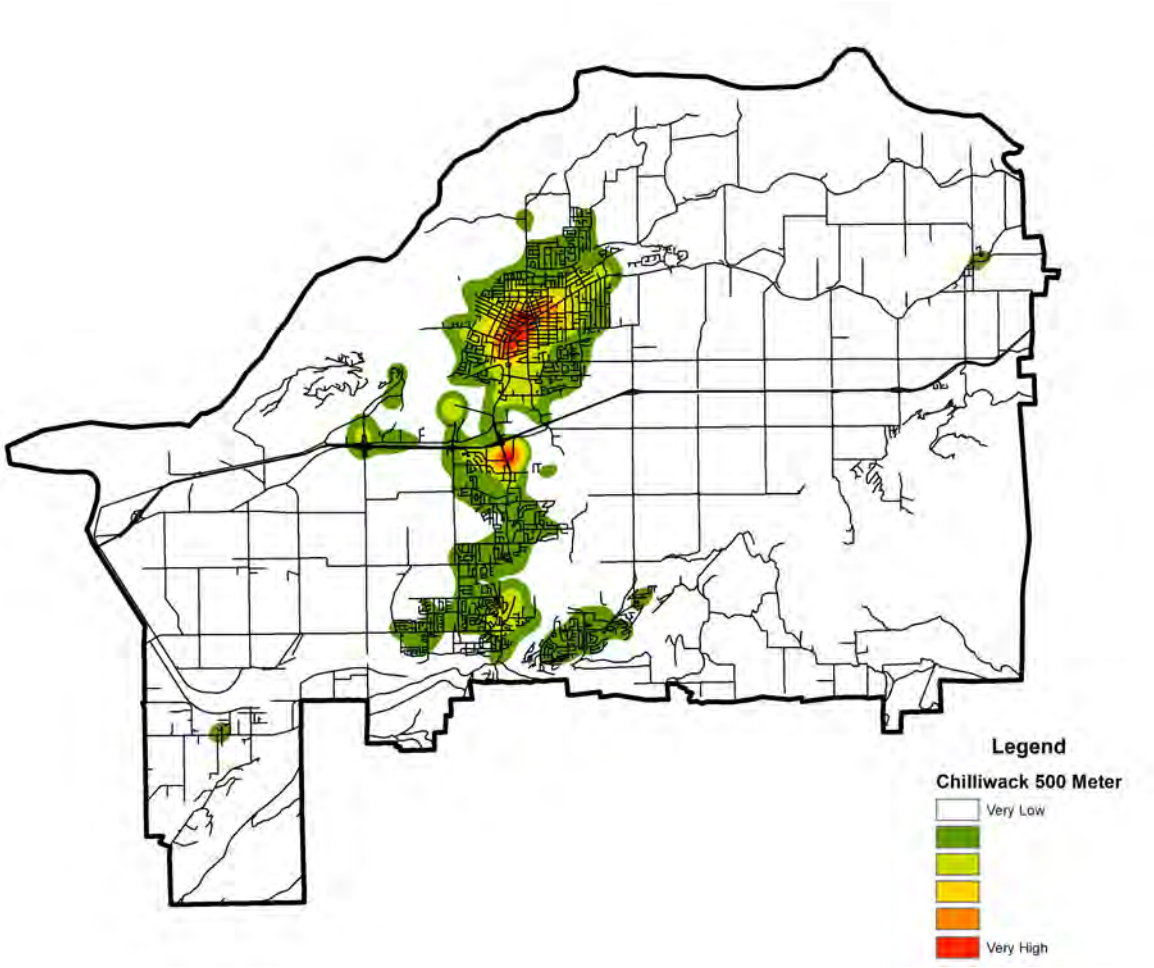
In 2015, Chilliwack had 6,307 property crimes or 17.3 property crimes per day. By volume, Chilliwack ranked seventh out of the 21 jurisdictions considered in this report. Given its proximity to Abbotsford, it was not surprising that the property crime profile in Chilliwack was very similar to the profile for Abbotsford. The most common types of property crime were theft from vehicle (22.7 per cent), mischief to property (17.9 per cent), and other under $5000 (15.0 per cent). This was followed by shoplifting (9.9 per cent) and auto theft (8.0 per cent). In effect, in a typical day, on average, the RCMP recorded 3.9 thefts from vehicles, 3.1 mischiefs to property, 2.6 other thefts under $5,000, and 1.4 auto thefts, in addition to all the other offence types presented in Table 12. In terms of the more serious property crimes, in addition to the 505 auto thefts in 2015, there were also 315 break and enters of a residence, 259 break and enters of a business, and 162 break and enters 'other'. Taking all the break and enters together, the RCMP recorded, on average, two break and enters per day. Finally, there were also a large number of arsons (n = 80) and a small number of theft over $5,000 (n = 31) in 2015. In effect, excluding the more serious types of property crime, slightly more than three-quarters (78.3 per cent) of all property crime was of a more minor nature in Chilliwack in 2015.

**TABLE 12: PROPERTY CRIME PROFILE FOR CHILLIWACK IN 2015**

| | Raw Number (n = 6,307) | % of Total |
|---|---|---|
| **Theft From Vehicle** | **1,425** | **22.7%** |
| **Mischief to Property** | **1,126** | **17.9%** |
| **Other Theft Under $5,000** | **945** | **15.0%** |
| **Shoplifting** | **623** | **9.9%** |
| **Auto Theft** | **505** | **8.0%** |
| **Frauds** | **446** | **7.1%** |
| **Break & Enter – Residence** | **315** | **5.0%** |
| **Bike Theft** | **272** | **4.3%** |
| **Break & Enter – Business** | **259** | **4.1%** |
| **Break & Enter – Other** | **162** | **2.6%** |
| **Possession of Stolen Property** | **85** | **1.4%** |
| **Arson** | **80** | **1.3%** |
| **Other Theft Over $5,000** | **31** | **0.5%** |

While there was a small amount of property crime found throughout the city, as demonstrated in Figure 8, for the most part, property crimes were concentrated throughout the middle of Chilliwack as defined by Yale Road to the north of the Trans-Canada Highway and Vedder Road to the south. Moreover, there were two main hotspots for property crime in Chilliwack in 2015. The smaller of the two hotspots was found along Vedder Road just south of the Trans-Canada Highway to Luckakuck Way, which is a very commercial area characterized by outdoor shopping malls, big box stores, and restaurants. The second hotspot was along Yale Road from Chilliwack Proper Village West to Young Road. As commonly the case, this hotspot was surrounded by another area of high volume for property crime that extended to the areas near Yale Road to Broadway.

**FIGURE 8: PROPERTY CRIME HOTSPOTS IN CHILLIWACK IN 2015**




As demonstrated in Table 13, the majority of variables highlight significant differences between hotspot and non-hotspot areas in Chilliwack. In some instances, these differences were substantial. For example, Chilliwack property crime hotspots were characterized by having three times the unemployment rate and more than three times the number of renters when compared to non-property crime hotspots. They also featured relatively high levels of residential mobility and the number of people who lived in the area that were unmarried. In addition, the median household income in property crime hotspots was only about one-third the income of those living in non-hotspot neighborhoods. All of these relationships were statistically significant. Only four of the variables tested were found to not distinguish property crime hotspots from non-property crime hotspots in Chilliwack. The percentage of immigrants was virtually identical across all areas in Chilliwack. In contrast to most of the other municipalities featured in this report, the rate of population change was actually lower in property crime hotspot areas, but this difference was not statistically significant. Hotspot areas exhibited nearly 2½ times the number of properties in need of major repairs, and about an 80% higher rate of being populated with those who failed to complete high school, but neither of these differences were statistically significant.

**TABLE 13: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – CHILLIWACK**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 3,721 | 1,954 | 2.79** |
| Population Change 2006-2011 (%) | 6.6% | 10.0% | -0.37 |
| Young Males - Aged 15-24 (%) | 5.6% | 7.0% | -2.19** |
| Unmarried (%) | 61.5% | 39.3% | 7.50** |
| Mobility - Last 5 Years (%) | 57.6% | 43.5% | 2.42** |
| Immigration (%) | 10.8% | 12.6% | -0.85 |
| Aboriginal Population (%) | 19.9% | 6.5% | 2.42** |
| Median Household Income ($) | $22,515 | $64,203 | -15.56** |
| Unemployment Rate | 14.4 | 4.8 | 2.72** |
| Labour Force Participation (%) | 41.7% | 64.7% | -5.95** |
| Less Than High School Education (%) | 22.4% | 12.2% | 1.52 |
| Renters (%) | 66.8% | 19.9% | 7.20** |
| Housing Condition - Major Repairs (%) | 9.4% | 3.8% | 1.53 |

* p < .10; ** p < .05

## COQUITLAM

In 2015, Coquitlam had 5,750 property crimes or 15.8 property crimes per day. Just by volume, Coquitlam ranked eighth out of the 21 jurisdictions considered in this report. Very similar to the profiles presented above, the most common types of property crime were theft from vehicle (33.5 per cent), mischief to property (14.6 per cent), and other under $5000 (12.2 per cent). This was followed by shoplifting (10 per cent), and fraud (6.5 per cent). In total, these five offence types comprised three-quarters (76.8 per cent) of all property crimes in Coquitlam in 2015. On average, in a typical day, the Coquitlam RCMP recorded 5.3 thefts from vehicles, 2.3 mischiefs to property, 1.1 thefts under $5,000, and just under one auto theft per day, in addition to all the other offence types presented in Table 14. In terms of the more serious property crimes, in addition to the 362 auto thefts, there were also 362 break and enters of a residence, 296 break and enters of a business, and 97 break and enters 'other' in Coquitlam in 2015. Taking all the break and enters together, the Coquitlam RCMP recorded 2.1 break and enters per day. Finally, there were also a number of arsons (n = 28) and a small number of other theft over $5,000 (n = 22). In effect, excluding the more serious types of property crime, nearly four-fifths (79.7 per cent) of all property crime was of a more minor nature in Coquitlam in 2015.

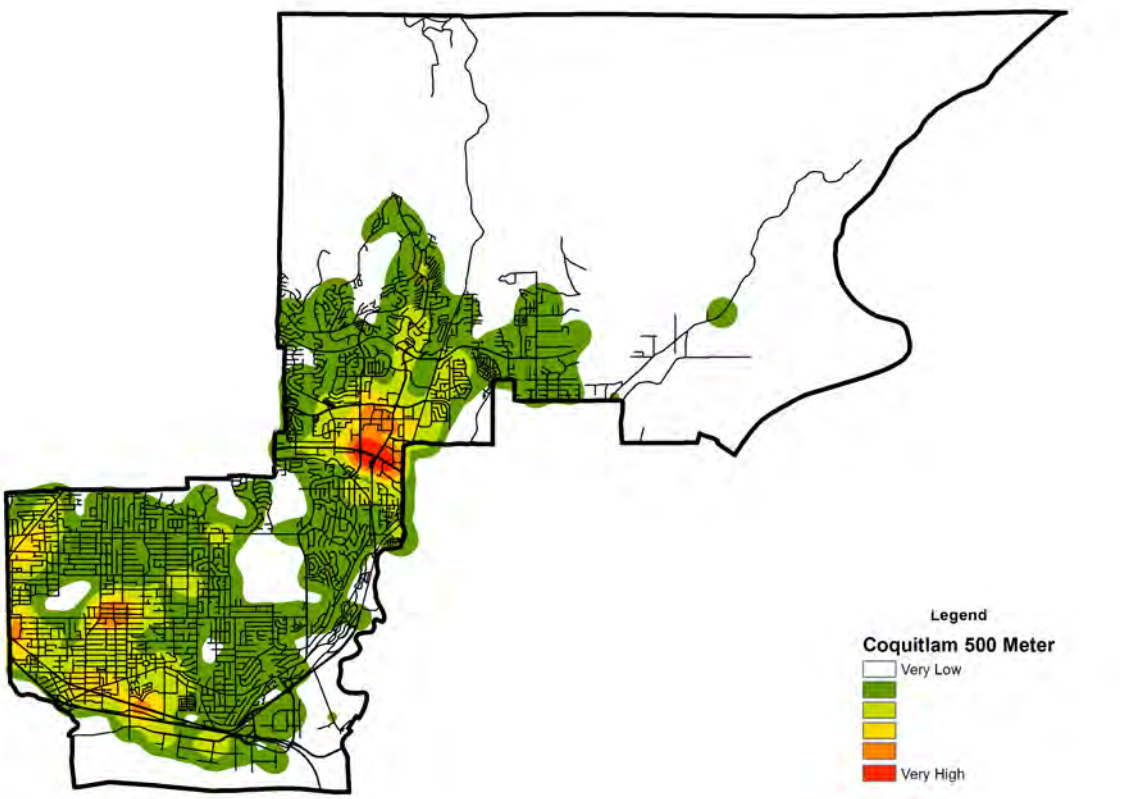
**TABLE 14: PROPERTY CRIME PROFILE FOR COQUITLAM IN 2015**

| | Raw Number (n = 5,750) | % of Total |
|---|---|---|
| **Theft From Vehicle** | **1,922** | **33.5%** |
| **Mischief to Property** | **837** | **14.6%** |
| **Other Theft Under $5,000** | **698** | **12.2%** |
| **Shoplifting** | **573** | **10.0%** |
| **Frauds** | **373** | **6.5%** |
| **Auto Theft** | **362** | **6.3%** |
| **Break & Enter – Residence** | **362** | **6.3%** |
| **Break & Enter – Business** | **296** | **5.2%** |
| **Bike Theft** | **126** | **2.2%** |
| **Break & Enter – Other** | **97** | **1.7%** |
| **Possession of Stolen Property** | **43** | **0.7%** |
| **Arson** | **28** | **0.5%** |
| **Other Theft Over $5,000** | **22** | **0.4%** |

Given the geographic layout and the concentration of commercial and residential areas in Coquitlam, it was not surprising that property crime was densely concentrated in the south-western part of the city. As demonstrated in Figure 9, there was one major hotspot for property crime in Coquitlam in 2015, but several emerging hotspots or areas of significant concern. The hotspot extended along Lougheed Highway from the eastern border of Coquitlam past Mariner Way to the south and Johnston Street. It included Coquitlam Centre shopping mall and the areas surrounding the mall in all directions. Unsurprisingly, the area around the hotspot also has a high degree of property crime and included the Coquitlam Central train station and the Evergreen Line station to the south, and continued up to Glen Drive to the north of Coquitlam Centre mall.

In addition to the main hotspot, there are three other high volume property crime areas in Coquitlam. One was located in Austin Heights to the south-east of the Vancouver Golf Club. This high property crime area extended along Austin Avenue between Blue Mountain Street and Marmont Street and up to King Albert Avenue. A second area was the commercial area between King Edward Street and Schoolhouse Street along Lougheed Highway. The final high concentration area was located on the east side of North Road between Austin Avenue and Rochester Avenue.

**FIGURE 9: PROPERTY CRIME HOTSPOTS IN COQUITLAM IN 2015**




As demonstrated in Table 15, virtually all of the variables were at least marginally significant in explaining property crime in Coquitlam. Consistent with many of the municipalities in this study, by far, median household income provided the biggest effect. The proportions of individuals with less than high school education, renters, and housing requiring major repairs were all most than twice as high in property crime hotspot areas when compared to the rest of the city. Also quite consistent were the strong effect of levels of unmarried persons and residential mobility. Simply put, there were very large structural differences between property crime hotspot and non-hotspot areas in Coquitlam. In effect, property crime hotspot areas were distinct from the other parts of the city across a number of key social, economic, and housing measures.

**TABLE 15: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – COQUITLAM**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 5,783 | 3,854 | 1.84* |
| Population Change 2006-2011 (%) | 39.5% | 8.5% | 1.24 |
| Young Males - Aged 15-24 (%) | 6.2% | 7.7% | -2.19** |
| Unmarried (%) | 52.5% | 40.0% | 4.85** |
| Mobility - Last 5 Years (%) | 60.3% | 36.7% | 4.79** |
| Immigration (%) | 48.2% | 39.0% | 1.96* |
| Aboriginal Population (%) | 1.4% | 1.4% | 0.08 |
| Median Household Income ($) | $42,594 | $80,493 | -8.58** |
| Unemployment Rate | 6.0 | 5.7 | 0.18 |
| Labour Force Participation (%) | 61.0% | 68.1% | -2.34** |
| Less Than High School Education (%) | 8.8% | 4.3% | 2.52** |
| Renters (%) | 47.6% | 19.3% | 3.93** |
| Housing Condition - Major Repairs (%) | 6.3% | 3.0% | 1.83* |

* p < .10; ** p < .05

## PORT COQUITLAM

In 2015, Port Coquitlam had 2,946 property crimes or 8.1 property crimes per day, resulting in Port Coquitlam ranking 13th out of the 21 jurisdictions considered in this report. Very similar to the profile for Coquitlam presented above, the most common types of property crime in Port Coquitlam were theft from vehicle (34.0 per cent), mischief to property (15.5 per cent), and other under $5000 (10.0 per cent). This was followed by shoplifting (8.2 per cent), and auto theft (7.3 per cent). In total, these five offence types comprised three-quarters of all property crimes in Port Coquitlam in 2015. On average, in a typical day in 2015, the RCMP recorded 2.7 thefts from vehicles, 1.2 mischiefs to property, and less than one other theft under $5,000 and auto theft per day, in addition to all the other offence types presented in Table 16. In terms of the more serious property crimes, in addition to the 214 auto thefts in 2015, there were also 174 break and enters of a business, 151 break and enters of a residence, and 45 break and enters 'other'. Taking all the break and enters together, the RCMP recorded approximately one break and enter per day in Port Coquitlam. Finally, there were also a number of arsons (n = 26) and a small number of other theft over $5,000 (n = 19). In effect, excluding the more serious types of property crime, nearly four-fifths (78.6 per cent) of all property crime was of a more minor nature in Port Coquitlam in 2015.

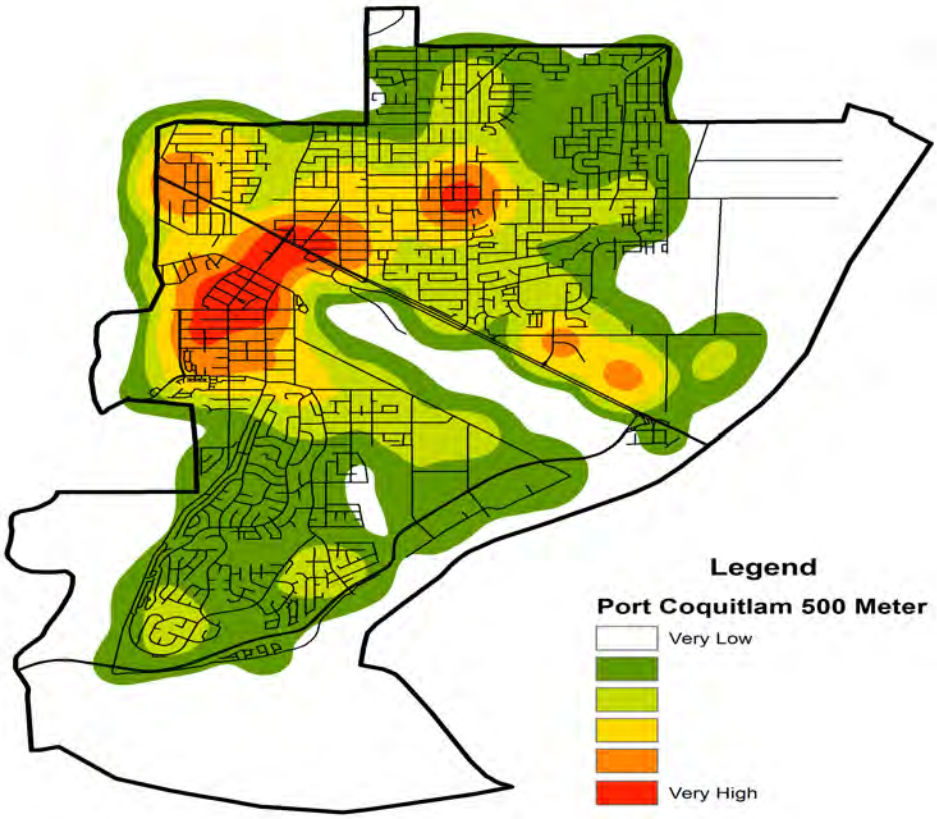
**TABLE 16: PROPERTY CRIME PROFILE FOR PORT COQUITLAM IN 2015**

| | Raw Number (n = 2,946) | % of Total |
|---|---|---|
| Theft From Vehicle | 1,000 | 34.0% |
| Mischief to Property | 455 | 15.5% |
| Other Theft Under $5,000 | 293 | 10.0% |
| Shoplifting | 242 | 8.2% |
| Auto Theft | 214 | 7.3% |
| Frauds | 186 | 6.3% |
| Break & Enter – Business | 174 | 5.9% |
| Break & Enter – Residence | 151 | 5.1% |
| Bike Theft | 110 | 3.7% |
| Break & Enter – Other | 45 | 1.5% |
| Arson | 26 | 0.9% |
| Possession of Stolen Property | 25 | 0.9% |
| Other Theft Over $5,000 | 19 | 0.6% |

Property crime was distributed throughout Port Coquitlam in 2015. As demonstrated by Figure 10, there were a number of hotspot clusters in Port Coquitlam. More specifically, the largest hotspot in Port Coquitlam extended to both the east and west sides of Shaughnessy Street from approximately Hawthorne Ave in the south to the area just north of Lougheed Highway. In fact, there was a high concentration of property crime as far west as Reeve Street and Pitt River Road to Grant Avenue and York Street. Of note, this large area is a mix of residential, commercial, and industrial areas. The second main hotspot in Port Coquitlam was in the center of the city in the area spanning out in all directions from the intersection of Grant Avenue and Vincent Street to east of Wellington Street and east of Coast Meridian Road. Moreover, this high concentration area extended north of Coquitlam Avenue to Dorset Avenue. This area includes a mix of residential and commercial zones.

There was another high concentration area in the north-west of the city where Westwood Street and Lougheed Highway intersected. This area is a large shopping and commercial area. There were also two emerging hotspots just south of Dominion Avenue in the commercial and shopping areas around Nicola Avenue. These two locations are characterized by several big box stores, other smaller stores, and restaurants, and they border Lougheed Highway.

**FIGURE 10: PROPERTY CRIME HOTSPOTS IN PORT COQUITLAM IN 2015**




With the exceptions of the unemployment rate, labour force participation, and proportion of residents who self-identified as Aboriginal, all of the structural variables were significant predictors of variations in neighborhood property crime in Port Coquitlam (see Table 17). The most noteworthy indicators were the percentage of unmarried individuals and residential mobility, both of which were significantly higher in hotspot areas when compared to the other areas of the city. In effect, property crime hotspots were similarly characterized by a higher proportion of renters and the proportion of housing in poor condition. Moreover, property crime hotspot areas had elevated levels of immigration, and were more densely populated. Property crime hotspot areas also had significantly lower income levels. Finally, the effects of population change and having a greater proportion of residents with less than high school education, which were greater in hotspot areas, were marginally significant.

**TABLE 17: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – PORT COQUITLAM**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 5,374 | 3,339 | 2.20** |
| Population Change 2006-2011 (%) | 20.7% | 3.3% | 1.79* |
| Young Males - Aged 15-24 (%) | 6.2% | 8.3% | -4.45** |
| Unmarried (%) | 47.6% | 38.5% | 5.83** |
| Mobility - Last 5 Years (%) | 49.1% | 30.6% | 5.34** |
| Immigration (%) | 32.5% | 25.4% | 2.69** |
| Aboriginal Population (%) | 3.9% | 2.6% | 0.93 |
| Median Household Income ($) | $63,651 | $86,109 | -3.85** |
| Unemployment Rate | 4.4 | 4.8 | -0.29 |
| Labour Force Participation (%) | 68.1% | 71.4% | -1.64 |
| Less Than High School Education (%) | 9.1% | 6.4% | 1.67* |
| Renters (%) | 30.2% | 14.7% | 3.61** |
| Housing Condition - Major Repairs (%) | 6.5% | 3.2% | 2.08** |

* p < .10; ** p < .05

## DELTA

In 2015, Delta had 3,279 property crimes or approximately nine property crimes per day. By volume, Delta ranked 12th out of the 21 jurisdictions considered in this report. Very similar to the profiles presented above, the most common types of property crime were theft from vehicle (27.5 per cent), mischief to property (18.0 per cent), and other theft under $5000 (12.7 per cent). This was followed by fraud (9.2 per cent) and shoplifting (8.6 per cent). In total, these five offence types comprised three-quarters (76 per cent) of all property crimes in Delta in 2015. In a typical day, on average, the Delta Police Department recorded 2.5 thefts from vehicles, 1.6 mischiefs to property, 1.1 other thefts under $5,000, and under one auto theft per day, in addition to all the other offence types presented in Table 18. In terms of the more serious property crimes, in addition to the 233 auto thefts in 2015, there were also 167 break and enters of a residence, 136 break and enters of a business, and 59 break and enters 'other'. Taking all the break and enters together, the Delta Police Department recorded, on average, approximately one break and enter per day. Finally, there were also a small number of arsons (n = 15) and a small number of other theft over $5,000 (n = 34). In effect, excluding the more serious types of property crime, four-fifths (80.2 per cent) of all property crime was of a more minor nature in Delta in 2015.

**TABLE 18: PROPERTY CRIME PROFILE FOR DELTA IN 2015**

| | Raw Number (n = 3,279) | % of Total |
|---|---|---|
| **Theft From Vehicle** | **898** | **27.5%** |
| **Mischief to Property** | **586** | **18.0%** |
| **Other Theft Under $5,000** | **415** | **12.7%** |
| **Frauds** | **301** | **9.2%** |
| **Shoplifting** | **279** | **8.6%** |
| **Auto Theft** | **233** | **7.1%** |
| **Break & Enter – Residence** | **167** | **5.1%** |
| **Break & Enter – Business** | **136** | **4.2%** |
| **Bike Theft** | **114** | **3.5%** |
| **Break & Enter – Other** | **59** | **1.8%** |
| **Other Theft Over $5,000** | **34** | **1.0%** |
| **Possession of Stolen Property** | **23** | **0.7%** |
| **Arson** | **15** | **0.5%** |

In 2015, Delta had three main areas of the city where property crimes occurred with any degree of volume; however, only one of them had a substantial hotspot for property crime (see Figure 11). The largest concentration of property crime extended from the north-eastern boundary of Delta along 120 Street to 116 Street. Here, there were two main areas of concentration. One area of high volume of property crime extended from 96 Avenue to 80 Avenue, with a hotspot between 80 Avenue and 82 Avenue, while the second area extended around the area where 72 Avenue and 120 Street intersected, with another hotspot just to the south of 72 Avenue. The other area of high concentration was where 84 Avenue and 112 Street intersected; namely, the area around the George Mackie Library.

The second main area of property crime concentration spread out from the commercial area around the intersection of Ladner Trunk Road and 52a Street in Ladner. That area is made up of two main shopping areas. The final hotspot was to the south in Tsawassen at the intersection of 56 Street and 12 Avenue. Again, this hotspot was located right in the middle of a number of strip malls and outdoor shopping locations.

**FIGURE 11: PROPERTY CRIME HOTSPOTS IN DELTA IN 2015**


The profile of effects for Delta closely resembled that found in Coquitlam. Once again, the most important predictor of property crime was median household income (see Table 19). While the effect sizes for renters, proportion of residents not married, residential mobility, and labour force participation were all smaller in Delta than in Coquitlam, they were still statistically significant. The effect of less than high school education was also attenuated, but it, nonetheless, remained marginally statistically significant. Of note, the immigrant population in Delta was about 25% larger in hotspot areas compared to the rest of the city. In fact, the variables that most distinguished Delta from Coquitlam were population density and housing condition, both of which were marginally significant in the Coquitlam model, but neither of which were statistically significant in Delta.

**TABLE 19: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – DELTA**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 3,409 | 3,142 | 0.80 |
| Population Change 2006-2011 (%) | 4.8% | 3.2% | 0.42 |
| Young Males - Aged 15-24 (%) | 6.3% | 7.2% | -2.06** |
| Unmarried (%) | 42.7% | 36.1% | 4.17** |
| Mobility - Last 5 Years (%) | 38.3% | 30.7% | 2.57** |
| Immigration (%) | 35.1% | 27.6% | 2.61** |
| Aboriginal Population (%) | 1.8% | 1.8% | -0.04 |
| Median Household Income ($) | $64,888 | $88,985 | -4.71** |
| Unemployment Rate | 5.6 | 4.7 | 0.74 |
| Labour Force Participation (%) | 60.2% | 67.3% | -3.33** |
| Less Than High School Education (%) | 10.6% | 6.9% | 1.86* |
| Renters (%) | 24.3% | 13.7% | 2.49** |
| Housing Condition - Major Repairs (%) | 4.0% | 2.4% | 1.15 |

* p < .10; ** p < .05

## HOPE

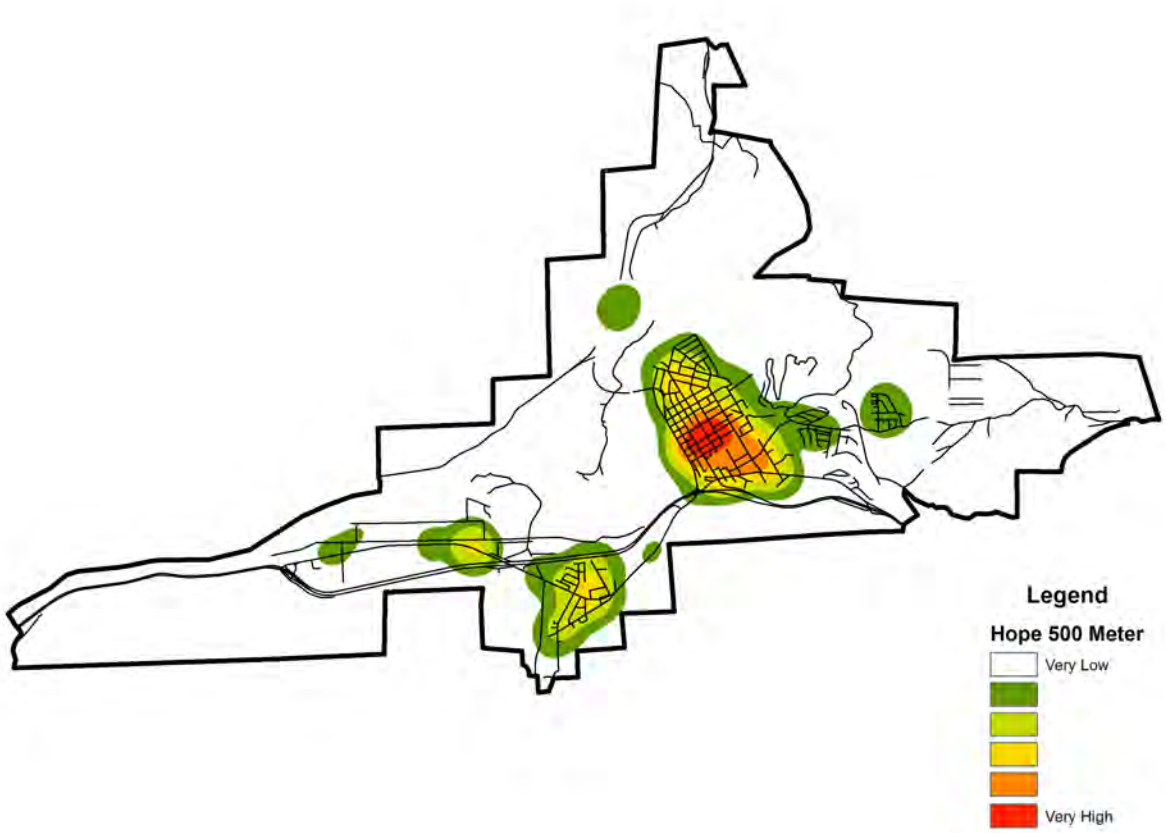
In 2015, the number of property crimes in Hope was lower than in the other cities discussed in this report. In fact, by volume, Hope ranked last out of the 21 jurisdictions considered in this report for the raw number of property crimes recorded by the police. Specifically, Hope RCMP recorded 565 property crime or approximately 1.5 property crimes per day (see Table 20). While in a slightly different order than the jurisdictions previously discussed, the top three property crimes were the same as in most other cities; namely, mischief to property (27.7 per cent), other theft under $5,000 (19.5 per cent), and theft from vehicle (15.9 per cent). While the number of offences was very low, it is noteworthy that the fourth most common property crime in Hope was a break and enter of a business. In fact, break and enters of all types made up 15.9% of all property crimes in Hope in 2015. Similar to other cities in 2015, the less serious property crimes comprised 76.8% of all property crime in Hope.

**TABLE 20: PROPERTY CRIME PROFILE FOR HOPE IN 2015**

| | Raw Number (n = 565) | % of Total |
|---|---|---|
| Mischief to Property | 155 | 27.7% |
| Other Theft Under $5,000 | 109 | 19.5% |
| Theft From Vehicle | 89 | 15.9% |
| Break & Enter – Business | 37 | 6.6% |
| Auto Theft | 32 | 5.7% |
| Break & Enter – Residence | 30 | 5.4% |
| Frauds | 25 | 4.5% |
| Bike Theft | 22 | 3.9% |
| Break & Enter – Other | 22 | 3.9% |
| Shoplifting | 22 | 3.9% |
| Possession of Stolen Property | 8 | 1.4% |
| Arson | 5 | 0.9% |
| Other Theft Over $5,000 | 0 | 0 |

Given the geographic layout of Hope, it was not surprising that property crimes were concentrated in just two parts of the city. Even so, there was one main hotspot, which was surrounded by another area of high volume of property crime covering most of the commercial shopping area in central Hope (see Figure 12). More specifically, the main hotspot was from around Memorial Park to 6 Avenue and from Park Street to Fort Street. The second area with a clustering of property crime was found in the area near the Silver Creek Elementary School around Flood Hope Road.

**FIGURE 12: PROPERTY CRIME HOTSPOTS IN HOPE IN 2015**




As demonstrated in Table 21, only two variables were outright statistically significant in differentiating the property crime hotspot from the non-hotspot areas in Hope; namely, the proportion of residents who were unmarried and residential mobility. Other variables that had a marginally significant effect in predicting property crime in Hope included population change, the proportion of renters, and the proportion of residents who self-identified as Aboriginal. The rest of the variables showed very little difference between the property crime hotspot area and the other parts of the city. It is important to note that Hope had the fewest number dissemination areas (n = 13). With such a small sample, it is difficult to reach statistical significance. This underscores the magnitude of the effects produced by the unmarried and mobility indicators for Hope.

**TABLE 21: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – HOPE**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 1,068 | 666 | 0.66 |
| Population Change 2006-2011 (%) | 3.3% | -5.9% | 2.09* |
| Young Males - Aged 15-24 (%) | 4.3% | 5.4% | -1.17 |
| Unmarried (%) | 59.2% | 39.3% | 12.38** |
| Mobility - Last 5 Years (%) | 57.6% | 32.5% | 2.41** |
| Immigration (%) | 11.3% | 16.7% | -0.60 |
| Aboriginal Population (%) | 15.9% | 6.5% | 2.04* |
| Median Household Income ($) | $32,714 | $51,362 | -1.92* |
| Unemployment Rate | 9.0 | 8.1 | 0.17 |
| Labour Force Participation (%) | 58.0% | 51.6% | 1.65 |
| Less Than High School Education (%) | 17.0% | 12.3% | 0.54 |
| Renters (%) | 49.9% | 16.6% | 2.04* |
| Housing Condition - Major Repairs (%) | 9.0% | 4.4% | 0.78 |

* $p < .10$; ** $p < .05$

## LANGLEY

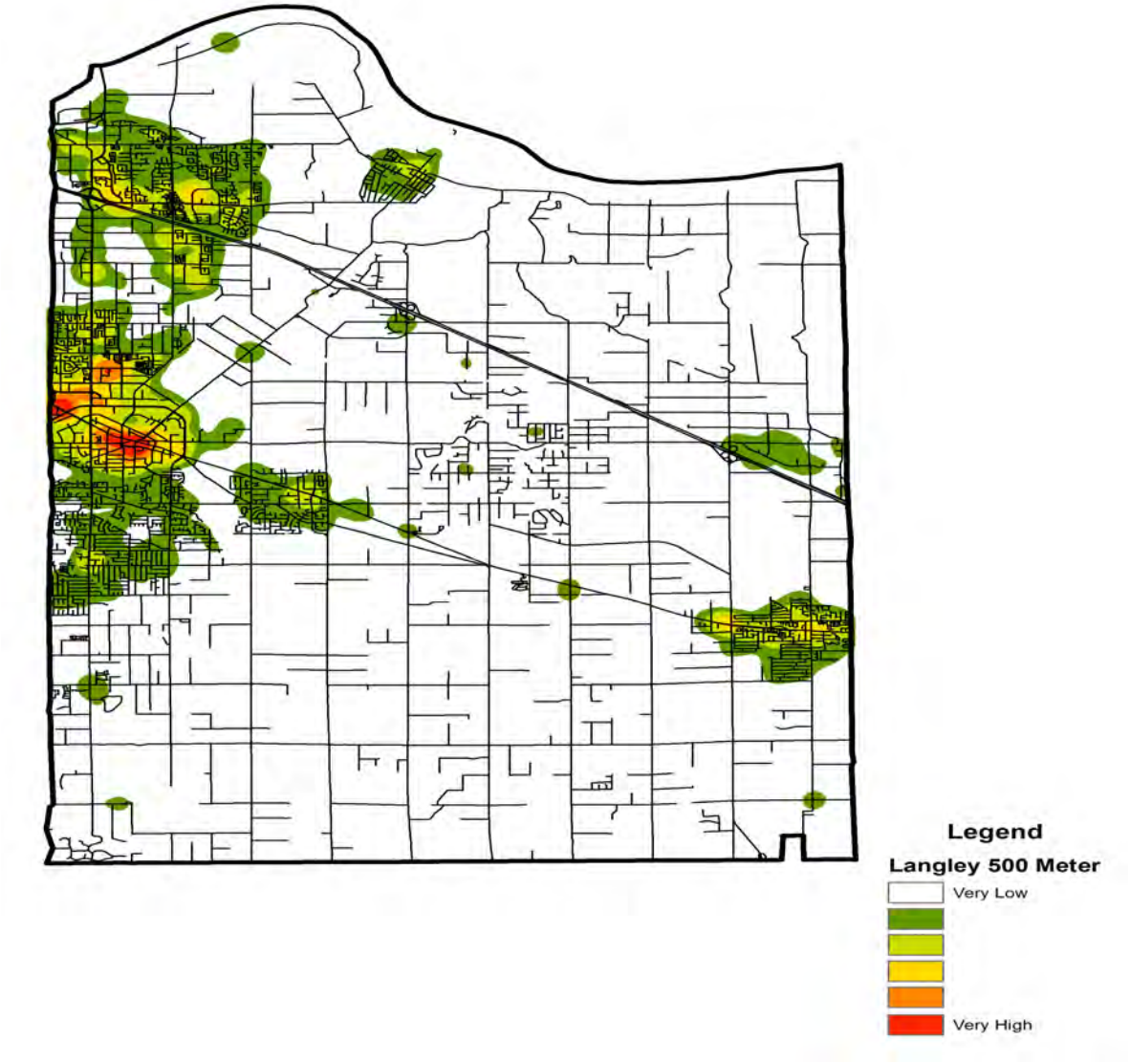
In 2015, Langley had 7,989 property crimes or 21.9 property crimes per day. By volume, Langley ranked fifth out of the 21 jurisdictions considered in this report. Very similar to the profiles presented above, the most common types of property crime recorded by the Langley RCMP were theft from vehicle (23.3 per cent), other theft under $5000 (15.6 per cent), and mischief to property (13.4 per cent). This was followed by shoplifting (10.5 per cent) and auto theft (8.9 per cent). In total, these five offence types comprised more than two-thirds (71.7 per cent) of all property crimes in Langley in 2015. In a typical day, on average, Langley RCMP recorded 5.1 thefts from vehicles, 3.4 other thefts under $5,000, 2.9 mischiefs to property, and approximately two auto thefts per day, in addition to all the other offence types presented in Table 22. In terms of the more serious property crimes, in addition to the 708 auto thefts in 2015, there were also 629 break and enters of a business, 364 break and enters of a residence, and 170 break and enters 'other'. Taking all the break and enters together, Langley RCMP, on average, recorded 3.2 break and enters per day. Finally, there were also 59 arsons, and a small number of theft over $5,000 (n = 63). In effect, four-fifths of all property crime was of a more minor nature in Langley in 2015.

**TABLE 22: PROPERTY CRIME PROFILE FOR LANGLEY IN 2015**

| | Raw Number (n = 7,989) | % of Total |
|---|---|---|
| Theft From Vehicle | 1,856 | 23.3% |
| Other Theft Under $5,000 | 1,244 | 15.6% |
| Mischief to Property | 1,067 | 13.4% |
| Shoplifting | 841 | 10.5% |
| Auto Theft | 708 | 8.9% |
| Frauds | 714 | 8.9% |
| Break & Enter – Business | 629 | 7.9% |
| Break & Enter – Residence | 364 | 4.6% |
| Bike Theft | 181 | 2.3% |
| Break & Enter – Other | 170 | 2.1% |
| Possession of Stolen Property | 82 | 1.0% |
| Other Theft Over $5,000 | 63 | 0.8% |
| Arson | 59 | 0.7% |

While property crime was distributed throughout Langley, as demonstrated in Figure 13, all of the major hotspots for property crime in Langley were located in the western part of the city along its border with Surrey. The largest hotspot was centralized in the area around the Cascades Casino near the intersection of Glover Road and Fraser Highway. Of note this high property crime area extended from just north of Fraser Highway to 54 Avenue between 201a Street and 206 Street. This area is overwhelmingly commercial. A second hotspot was in the area just north of where the Langley Bypass and 196 Street intersect. In addition to this hotspot, the high volume of property crime extended to cover the Willowbrook Shopping Centre. A final high volume area was just to the north-east of the Willowbrook Shopping Centre along 64 Avenue between 200 Street and 203 Street. In fact, the hotspot here is again in a shopping area made up of several large box stores surrounded by smaller stores and shops. It should be noted that, although this area did not have a concentration of property crime to register as a hotspot, there was a large amount of property crime in the south eastern part of the city, namely in Aldergrove along Fraser Highway and 264 Street and along Fraser Highway and 272 Street.

**FIGURE 13: PROPERTY CRIME HOTSPOTS IN LANGLEY IN 2015**




As demonstrated in Table 23, the most notable predictor of property crime in Langley was the percentage of the area that was comprised of renters. Langley had one of the largest differentials for renters between property crime hotspots and non-hotspot areas. Specifically, the property crime hotspot had 2.8 times as many renters as the non-hotspot areas of the city. In addition, property crime hotspots in Langley featured significantly lower median household income levels and higher levels of residential mobility, while differences in the proportion of unmarried persons when comparing the property crime hotspot areas with the non-hotspot areas was marginally statistically significant.

**TABLE 23: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – LANGLEY**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 2,853 | 2,371 | 0.45 |
| Population Change 2006-2011 (%) | 11.0% | 5.6% | 0.20 |
| Young Males - Aged 15-24 (%) | 3.5% | 6.9% | -3.90** |
| Unmarried (%) | 56.9% | 39.0% | 2.23* |
| Mobility - Last 5 Years (%) | 62.6% | 39.2% | 2.88** |
| Immigration (%) | 19.3% | 16.5% | 0.73 |
| Aboriginal Population (%) | 4.0% | 3.0% | 0.51 |
| Median Household Income ($) | 45107 | 78090 | -2.85** |
| Unemployment Rate | 4.5 | 4.6 | -0.03 |
| Labour Force Participation (%) | 54.8% | 69.8% | -1.25 |
| Less Than High School Education (%) | 11.3% | 8.2% | 0.79 |
| Renters (%) | 45.0% | 15.9% | 3.69** |
| Housing Condition - Major Repairs (%) | 4.8% | 1.8% | 1.45 |

* p < .10; ** p < .05

## MAPLE RIDGE

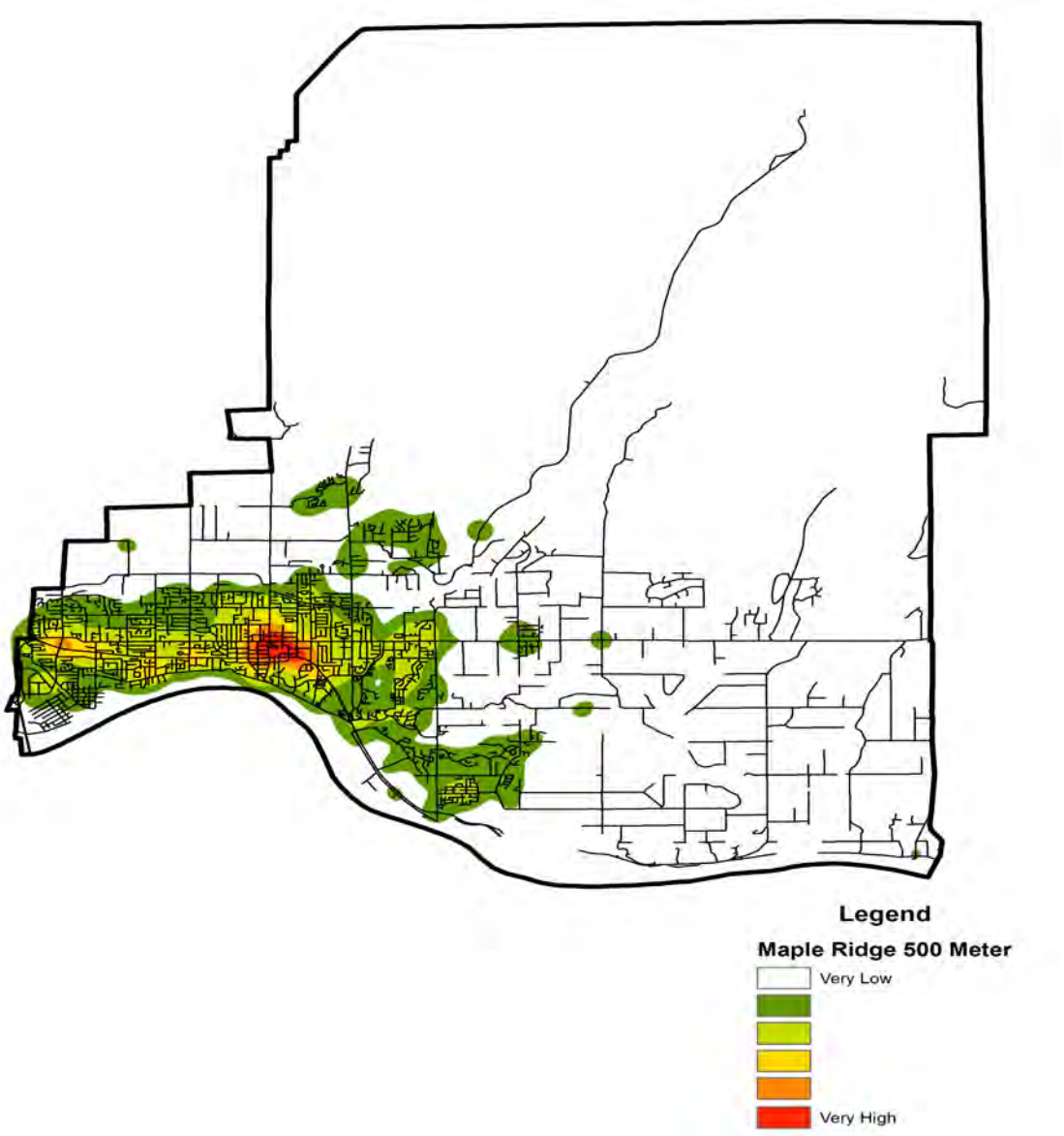
By the volume of property crime in 2015, Maple Ridge ranked tenth out of the 21 jurisdictions considered in this report. There were 4,506 property crimes in Maple Ridge or 12.3 property crimes per day in 2015. As expected based on the profiles already presented, the most common types of property crime in Maple Ridge were theft from vehicle (27.4 per cent), mischief to property (19.5 per cent), and other theft under $5000 (17.1 per cent). This was followed by shoplifting (7.6 per cent) and fraud (6.3 per cent). In total, these five offence types comprised more than three-quarters (77.9 per cent) of all property crimes in 2015 in Maple Ridge (see Table 24). In a typical day in 2015, on average, the RCMP recorded 3.4 thefts from vehicles, 2.4 mischiefs to property, 2.1 other thefts under $5,000, and less than one auto thefts per day in Maple Ridge, in addition to all the other offence types presented in Table 24. In terms of the more serious property crimes, in addition to the 257 auto thefts in 2015, there were also 222 break and enters of a residence, 196 break and enters of a business, and 77 break and enters 'other'. Taking all the break and enters together, the RCMP reported, on average, 1.4 break and enters per day. Finally, there were also 31 arsons, and a small number of theft over $5,000 (n = 42). Given this, slightly more than four-fifths (81.7 per cent) of all property crime was of a more minor nature in Maple Ridge in 2015.

**TABLE 24: PROPERTY CRIME PROFILE FOR MAPLE RIDGE IN 2015**

| | Raw Number (n = 4,506) | % of Total |
|---|---|---|
| Theft From Vehicle | 1,233 | 27.4% |
| Mischief to Property | 878 | 19.5% |
| Other Theft Under $5,000 | 768 | 17.1% |
| Shoplifting | 340 | 7.6% |
| Frauds | 282 | 6.3% |
| Auto Theft | 257 | 5.7% |
| Break & Enter – Residence | 222 | 4.9% |
| Break & Enter – Business | 196 | 4.4% |
| Bike Theft | 95 | 2.1% |
| Break & Enter – Other | 77 | 1.7% |
| Possession of Stolen Property | 77 | 1.7% |
| Other Theft Over $5,000 | 42 | 0.9% |
| Arson | 31 | 0.7% |

As demonstrated in Figure 14, the vast majority of property crime in Maple Ridge was concentrated in the south-western part of the city. There was one significant hotspot zone in 2015 that emanated in all directions from the intersection of Dewdney Trunk Road and 224 Street. To the south, this hotspot extended to Lougheed Highway, and northwards to 122 Avenue. The hotspot stretched from 222 Street to just past 228 Street. Of note, this hotspot covers both residential and commercial areas. There was a second, small high concentration hotspot between Dewdney Trunk Road and Lougheed Highway along 203 Street. This was not surprising given that on either side of 203 Street in this area are large shopping areas.

**FIGURE 14: PROPERTY CRIME HOTSPOTS IN MAPLE RIDGE IN 2015**




As was the case with Langley, the percentage of renters had the greatest effect on property crime in Maple Ridge (see Table 25). The percentage of unmarried persons was also strongly related to property crime rates, as was residential mobility and median household income. Other statistically significant distinguishing characteristics between property crime hotspot areas and non-hotspot areas included having a greater proportion of residents with less than a high school education and housing condition, while population density was only marginally significant. Conversely, neither of the economic indicators, namely, unemployment rate and labour force participation, showed significant differences between hotspot and non-hotspot areas; nor did the measures for the proportion of residents who were Aboriginal, the proportion of residents who were recent immigrants, or overall population change in Maple Ridge.

**TABLE 25: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – MAPLE RIDGE**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 4,632 | 2,163 | 2.04* |
| Population Change 2006-2011 (%) | 11.7% | 5.6% | 0.53 |
| Young Males - Aged 15-24 (%) | 5.9% | 7.5% | -2.04** |
| Unmarried (%) | 64.6% | 39.7% | 9.88** |
| Mobility - Last 5 Years (%) | 61.2% | 36.4% | 4.27** |
| Immigration (%) | 17.6% | 16.7% | 0.35 |
| Aboriginal Population (%) | 3.4% | 2.7% | 0.49 |
| Median Household Income ($) | $32,510 | $78,041 | -6.06** |
| Unemployment Rate | 7.8 | 5.2 | 1.28 |
| Labour Force Participation (%) | 57.2% | 69.5% | -1.61 |
| Less Than High School Education (%) | 16.6% | 6.8% | 3.59** |
| Renters (%) | 67.1% | 12.4% | 10.75** |
| Housing Condition - Major Repairs (%) | 13.3% | 2.2% | 3.06** |

* p < .10; ** p < .05

## MISSION

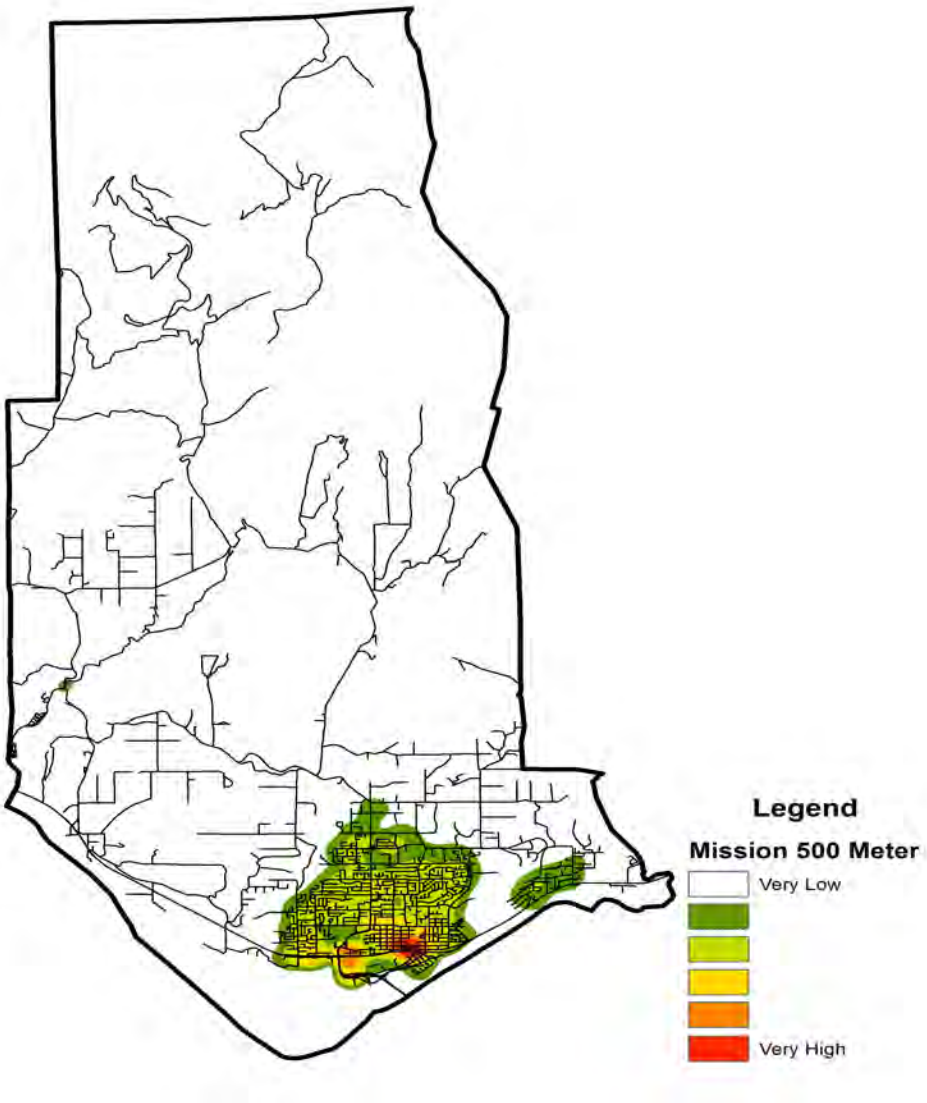
In 2015, Mission had 2,804 property crimes or 7.7 property crimes per day. By volume alone, Mission ranked 14th out of the 21 jurisdictions considered in this report. Very similar to the profiles presented above, the most common types of property crime were theft from vehicle (25.8 per cent), mischief to property (20.3 per cent), and other theft under $5000 (13.9 per cent). This was followed by auto theft (8.8 per cent) and shoplifting (6.4 per cent). In total, these five offence types comprised three-quarters (75.2 per cent) of all property crimes in Mission in 2015. In a typical day, on average, the Mission RCMP reported two thefts from vehicles, 1.6 mischiefs to property, 1.1 other thefts under $5,000, and just under one auto theft per day, in addition to all the other offence types presented in Table 26. In terms of the more serious property crimes, in addition to the 245 auto thefts in 2015, there were also 163 break and enters of a residence, 101 break and enters of a business, and 126 break and enters 'other'. Taking all the break and enters together, Mission RCMP recorded approximately one break and enter per day. Finally, there were also a number of arsons (n = 19) and a very small number of theft over $5,000 (n = 18). In effect, excluding the more serious types of property crime, approximately three-quarters (76 per cent) of all property crime was of a more minor nature in Mission in 2015.

**TABLE 26: PROPERTY CRIME PROFILE FOR MISSION IN 2015**

| | Raw Number (n = 2,804) | % of Total |
|---|---|---|
| Theft From Vehicle | 722 | 25.8% |
| Mischief to Property | 567 | 20.3% |
| Other Theft Under $5,000 | 388 | 13.9% |
| Auto Theft | 245 | 8.8% |
| Shoplifting | 179 | 6.4% |
| Break & Enter – Residence | 163 | 5.8% |
| Frauds | 150 | 5.4% |
| Break & Enter – Other | 126 | 4.5% |
| Break & Enter – Business | 101 | 3.6% |
| Bike Theft | 67 | 2.4% |
| Possession of Stolen Property | 51 | 1.8% |
| Arson | 19 | 0.7% |
| Other Theft Over $5,000 | 18 | 0.6% |

As expected, much of the property crime in Mission was concentrated in the southern part of the city (see Figure 15). There were two areas of higher concentration of property crime in Mission in 2015. The main hotspot extended from 2nd Avenue from Cedar Street to Stave Lake Street and from just south of Lougheed Highway to just south of 7th Avenue. This hotspot and its surrounding area of high concentration of property crime is characterized by a mix of commercial and residential blocks. The second area of high volume was to the west of the main hotspot and centered around another large commercial and industrial area along Lougheed Highway and the train tracks, bordered by the Abbotsford Mission Highway and the Cedar Valley Connector.

**FIGURE 15: PROPERTY CRIME HOTSPOTS IN MISSION IN 2015**




As was the case with Hope, the predictor that exerted the greatest effect on the levels of property crime in Mission was the percentage of individuals who were unmarried. As with most other municipalities, the proportion of renters and the median household income also varied significantly between the property crime hotspot areas and the non-hotspot area. In addition, as demonstrated in Table 27, the hotspot areas in Mission had proportionately more individuals with lower education levels. Finally, the prevalence of poor housing in the property crime hotspot areas was marginally statistically significant.

It should be noted that the effects of some variables in Mission were in the anticipated direction, but the magnitude of the effect size did not reach the required level to be considered statistically significant. For example, although residential mobility was higher in the property crime hotspot areas compared to the rest of the city, Mission was one of the few municipalities where residential

mobility was not related to property crime levels. Similarly, population density and the levels of immigration were higher and lower respectively in the property crime hotspot areas, but not statistically significantly higher or lower. Conversely, the effects of several other variables were contrary to what was expected, but they also failed to achieve statistical significance. For example, population change was lower in the property crime hotspot areas, while labour force participation was higher in the hotspot areas compared to the rest of the city. Again, although these relationships were unusual, they were not statistically significant in Mission.

**TABLE 27: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – MISSION**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 2,145 | 1,868 | 0.39 |
| Population Change 2006-2011 (%) | -1.2% | 5.7% | -0.45 |
| Young Males - Aged 15-24 (%) | 5.8% | 7.2% | -1.35 |
| Unmarried (%) | 58.0% | 41.2% | 4.24** |
| Mobility - Last 5 Years (%) | 44.6% | 37.5% | 0.91 |
| Immigration (%) | 8.6% | 12.8% | -0.92 |
| Aboriginal Population (%) | 10.1% | 5.5% | 1.15 |
| Median Household Income ($) | $42,777 | $71,087 | -2.70** |
| Unemployment Rate | 4.7 | 4.3 | 0.10 |
| Labour Force Participation (%) | 70.3% | 67.0% | 0.62 |
| Less Than High School Education (%) | 26.8% | 13.1% | 2.63** |
| Renters (%) | 48.2% | 14.7% | 3.88** |
| Housing Condition - Major Repairs (%) | 9.8% | 2.6% | 1.74* |

* p < .10; ** p < .05

## NEW WESTMINSTER

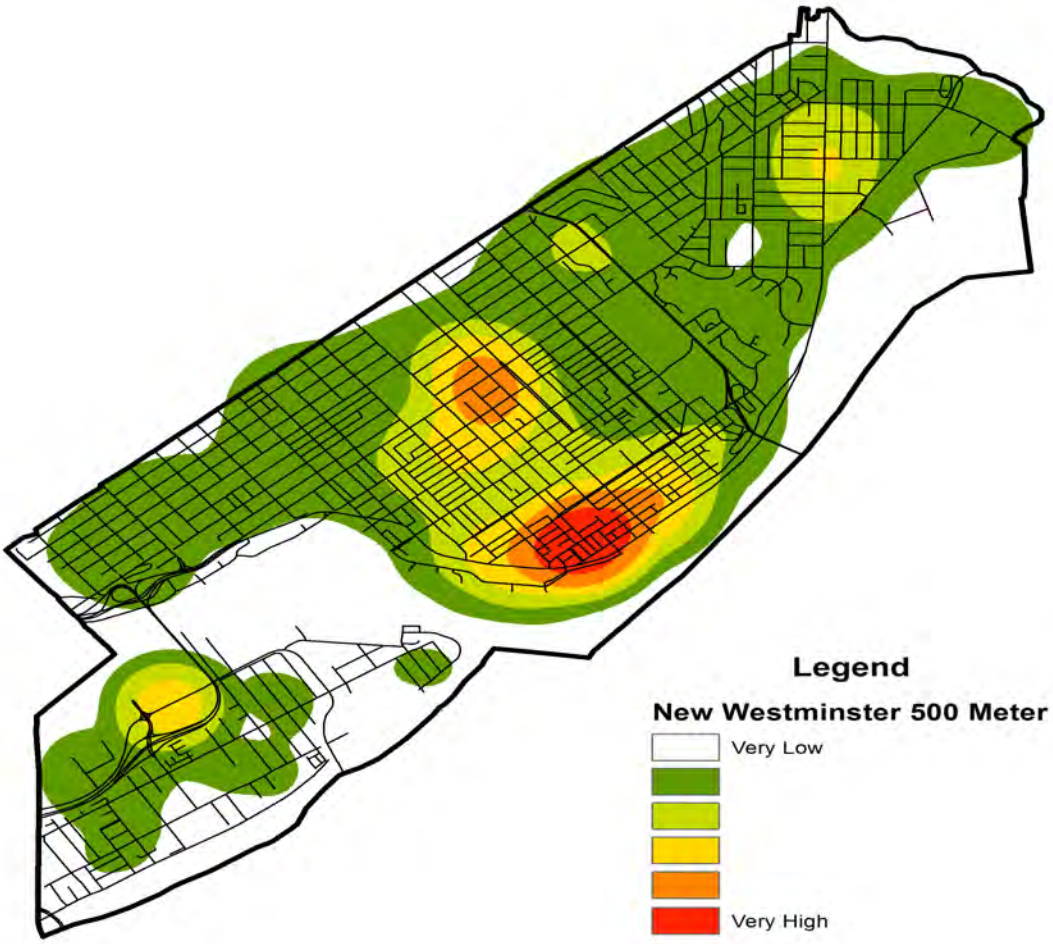
There were 3,493 property crimes in New Westminster in 2015 or 9.6 property crimes per day. By way of comparison, New Westminster ranked 11th out of the 21 jurisdictions considered in this report. As expected based on the profiles already presented, the most common property crime was theft from vehicle (20.2 per cent); however, this was followed by shoplifting (15.4 per cent) in New Westminster. The next three property crime types were mischief to property (15.3 per cent), other theft under $5000 (14.9 per cent), and fraud (10.2 per cent). In total, these five offence types comprised slightly more than three-quarters (76 per cent) of all property crimes in 2015 in New Westminster (see Table 28). On average, in a typical day in 2015, the New Westminster Police Department recorded 1.9 thefts from vehicle, 1.5 shoplifting offences, 1.5 mischief to property offences, and less than one auto theft per day, in addition to all the other offence types presented in Table 28. In terms of the more serious property crimes, in addition to the 255 auto thefts in 2015, there were also 193 break and enters of a business, 175 break and enters of a residence, and 60 break and enters 'other'. Taking all the break and enters together, the New Westminster Police Department reported, on average, 1.2 break and enters per day. Finally, there were also a small number of arsons (n = 13), and an equally small number of theft over $5,000 (n = 14). In effect, excluding the more serious types of property crime, approximately four-fifths (79.7 per cent) of all property crime was of a more minor nature in New Westminster in 2015.

**TABLE 28: PROPERTY CRIME PROFILE FOR NEW WESTMINSTER IN 2015**

| | Raw Number (n = 3,493) | % of Total |
|---|---|---|
| Theft From Vehicle | 701 | 20.2% |
| Shoplifting | 533 | 15.4% |
| Mischief to Property | 531 | 15.3% |
| Other Theft Under $5,000 | 516 | 14.9% |
| Frauds | 353 | 10.2% |
| Auto Theft | 255 | 7.3% |
| Break & Enter – Business | 193 | 5.6% |
| Break & Enter – Residence | 175 | 5.0% |
| Bike Theft | 91 | 2.6% |
| Break & Enter – Other | 60 | 1.7% |
| Possession of Stolen Property | 37 | 1.1% |
| Other Theft Over $5,000 | 14 | 0.4% |
| Arson | 13 | 0.4% |

While in the middle of all the jurisdictions included in this report, in terms of their volume of property crime, New Westminster's pattern was somewhat different from the others in that property crime was found nearly throughout the entire city in 2015. Still, there was one main hotspot and one high concentration area (see Figure 16). The main hotspot spread out from the intersection of Carnarvon Street and Eighth Street to the Fraser River to the south, Royal Avenue to the North, Tenth Street to the west, and Sixth Street to the east. This area is both residential and commercial and an area frequented by tourists. The other high concentration of property crime was found to the north between Fifth Street and Eighth Street and Seventh Avenue and Fifth Avenue. This area is characterized by some shopping, commercial businesses, restaurants, and condominiums.

**FIGURE 16: PROPERTY CRIME HOTSPOTS IN NEW WESTMINISTER IN 2015**




There were relatively few variables that distinguished property crime hotspots and non-hotspot areas in New Westminster (see Table 29). The variable with the largest effect size was actually housing condition. However, this effect was actually in the opposite direction from what was observed in many other municipalities in this report. In New Westminster property crime hotspot areas, the proportion of housing needing major repairs was significantly lower than it was in the non-hotspot areas. But, the effects of several other notable variables were more straightforward. Median household income was substantially lower in property crime hotspot areas, while population density and the percentage of unmarried individuals were substantially higher. Finally, the difference in residential mobility levels between the property crime hotspot areas (higher residential mobility) and non-hotspot areas (lower residential mobility) was marginally statistically significant in New Westminster.

There were also several variables that operated as expected, but were not statistically significant in their effects. For example, the percentages of renters and individuals with less than a high school education were higher in the property crime hotspot areas, and labour force participation was similarly lower in these areas. Of note, the size of these difference was not statistically significant. One insignificant variable that is worth noting was population change, which was more than 5½ times higher in the property crime hotspot areas when compared to the rest of New Westminster. On the face of it, this is a massive difference. However, consistent with some of the other municipalities examined in this report, such as Abbotsford, Burnaby, and Maple Ridge, because of the way this statistical test works, this apparently large variation was not statistically significant.

**TABLE 29: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – NEW WESTMINSTER**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 13,674 | 6,929 | 2.87** |
| Population Change 2006-2011 (%) | 49.1% | 6.4% | 1.16 |
| Young Males - Aged 15-24 (%) | 5.4% | 5.9% | -0.38 |
| Unmarried (%) | 57.9% | 47.5% | 2.37** |
| Mobility - Last 5 Years (%) | 59.2% | 47.1% | 1.74* |
| Immigration (%) | 37.3% | 31.0% | 1.24 |
| Aboriginal Population (%) | 1.3% | 3.1% | -1.82 |
| Median Household Income ($) | $40,241 | $64,322 | -2.31** |
| Unemployment Rate | 9.2 | 7.4 | 0.55 |
| Labour Force Participation (%) | 59.8% | 71.5% | -1.73 |
| Less Than High School Education (%) | 9.5% | 7.1% | 0.79 |
| Renters (%) | 52.2% | 42.1% | 0.87 |
| Housing Condition - Major Repairs (%) | 2.9% | 7.7% | -4.11** |

* p < .10; ** p < .05

## NORTH VANCOUVER

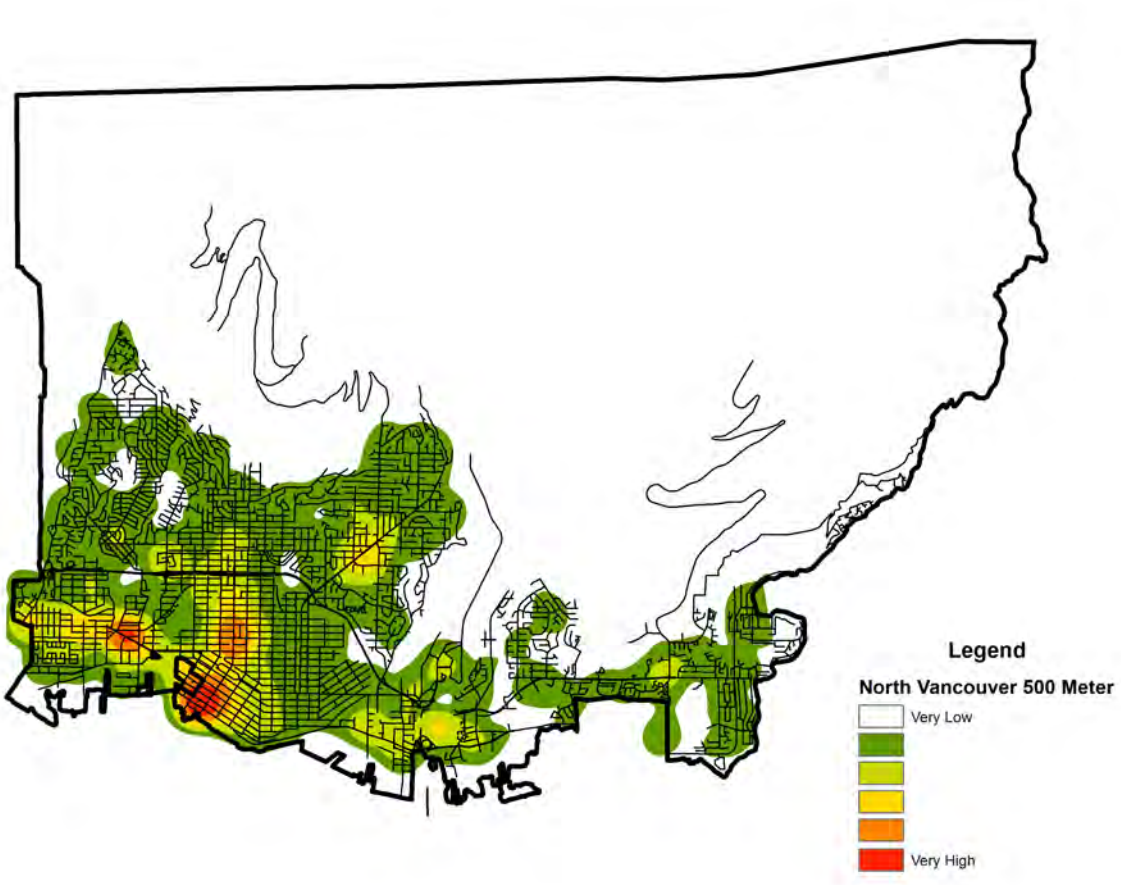
In 2015, North Vancouver had 4,599 property crimes or approximately 12.6 property crimes per day. Just by volume, North Vancouver ranked ninth out of the 21 jurisdictions considered in this report. The most common types of property crime were theft from vehicle (25.9 per cent), mischief to property (21.6 per cent), and other theft under $5000 (10.2 per cent). This was followed by frauds (8.9 per cent) and shoplifting (8.8 per cent). On average, in a typical day, the North Vancouver RCMP recorded 3.3 thefts from vehicles, 2.7 mischiefs to property, 1.3 other theft under $5,000, and approximately one auto theft every two days, in addition to all the other offence types presented in Table 30. In terms of the more serious property crimes, while there were 169 auto thefts in 2015, there were also 307 break and enters of a business, 233 break and enters of a residence, and 74 break and enters 'other'. Combining all the different types of break and enters, North Vancouver RCMP recorded 1.7 break and enters per day. Finally, there were also a number of arsons (n = 22) and a small number of thefts over $5,000 (n = 17) in 2015. In sum, slightly more than four-fifths (82.1 per cent) of all property crime was of a more minor nature in North Vancouver in 2015.

**TABLE 30: PROPERTY CRIME PROFILE FOR NORTH VANCOUVER 2015**

| | Raw Number (n = 4,599) | % of Total |
|---|---|---|
| Theft From Vehicle | 1,189 | 25.9% |
| Mischief to Property | 990 | 21.6% |
| Other Theft Under $5,000 | 470 | 10.2% |
| Frauds | 408 | 8.9% |
| Shoplifting | 402 | 8.8% |
| Break & Enter – Business | 307 | 6.7% |
| Bike Theft | 267 | 5.8% |
| Break & Enter – Residence | 233 | 5.1% |
| Auto Theft | 169 | 3.7% |
| Break & Enter – Other | 74 | 1.6% |
| Possession of Stolen Property | 40 | 0.9% |
| Arson | 22 | 0.5% |
| Other Theft Over $5,000 | 17 | 0.4% |

Given the distribution of residential and commercial areas in North Vancouver, it was not surprising that the majority of property crime occurred in the western and southern parts of the city. As demonstrated in Figure 17, there were three areas with very high concentrations of property crime. The first hotspot emanated from Marine Drive between Hamilton Avenue and Fell Avenue. As usual, there was a high density zone that surrounded this hotspot. This area is characterized mainly by retail stores, strip malls, and an outdoor mall. The largest hotspot was found in Lower Lonsdale, just to the north-east of the Lonsdale Quay Market. Specifically, the area between Lonsdale Avenue and St. Georges Avenue between 3rd Street East and the piers. This part of the city is a mix of residential and commercial areas. There was a third area with a very specific hotspot centered in the area between the Lions Gate Hospital and, interestingly, the North Vancouver RCMP department building. The area of high concentration extended from Lionsgate Avenue to St. Andrews Avenue and between 11th Street East to 18th Street East.

**FIGURE 17: PROPERTY CRIME HOTSPOTS IN NORTH VANCOUVER IN 2015**




As demonstrated in Table 31, several variables were strongly associated with differences in property crime levels across North Vancouver. The most notable effect was in relation to median household income, which was about 80% higher in non-hotspot property crime areas. Hotspots in North Vancouver had population densities that were 3½ times greater than those found in the non-hotspot areas of the city. Hotspot areas also had significantly higher levels of renters, unmarried persons, and residential mobility. Finally, property crime hotspot areas were also characterized by elevated immigration rates. For most of the remaining variables, the differences between hotspot and non-hotspot areas in North Vancouver were negligible and did not rise to the level of statistical significance.

**TABLE 31: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – NORTH VANCOUVER**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 14,094 | 3,900 | 8.09** |
| Population Change 2006-2011 (%) | 14.0% | 2.5% | 1.31 |
| Young Males - Aged 15-24 (%) | 4.4% | 6.7% | -5.73** |
| Unmarried (%) | 55.4% | 40.7% | 7.90** |
| Mobility - Last 5 Years (%) | 56.4% | 36.0% | 5.75** |
| Immigration (%) | 41.3% | 31.8% | 3.41** |
| Aboriginal Population (%) | 1.4% | 0.8% | 1.10 |
| Median Household Income ($) | $48,808 | $87,543 | -10.78** |
| Unemployment Rate | 5.5 | 4.2 | 1.03 |
| Labour Force Participation (%) | 69.4% | 68.5% | 0.23 |
| Less Than High School Education (%) | 3.3% | 1.8% | 1.35 |
| Renters (%) | 53.2% | 23.0% | 5.59** |
| Housing Condition - Major Repairs (%) | 5.7% | 4.4% | 0.77 |

* p < .10; ** p < .05

## PITT MEADOWS

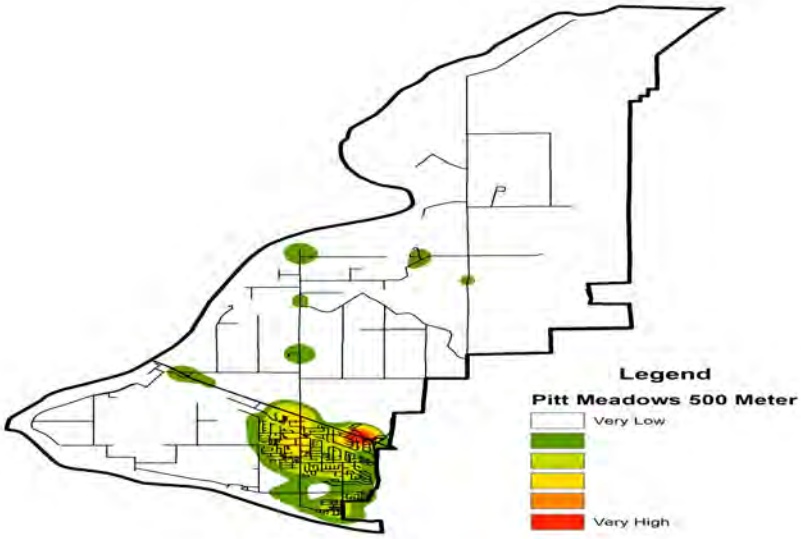
Pitt Meadows ranked 17th out of the 21 jurisdictions considered in this report in terms of the raw number of property offences recorded by the police, in 2015, and had 1,001 property crimes or approximately just 2.7 property crimes per day. The most common types of property crime were theft from vehicle (28.1 per cent), mischief to property (19.5 per cent), and other theft under $5000 (14.7 per cent). This was followed by shoplifting (13.6 per cent) and frauds (6.5 per cent). Given this, on average, in a typical day, the Pitt Meadows RCMP recorded less than one theft from vehicles, one mischief to property, and one other theft under $5,000 every other day, in addition to all the other offence types presented in Table 32. In terms of the more serious property crimes, there were 56 auto thefts in 2015, 36 break and enters of a residence, 32 break and enters of a business, and 13 break and enters 'other'. Combining all the different types of break and enters, Pitt Meadows RCMP recorded one break and enter every 4½ days. There were also very few arsons (n = 6) and thefts over $5,000 (n = 6) in 2015. Overall, while the number of property crimes was low, 85% of all property crime was of a more minor nature in Pitt Meadows in 2015.

**TABLE 32: PROPERTY CRIME PROFILE FOR PITT MEADOWS IN 2015**

| | Raw Number (n = 1,001) | % of Total |
|---|---|---|
| Theft From Vehicle | 281 | 28.1% |
| Mischief to Property | 195 | 19.5% |
| Other Theft Under $5,000 | 147 | 14.7% |
| Shoplifting | 136 | 13.6% |
| Frauds | 65 | 6.5% |
| Auto Theft | 56 | 5.6% |
| Break & Enter – Residence | 36 | 3.6% |
| Break & Enter – Business | 32 | 3.2% |
| Bike Theft | 17 | 1.7% |
| Break & Enter – Other | 13 | 1.3% |
| Possession of Stolen Property | 9 | 0.9% |
| Arson | 6 | 0.6% |
| Other Theft Over $5,000 | 6 | 0.6% |

As demonstrated in Figure 18, virtually all of the property crime in Pitt Meadows occurred in the southern part of the city and was found along Lougheed Highway in a mainly residential area. Just along the eastern edge of the hotspot and its surrounding high volume area is the outdoor Meadowtown Shopping Centre, which contributed to making this the area of highest concentration of property crime.

**FIGURE 18: PROPERTY CRIME HOTSPOTS IN PITT MEADOWS IN 2015**




As demonstrated by Table 33, Pitt Meadows is one of three municipalities, along with West Vancouver and Whistler, where none of the structural indicators utilized in this study were

substantially related to property crime. Simply put, in most cases, the variation between property crime hotspot and non-hotspot areas were generally very small. The differences in terms of the proportion of young males, unmarried residents, immigration, Aboriginal population, unemployment rate, labour force participation, proportion of residents with less than high school education, proportion of people who are renters, and housing condition were all less than five percentage points, while the difference for residential mobility did not exceed six points. Put another way, in terms of their compositions, property crime hotspots in Pitt Meadows looked very much the same as the non-hotspot areas of the city. It is possible that these findings were the result of the overall low level of property crime in Pitt Meadows, which might suppress the detection of any differences between the hotspot and the non-hotspot areas of the city.

**TABLE 33: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – PITT MEADOWS**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 1,087 | 3,309 | -1.14 |
| Population Change 2006-2011 (%) | 41.3% | 9.4% | 1.45 |
| Young Males - Aged 15-24 (%) | 6.3% | 6.3% | 0.05 |
| Unmarried (%) | 36.7% | 38.5% | -0.31 |
| Mobility - Last 5 Years (%) | 45.1% | 39.3% | 0.49 |
| Immigration (%) | 25.9% | 21.5% | 0.77 |
| Aboriginal Population (%) | 2.3% | 4.1% | -0.50 |
| Median Household Income ($) | $72,770 | $73,963 | -0.08 |
| Unemployment Rate | 5.2 | 4.2 | 0.31 |
| Labour Force Participation (%) | 73.9% | 69.6% | 0.62 |
| Less Than High School Education (%) | 7.3% | 3.7% | 1.07 |
| Renters (%) | 19.5% | 18.3% | 0.09 |
| Housing Condition - Major Repairs (%) | 3.6% | 2.1% | 0.37 |

* p < .10; ** p < .05

## PORT MOODY

Similar to Pitt Meadows, Port Moody ranked fourth from last out of the 21 jurisdictions considered in this report in terms of the raw number of property offences recorded by the police in 2015. This accounted for 904 property crimes or approximately just 2.5 property crimes per day. Similar to the other jurisdictions, the most common types of property crime were theft from vehicle (35.4 per cent), mischief to property (18.0 per cent), and other theft under $5000 (12.9 per cent). This was followed by frauds (11.2 per cent) and shoplifting (6.7 per cent). Given this, on average, in a typical day, the Port Moody Police Department recorded slightly less than one theft from vehicle per day, one mischief to property every two days, and one other theft under $5,000 every third day (see Table 34). In terms of the more serious property crimes, there were 32 auto thefts in 2015, 39 break and enters of a residence, 27 break and enters of a business, and six break and enters 'other'. Combining all the different types of break and enters, the Port Moody Police Department recorded one break and enter every five days. There were also very few arsons (n = 3) and thefts over $5,000 (n = 8) in 2015. Overall, the number of property crimes was low and, when excluding the more

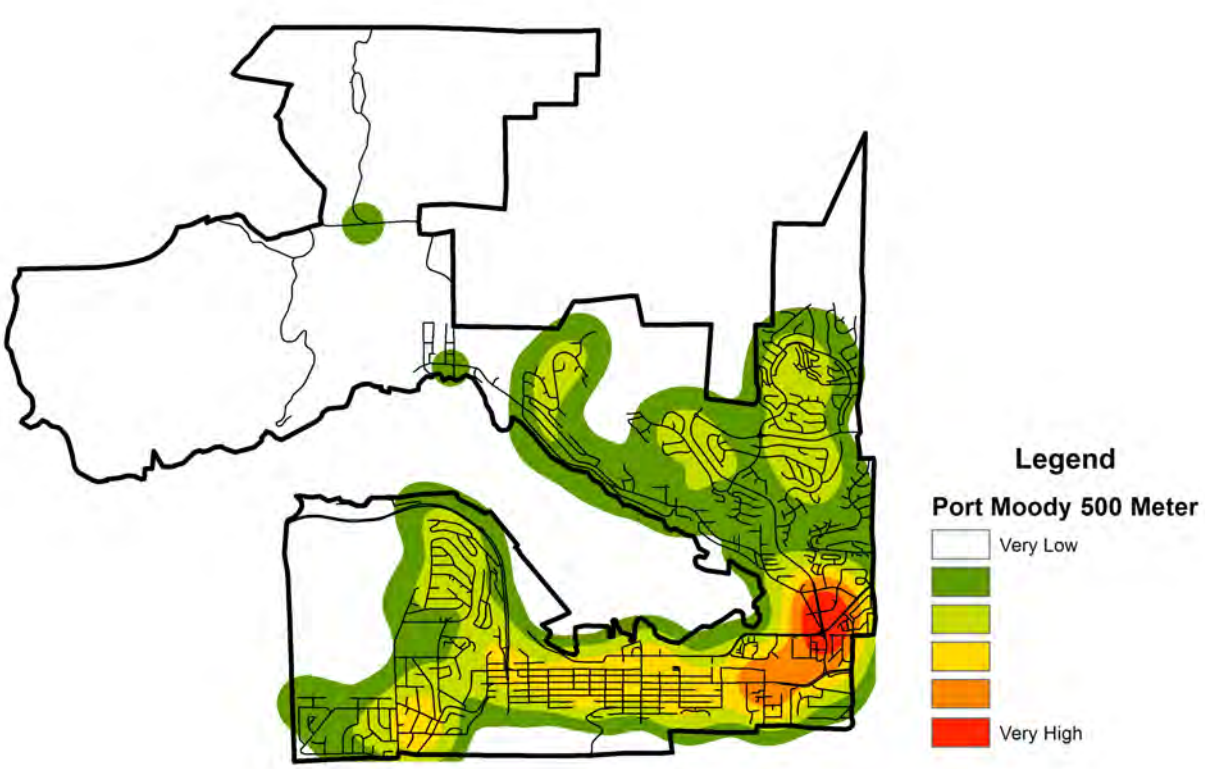
serious types of property crime, 87.2% of all property crime was of a more minor nature in Port Moody in 2015.

**TABLE 34: PROPERTY CRIME PROFILE FOR PORT MOODY IN 2015**

| | Raw Number (n = 904) | % of Total |
|---|---|---|
| **Theft From Vehicle** | **318** | **35.4%** |
| **Mischief to Property** | **162** | **18.0%** |
| **Other Theft Under $5,000** | **116** | **12.9%** |
| **Frauds** | **101** | **11.2%** |
| **Shoplifting** | **60** | **6.7%** |
| **Break & Enter – Residence** | **39** | **4.3%** |
| **Auto Theft** | **32** | **3.6%** |
| **Break & Enter – Business** | **27** | **3.0%** |
| **Possession of Stolen Property** | **14** | **1.6%** |
| **Bike Theft** | **13** | **1.4%** |
| **Other Theft Over $5,000** | **8** | **0.9%** |
| **Break & Enter – Other** | **6** | **0.7%** |
| **Arson** | **3** | **0.3%** |

While the distribution of property crime was throughout the southern and eastern parts of the city, there was only one main hotspot in Port Moody in 2015. As demonstrated in Figure 19, the centre of the hotspot was near the intersection of Guildford Way and Ioco Road. The hotspot extended north of Guildford Way to include shopping areas and some residential neighbourhoods, including the Port Moody Recreation Complex to Ungless Way. The hotspot also extended to the south of Guildford Way to include another small shopping area to the west of Ioco Road and a residential neighbourhood to the east of Ioco Road. The high concentration of property crimes also extended along both sides of Barnet Highway and St. Johns Street to include another commercial and residential area.

**FIGURE 19: PROPERTY CRIME HOTSPOTS IN PORT MOODY IN 2015**




Compared with many of the other municipalities in this study, the explanation for the variations found in the distribution of property crime hotspots in Port Moody is very straightforward. The difference between property crime hotspots and non-hotspots was primarily driven by differences in residential mobility, which was much higher in the hotspot and its surrounding area, and the median household income, which was significantly lower in the hotspot and surrounding high volume area (see Table 35). In addition, the positive effect of population density was marginally statistically significant. The effect of labour force participation similarly was marginally significant, but was contrary to expectations, as it was actually higher in the hotspot and high concentration area. Many of the other relationships, including those for the proportion of residents with less than high school education, the proportion of renters, and poor housing condition, were in the predicted direction, but were not large enough to be statistically significant.

**TABLE 35: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – PORT MOODY**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 6,938 | 2,949 | 2.16* |
| Population Change 2006-2011 (%) | -1.8% | 3.7% | -0.45 |
| Young Males - Aged 15-24 (%) | 5.1% | 7.3% | -3.28** |
| Unmarried (%) | 42.6% | 38.0% | 1.41 |
| Mobility - Last 5 Years (%) | 64.1% | 36.4% | 4.55** |
| Immigration (%) | 29.3% | 27.4% | 0.30 |
| Aboriginal Population (%) | 1.1% | 2.9% | -0.97 |
| Median Household Income ($) | $65,866 | $85,845 | -3.43** |
| Unemployment Rate | 6.0 | 6.2 | -0.10 |
| Labour Force Participation (%) | 77.3% | 70.5% | 1.78* |
| Less Than High School Education (%) | 3.1% | 2.8% | 0.09 |
| Renters (%) | 24.1% | 22.9% | 0.10 |
| Housing Condition - Major Repairs (%) | 12.5% | 4.0% | 1.10 |

* p < .10; ** p < .05

## RICHMOND

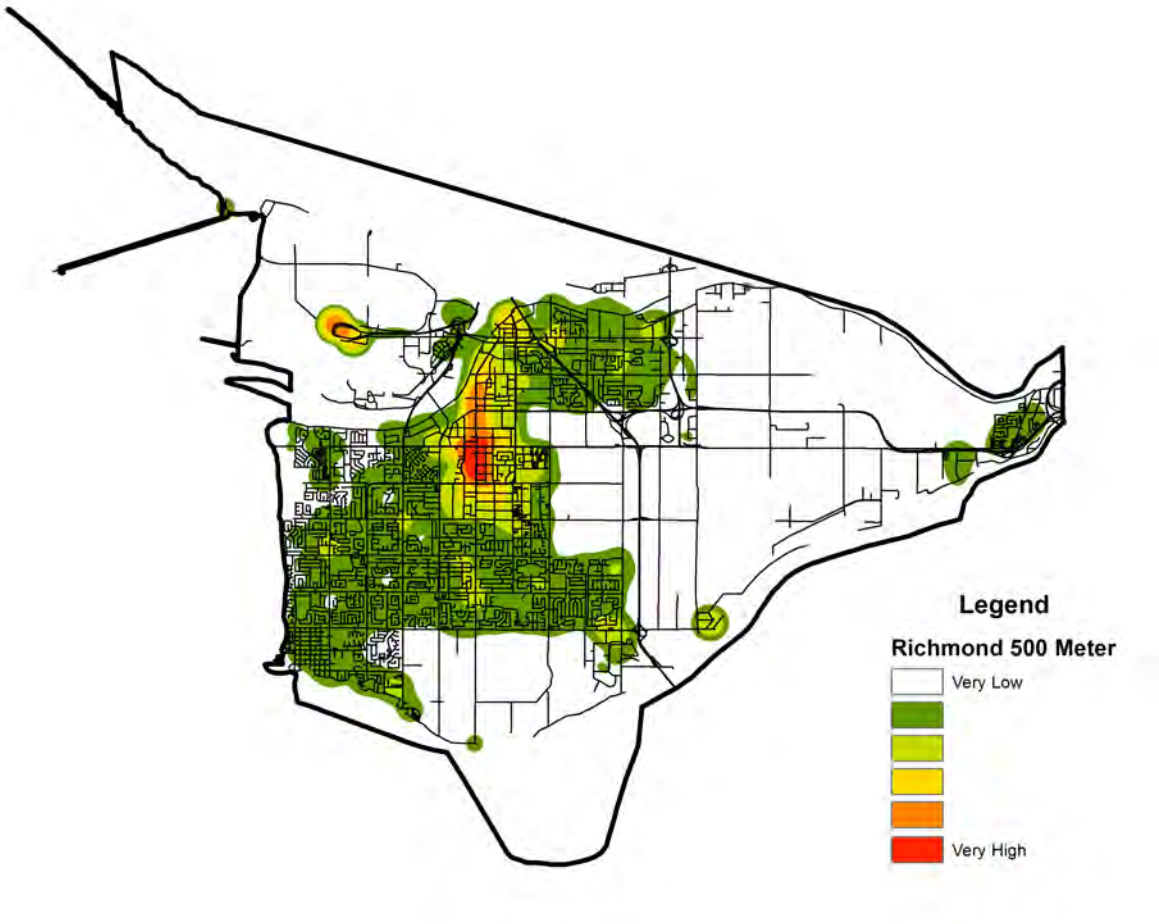
In 2015, Richmond had 8,237 property crimes or 22.6 property crimes per day. Just by volume, Richmond ranked fourth out of the 21 jurisdictions considered in this report. The most common types of property crime were theft from vehicle (28.8 per cent), other theft under $5000 (15.9 per cent), and mischief to property (16.6 per cent). This was followed by fraud (9.1 per cent) and, unlike most of the other cities examined thus far, residential break and enters (8.1 per cent). In effect, on average, in a typical day, the Richmond RCMP recorded 6.5 thefts from vehicles, 3.6 other theft under $5,000, 2.7 mischiefs to property, and one auto theft, in addition to all the other offence types presented in Table 36. In terms of the more serious property crimes, while there were 372 auto thefts in 2015, there were also 670 break and enters of a residence, 381 break and enters of a business, and 110 break and enters 'other'. Combining all the different types of break and enters, the Richmond RCMP recorded 3.2 break and enters per day. Finally, there were also a large number of arsons (n = 58) and a substantial number of thefts over $5,000 (n = 144). In sum, nearly four-fifths (78.6 per cent) of all property crime was of a more minor nature in Richmond in 2015.

**TABLE 36: PROPERTY CRIME PROFILE FOR RICHMOND IN 2015**

| | Raw Number (n = 8,237) | % of Total |
|---|---|---|
| Theft From Vehicle | 2,367 | 28.8% |
| Other Theft Under $5,000 | 1,310 | 15.9% |
| Mischief to Property | 975 | 11.8% |
| Frauds | 745 | 9.1% |
| Break & Enter – Residence | 670 | 8.1% |
| Shoplifting | 668 | 8.1% |
| Break & Enter – Business | 381 | 4.6% |
| Auto Theft | 372 | 4.5% |
| Bike Theft | 312 | 3.8% |
| Other Theft Over $5,000 | 144 | 1.7% |
| Break & Enter – Other | 110 | 1.3% |
| Possession of Stolen Property | 87 | 1.1% |
| Arson | 58 | 0.7% |

In Richmond, most of the property crime was recorded in the western part of the city. As demonstrated in Figure 20, there were two main pockets of high concentration and one major hotspot. The main hotspot was found in City Center, with the densest areas for property offences being found in the Brighouse Village neighbourhood between Westminster Highway and Granville Avenue along No. 3 Road. While not a hotspot, there was also a high concentration of property crime continuing along No. 3 Road to the north between Alderbridge Way and Cambie Road, an area known as Aberdeen Village. While there are residential blocks in this area, this is a very commercial part of the city. The second large concentration of property crime was located at the Vancouver International Airport.

**FIGURE 20: PROPERTY CRIME HOTSPOTS IN RICHMOND IN 2015**




The pattern of results for Richmond was reflective what has been noted in many of the other larger municipalities in this report. Akin to the results found in Abbotsford, Burnaby, and Surrey, median household income was the most important predictor of variations in property crime across hotspot and non-hotspot areas (see Table 37). Proportionately, the difference in income in these areas was among the highest (220%) of all the municipalities surveyed here. As well, the effect of immigration, which was significantly greater in the property crime hotspot and high volume areas, was the largest such effect across all of the municipalities. Many of the remaining significant variables might be characterized as the "usual suspects." The proportion of renters and unmarried persons, and levels of residential mobility, were all elevated in the Richmond property crime hotspot and high volume area, which also featured substantially higher population densities. It is worth noting that labour force participation was significantly lower in Richmond's property crime hotspot and high volume areas compared to the other parts of the city.

**TABLE 37: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – RICHMOND**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 15,403 | 5,017 | 2.93** |
| Population Change 2006-2011 (%) | 32.9% | 8.0 | 1.12 |
| Young Males - Aged 15-24 (%) | 6.2% | 7.4 | -1.55 |
| Unmarried (%) | 45.5% | 39.5 | 3.10** |
| Mobility - Last 5 Years (%) | 57.8% | 40.0 | 3.08** |
| Immigration (%) | 75.3% | 57.2 | 9.41** |
| Aboriginal Population (%) | 0.0% | 0.5 | -0.53 |
| Median Household Income ($) | $30,902 | $69,832 | -16.20** |
| Unemployment Rate | 3.1 | 5.6 | -1.20 |
| Labour Force Participation (%) | 51.7% | 61.6% | -2.57** |
| Less Than High School Education (%) | 11.1% | 6.7% | 1.77* |
| Renters (%) | 39.8% | 17.0% | 3.09** |
| Housing Condition - Major Repairs (%) | 2.9% | 4.0% | -0.38 |

* p < .10; ** p < .05

## SQUAMISH

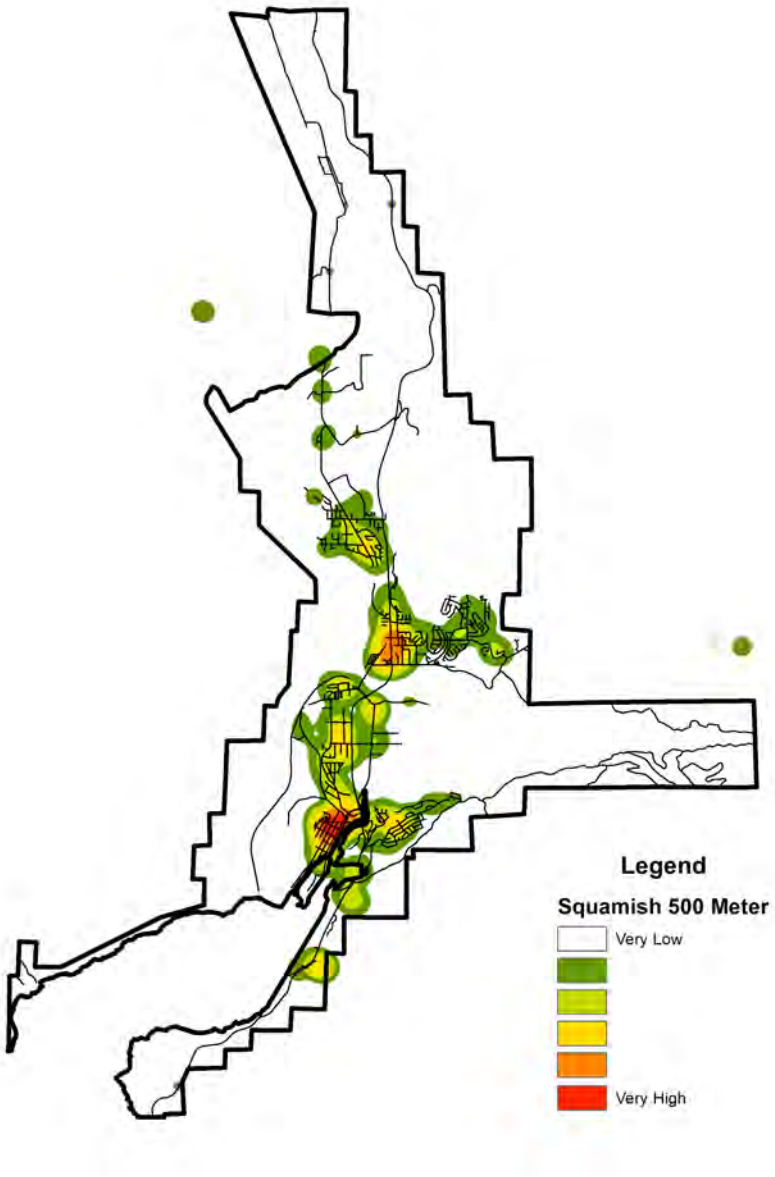
Squamish ranked third from last out of the 21 jurisdictions considered in this report in terms of the raw number of property offences recorded by the police in 2015. This accounted for 753 property crimes or approximately just 2.1 property crimes per day. Of note, the most common type of property crime in Squamish was mischief to property (20.5 per cent) followed by theft from vehicle (20.1 per cent), and other theft under $5000 (15.9 per cent). Rounding out the top five in Squamish were frauds (10.7 per cent) and auto theft (6.5 per cent) (see Table 38). In terms of the more serious property crimes, there were 49 auto thefts, 47 break and enters of a residence, 48 break and enters of a business, and 11 break and enters 'other' in 2015. Combining all the different types of break and enters, the Squamish RCMP recorded approximately one break and enter every 3½ days. There were also very few arsons (n = 5) and only two thefts over $5,000 in 2015. Overall, while the number of property crimes was very low compared to other jurisdictions examined in this report, when excluding the more serious types of property crime, more than three-quarters (78.4 per cent) of all property crime was of a more minor nature in Squamish in 2015.

**TABLE 38: PROPERTY CRIME PROFILE FOR SQUAMISH IN 2015**

| | Raw Number (n = 753) | % of Total |
|---|---|---|
| Mischief to Property | 154 | 20.5% |
| Theft From Vehicle | 151 | 20.1% |
| Other Theft Under $5,000 | 119 | 15.9% |
| Frauds | 80 | 10.7% |
| Auto Theft | 49 | 6.5% |
| Break & Enter – Business | 48 | 6.4% |
| Break & Enter – Residence | 47 | 6.3% |
| Bike Theft | 37 | 4.9% |
| Shoplifting | 30 | 4.0% |
| Possession of Stolen Property | 17 | 2.3% |
| Break & Enter – Other | 11 | 1.5% |
| Arson | 5 | 0.7% |
| Other Theft Over $5,000 | 2 | 0.3% |

Although there was very little property crime in Squamish in 2015, as demonstrated in Figure 21, geographically, there was one major hotspot in the southern part of the city and one other area of high concentration in the middle of the city. The hotspot in the southern part of Squamish was centered at the intersection of Winnipeg Street and 2 Avenue and extended from the Loggers Lane to 5 Avenue and from Victoria Street to Bailey Street. As expected, this is a commercial area with a number of hotels and some residences. The high concentration area was along the Sea to Sky Highway between Mamquam Road and Cheakamus Way. Again, this area is overwhelmingly commercial with an open shopping mall and other commercial businesses.

**FIGURE 21: PROPERTY CRIME HOTSPOTS IN SQUAMISH IN 2015**




Squamish comes close to being the "prototypical" municipality with regard to explaining property crime. As will become evident later, there were four variables that stood out in all of the municipal-level analysis; lower levels of median household income, higher levels of renters, the proportion of unmarried individuals, and residential mobility (see Table 39). These were precisely the effects found in Squamish, where these same variables are all statistically significant. Additionally, increased population density and decreased proportions of high school graduates were marginally significant. The remaining variables were very similar across both the property crime hotspot and the other areas of the city, and, therefore, cannot distinguish the hotspot from the non-hotspot areas.

**TABLE 39: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – SQUAMISH**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 2,415 | 1,186 | 1.89* |
| Population Change 2006-2011 (%) | 17.1% | 13.1% | 0.42 |
| Young Males - Aged 15-24 (%) | 6.2% | 6.2% | 0.02 |
| Unmarried (%) | 49.0% | 36.5% | 3.37** |
| Mobility - Last 5 Years (%) | 70.4% | 45.9% | 3.16** |
| Immigration (%) | 18.2% | 16.6% | 0.34 |
| Aboriginal Population (%) | 4.5% | 3.3% | 0.51 |
| Median Household Income ($) | $53,448 | $81,070 | -2.08** |
| Unemployment Rate | 7.5 | 6.0 | 0.46 |
| Labour Force Participation (%) | 79.0% | 76.0% | 0.73 |
| Less Than High School Education (%) | 2.0% | 7.1% | -1.87* |
| Renters (%) | 50.1% | 18.9% | 2.70** |
| Housing Condition - Major Repairs (%) | 10.7% | 3.2% | 1.13 |

* p < .10; ** p < .05

## WHISTLER

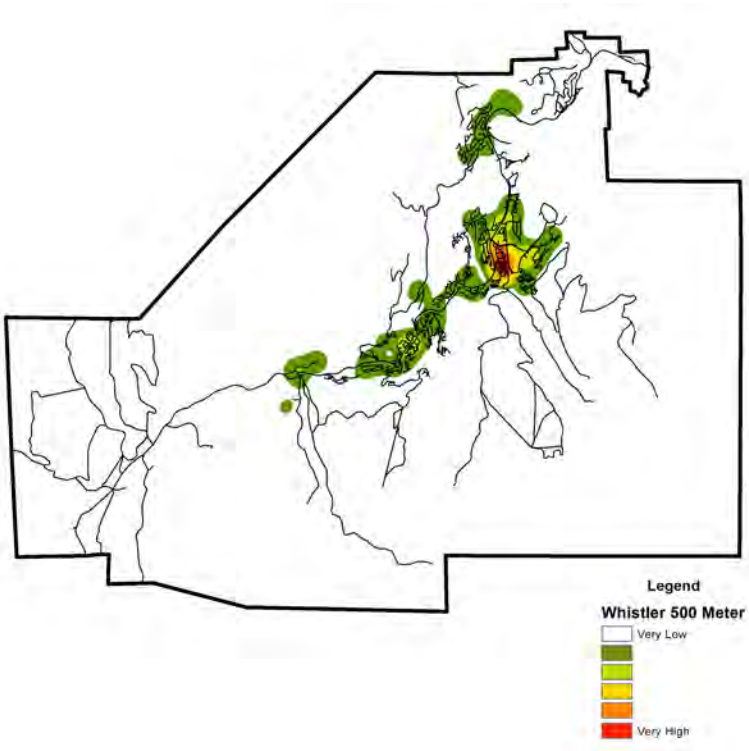
Whistler had the second fewer number of property crimes among the 21 jurisdictions considered in this report. As demonstrated in Table 40, in terms of the raw number of property offences recorded by the police, in 2015, Whistler had 740 property crimes or approximately just two property crimes per day. Given that Whistler is primarily a seasonal vacation location with a small permanent population, it was not surprising that the most common type of property offence was other theft under $5,000 (27.7 per cent), followed by mischief to property (25.0 per cent), and theft from vehicle (11.6 per cent). Rounding out the top five were bike theft (13.1 per cent) and fraud (5.2 per cent). In terms of the more serious property crimes, there were just 12 auto thefts in 2015, and 23 break and enters of a residence, 11 break and enters of a business, and 9 break and enters 'other'. Combining all the different types of break and enters, the RCMP recorded one break and enter approximately every eight days. There was also only one arson recorded by the RCMP and just 10 thefts over $5,000 in 2015. Overall, in additional to the number of property crimes being very low in Whistler in 2015, 87.2% of all property crime was of a more minor nature.

**TABLE 40: PROPERTY CRIME PROFILE FOR WHISTLER IN 2015**

| | Raw Number (n = 740) | % of Total |
|---|---|---|
| Other Theft Under $5,000 | 203 | 27.7% |
| Mischief to Property | 183 | 25.0% |
| Theft From Vehicle | 85 | 11.6% |
| Bike Theft | 83 | 13.1% |
| Frauds | 38 | 5.2% |
| Break & Enter – Residence | 23 | 3.1% |
| Shoplifting | 22 | 3.0% |
| Auto Theft | 12 | 1.6% |
| Possession of Stolen Property | 12 | 1.6% |
| Break & Enter – Business | 11 | 1.5% |
| Other Theft Over $5,000 | 10 | 1.4% |
| Break & Enter – Other | 9 | 1.2% |
| Arson | 1 | 0.1% |

As demonstrated in Figure 22, virtually all of the property crime in Whistler occurred in the part of the city known as the Village between the Sea-To-Sky Highway and Blackcomb Way. This was not unexpected as this is the main tourist and recreational area of Whistler characterized by restaurants, shopping stores, bars, hotels, and parking lots.

**FIGURE 22: PROPERTY CRIME HOTSPOTS IN WHISTLER IN 2015**



Whistler was similar to Pitt Meadows and West Vancouver insofar as it did not demonstrate any statistically significant differences between its property crime hotspots and high volume areas, and its non-hotspot areas. Unlike Pitt Meadows and West Vancouver, however, this finding was less about a lack of variation and more about sample size. There were several variables that showed at least moderate sized differences between Whistler's one property crime hotspot and the rest of the city (see Table 41). For example, both the proportion of unmarried people and residence mobility were more than 10 percentage points higher in the Whistler hotspot, which also had twice as many renters. At the same time, the Whistler hotspot had less than one-third the proportion of immigrants. But, because of the relatively small number of disseminations areas in Whistler (n = 17), none of these differences were statistically significant.

**TABLE 41: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – WHISTLER**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 402 | 611 | -0.38 |
| Population Change 2006-2011 (%) | 7.0% | -2.3% | 0.58 |
| Young Males - Aged 15-24 (%) | 8.8% | 8.1% | 0.27 |
| Unmarried (%) | 57.4% | 46.5% | 1.44 |
| Mobility - Last 5 Years (%) | 73.3% | 62.3% | 1.09 |
| Immigration (%) | 5.3% | 19.7% | -1.70 |
| Aboriginal Population (%) | 0.0% | 0.0% | |
| Median Household Income ($) | $61,987 | $67,133 | -0.28 |
| Unemployment Rate | 0.0 | 7.0 | -1.20 |
| Labour Force Participation (%) | 87.3% | 82.4% | 0.60 |
| Less Than High School Education (%) | 0.0% | 0.0% | |
| Renters (%) | 63.3% | 31.7% | 1.54 |
| Housing Condition - Major Repairs (%) | 0.0% | 0.3% | -0.24 |

* p < .10; ** p < .05

## SURREY

The City of Surrey had the second highest volume of property crime in 2015 among the 21 jurisdictions analysed in this report. In 2015, Surrey had 30,727 property crimes or approximately 84 property crimes per day. Although it had the second highest number of property crimes, the distribution by type of these offences was very similar to most of the other jurisdictions. For example, the most common property crime in Surrey was theft from vehicle (23.5 per cent). This was followed by other theft under $5000 (15.2 per cent), and mischief to property (13.8 per cent). Rounding out the top five property offence types were fraud (12.1 per cent) and auto theft (10.4 per cent). On average, in a typical day, the Surrey RCMP recorded 19.8 thefts from vehicles, 11.6 mischiefs to property, 12.8 other theft under $5,000, and 8.7 auto thefts, in addition to all the other offence types presented in Table 42. In terms of the more serious property crimes, while there were 3,178 auto thefts in 2015, there were also 1,998 break and enters of a residence, 1,269 break and enters of a business, and 511 break and enters 'other'. Combining all the different types of break and enters, the Surrey RCMP recorded 17.7 break and enters per day. Finally, there were also a substantial number of arsons (n = 173) and a large number of thefts over $5,000 (n = 167) in 2015.

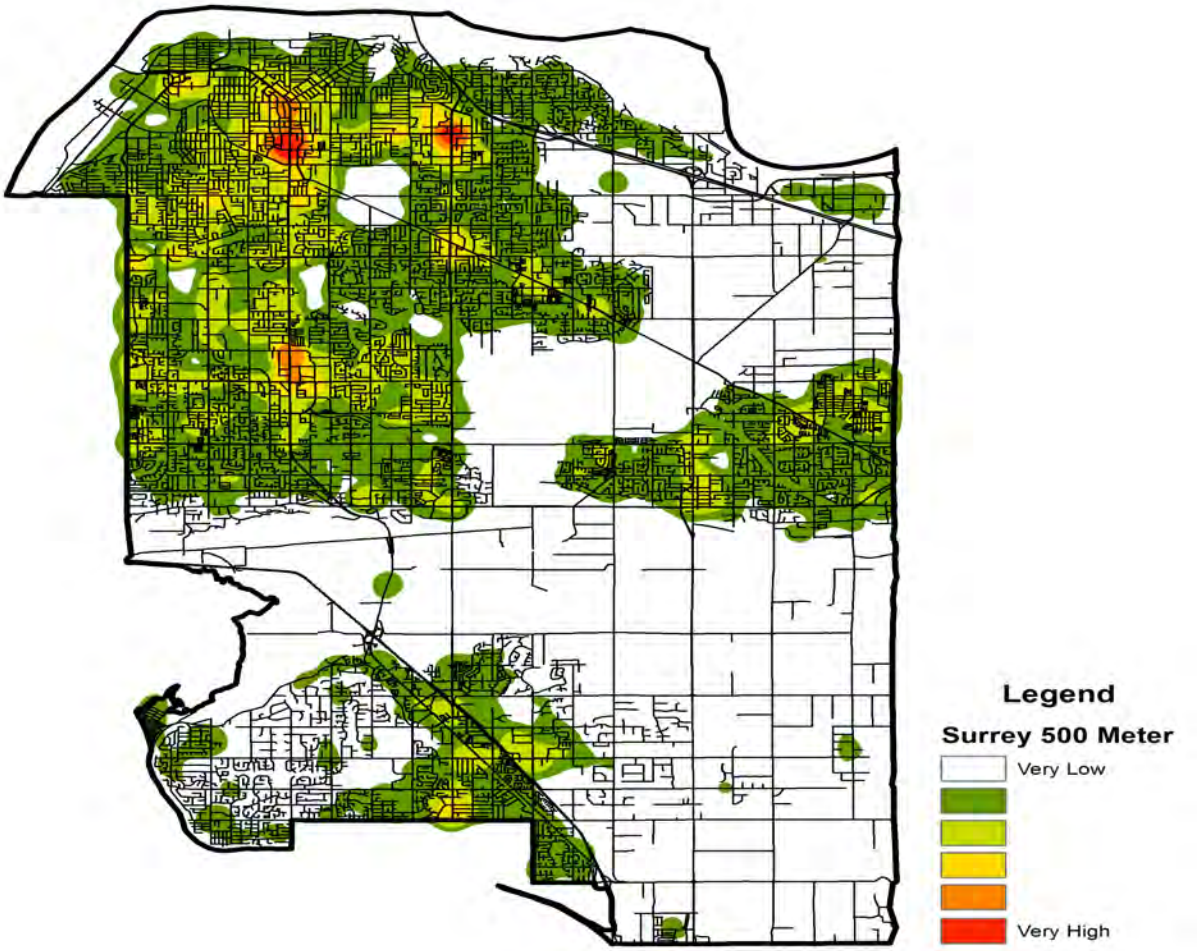
In effect, excluding the more serious types of property crime, approximately three-quarters (76.1 per cent) of all property crime was of a more minor nature in Surrey in 2015.

**TABLE 42: PROPERTY CRIME PROFILE FOR SURREY IN 2015**

| | Raw Number (n = 30,727) | % of Total |
|---|---|---|
| **Theft From Vehicle** | **7,224** | **23.5%** |
| **Other Theft Under $5,000** | **4,663** | **15.2%** |
| **Mischief to Property** | **4,238** | **13.8%** |
| **Frauds** | **3,698** | **12.1%** |
| **Auto Theft** | **3,178** | **10.4%** |
| **Shoplifting** | **2,618** | **8.5%** |
| **Break & Enter – Residence** | **1,998** | **6.5%** |
| **Break & Enter – Business** | **1,269** | **4.1%** |
| **Bike Theft** | **576** | **1.9%** |
| **Break & Enter – Other** | **511** | **1.7%** |
| **Possession of Stolen Property** | **327** | **1.1%** |
| **Arson** | **173** | **0.6%** |
| **Other Theft Over $5,000** | **167** | **0.5%** |

Given the large population of Surrey and the high volume of property crime, it was not unexpected that property crime would be found throughout the city. However, as demonstrated in Figure 23, the highest concentrations of property crime were found in three general areas; two of these areas were along King George Highway in the western part of the city, and one hotspot was found at the intersection of 104 Avenue and 152 Street. As expected, the latter hotspot was focused around Guildford Town Centre, which is a large shopping complex spanning several city blocks on both sides of 152 Street. The hotspot towards the northern end of King George Highway, and its surrounding area of a high concentration of property crime is another multi-block shopping, commercial, and recreational part of the city in Whalley. In addition to Central City Mall, this area also contains Surrey Central Train Station, Surrey Libraries, Surrey City Hall, and borders Holland Park. There is also an outdoor shopping area with several big box stores. The third area with a high concentration of property crime was also along King George Highway between 76 Avenue and 72 Avenue. This area is characterized by a number of outdoor shopping malls on both sides of King George Highway.

**FIGURE 23: PROPERTY CRIME HOTSPOTS IN SURREY IN 2015**




Surrey was the true prototypical lower mainland municipality with regard to structural explanations of property crime. What we might refer to as the "big four" factors, namely median household income, the proportion of renters, the proportion of unmarried individuals, and residential mobility, were all in evidence in Surrey (see Table 43). In fact, Surrey property crime hotspots featured significantly lower income levels and higher levels of renters, unmarried individuals, and residential mobility. In virtually all other respects, Surrey areas were indistinguishable from each other. None of the differences in immigration, Aboriginal population, unemployment rate, labour force participation, level of education, and housing condition between hotspots and non-hotspots in Surrey exceeded three percentage points. Even population density was nearly identical in property crime hotspots compared to the non-hotspot areas of the city.

**TABLE 43: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – SURREY**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 3,798 | 3,838 | -0.05 |
| Population Change 2006-2011 (%) | 24.2% | 18.3% | 0.32 |
| Young Males - Aged 15-24 (%) | 6.1% | 7.2% | -2.03** |
| Unmarried (%) | 51.8% | 38.8% | 6.14** |
| Mobility - Last 5 Years (%) | 56.8% | 41.1% | 3.62** |
| Immigration (%) | 42.1% | 39.6% | 0.55 |
| Aboriginal Population (%) | 2.8% | 1.9% | 0.77 |
| Median Household Income ($) | $44,132 | $75,368 | -9.49** |
| Unemployment Rate | 7.4 | 7.0 | 0.23 |
| Labour Force Participation (%) | 63.3% | 65.2% | -0.71 |
| Less Than High School Education (%) | 12.7% | 12.1% | 0.20 |
| Renters (%) | 41.4% | 24.7% | 2.72** |
| Housing Condition - Major Repairs (%) | 3.4% | 2.1% | 0.88 |

* p < .10; ** p < .05

## WHITE ROCK

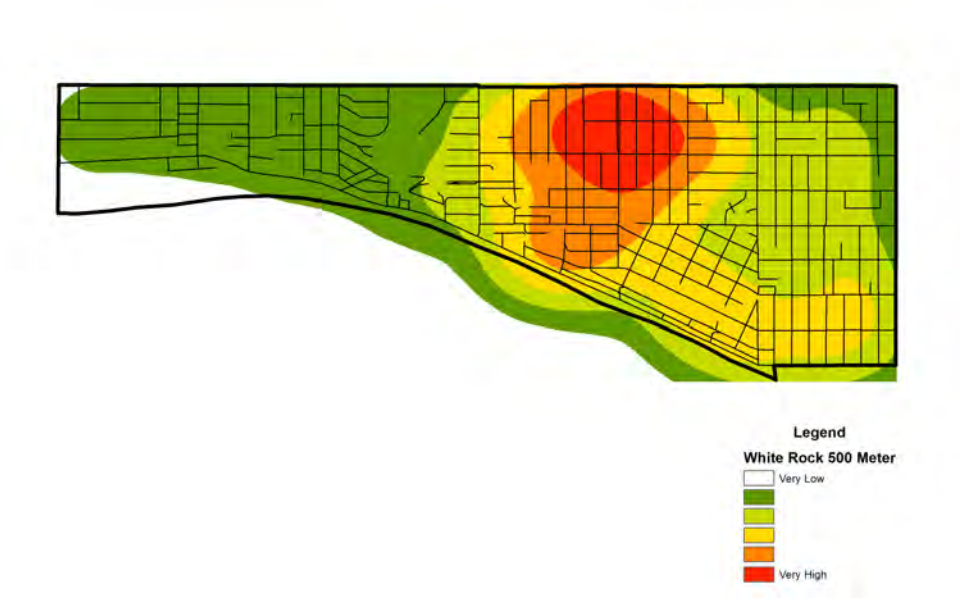
In 2015, White Rock had 988 property crimes or just 2.7 property crimes per day (see Table 45). By volume, White Rock ranked 18th out of the 21 jurisdictions considered in this report. Even with a low number of property crimes, the most common type of property crime was theft from vehicle (25.5 per cent). Unlike the other jurisdictions examined in this report, the second most common property crime offence in White Rock was fraud (24.5 per cent). It is possible that the higher concentration of elderly people, as will be discussed below, and the large number of tourists that visit this area explain, in part, the finding that fraud was the second most common property crime in White Rock in 2015. In terms of the other common property crime types, mischief to property (15.7 per cent), other theft under $5000 (9.1 per cent), and auto theft (6.4 per cent) rounded out the top five. In terms of the more serious property crimes, while there were 63 auto thefts in 2015, there were also 57 break and enters of a residence, 54 break and enters of a business, and 12 break and enters 'other'. Combining all the different types of break and enters, the RCMP recorded approximately one break and enter every three days. Finally, there were three arsons and three other thefts over $5,000 in 2015. In effect, excluding the more serious types of property crime, approximately four-fifths (80.4 per cent) of all property crime was of a more minor nature in White Rock in 2015.

**TABLE 45: PROPERTY CRIME PROFILE FOR WHITE ROCK IN 2015**

| | Raw Number (n = 988) | % of Total |
|---|---|---|
| Theft From Vehicle | 251 | 25.5% |
| Frauds | 241 | 24.5% |
| Mischief to Property | 154 | 15.7% |
| Other Theft Under $5,000 | 90 | 9.1% |
| Auto Theft | 63 | 6.4% |
| Break & Enter – Residence | 57 | 5.8% |
| Break & Enter – Business | 54 | 5.5% |
| Bike Theft | 30 | 3.0% |
| Shoplifting | 16 | 1.6% |
| Break & Enter – Other | 12 | 1.2% |
| Possession of Stolen Property | 10 | 1.0% |
| Arson | 3 | 0.3% |
| Other Theft Over $5,000 | 3 | 0.3% |

Although there was a relatively low number of property crimes compared to some of the other jurisdictions, property crime was distributed throughout White Rock. Nonetheless, there was one substantial hotspot that was surrounded by a large high density area (see Figure 24). The hotspot was along Johnston Road from North Bluff Road to Roper Avenue. While there are some condominiums along Johnston Road, predominately, this is a shopping area with a mix of small stores, restaurants, and cafes, in addition to some larger outside malls.

**FIGURE 24: PROPERTY CRIME HOTSPOTS IN WHITE ROCK IN 2015**



The results from the analysis of White Rock illustrated much the same pattern as seen across other municipalities in this study. Once again, lower median household income was the single biggest factor in distinguishing the property crime hotspot from non-hotspots in White Rock (see Table 46). The White Rock hotspot was also more densely populated, contained more unmarried individuals, and had lower labour force participation. There was also a statistically significant relationship demonstrated by immigration, which was considerably higher in the hotspot and its surrounding high volume area compared to the rest of the city.

**TABLE 46: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – WHITE ROCK**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 8,230 | 3,617 | 4.86** |
| Population Change 2006-2011 (%) | 8.6% | 1.1% | 1.59 |
| Young Males - Aged 15-24 (%) | 2.7% | 4.8% | -3.45** |
| Unmarried (%) | 56.8% | 43.2% | 5.23** |
| Mobility - Last 5 Years (%) | 46.7% | 44.1% | 0.55 |
| Immigration (%) | 31.4% | 20.8% | 3.87** |
| Aboriginal Population (%) | 1.3% | 1.3% | -0.02 |
| Median Household Income ($) | $43,941 | $73,947 | -5.38** |
| Unemployment Rate | 4.5 | 4.2 | 0.14 |
| Labour Force Participation (%) | 51.5% | 65.1% | -3.84** |
| Less Than High School Education (%) | 2.3% | 2.4% | -0.04 |
| Renters (%) | 35.1% | 30.6% | 0.83 |
| Housing Condition - Major Repairs (%) | 2.9% | 4.3% | -0.53 |

* p < .10; ** p < .05

## THE CITY OF VANCOUVER

Given its size and population, as expected, Vancouver had the highest volume of property crime compared to the other jurisdictions analysed in this report. In 2015, Vancouver had 37,581 property crimes or approximately 103 property crimes per day. While the most common types of property crime were theft from vehicle (27.3 per cent) and other theft under $5000 (15.3 per cent), unlike all of the other jurisdictions, the third most common property crime in Vancouver was shoplifting (11.3 per cent). This was followed by mischief to property (10.5 per cent), and, again, unique for a large city like Vancouver, bike theft (8.1 per cent). Given this, on average, in a typical day, the Vancouver Police Department recorded 28.1 thefts from vehicles, 15.8 other theft under $5,000, 11.7 shoplifting offences, and 3.8 auto thefts, in addition to all the other offence types presented in Table 47. In terms of the more serious property crimes, while there were 1,386 auto thefts in 2015, there were even more break and enters of a business (n = 2,459) and break and enters of a residence (n = 2,347), while there were an additional 740 break and enters 'other'. Combining all the different types of break and enters, the Vancouver Police Department recorded 15.2 break and enters per day. Finally, there were also a substantial number of arsons (n = 187) and other thefts over $5,000 (n = 180) in 2015. Still, even with this large number of serious property crimes, approximately four-fifths (80.5 per cent) of all property crime was of a more minor nature in Vancouver in 2015.

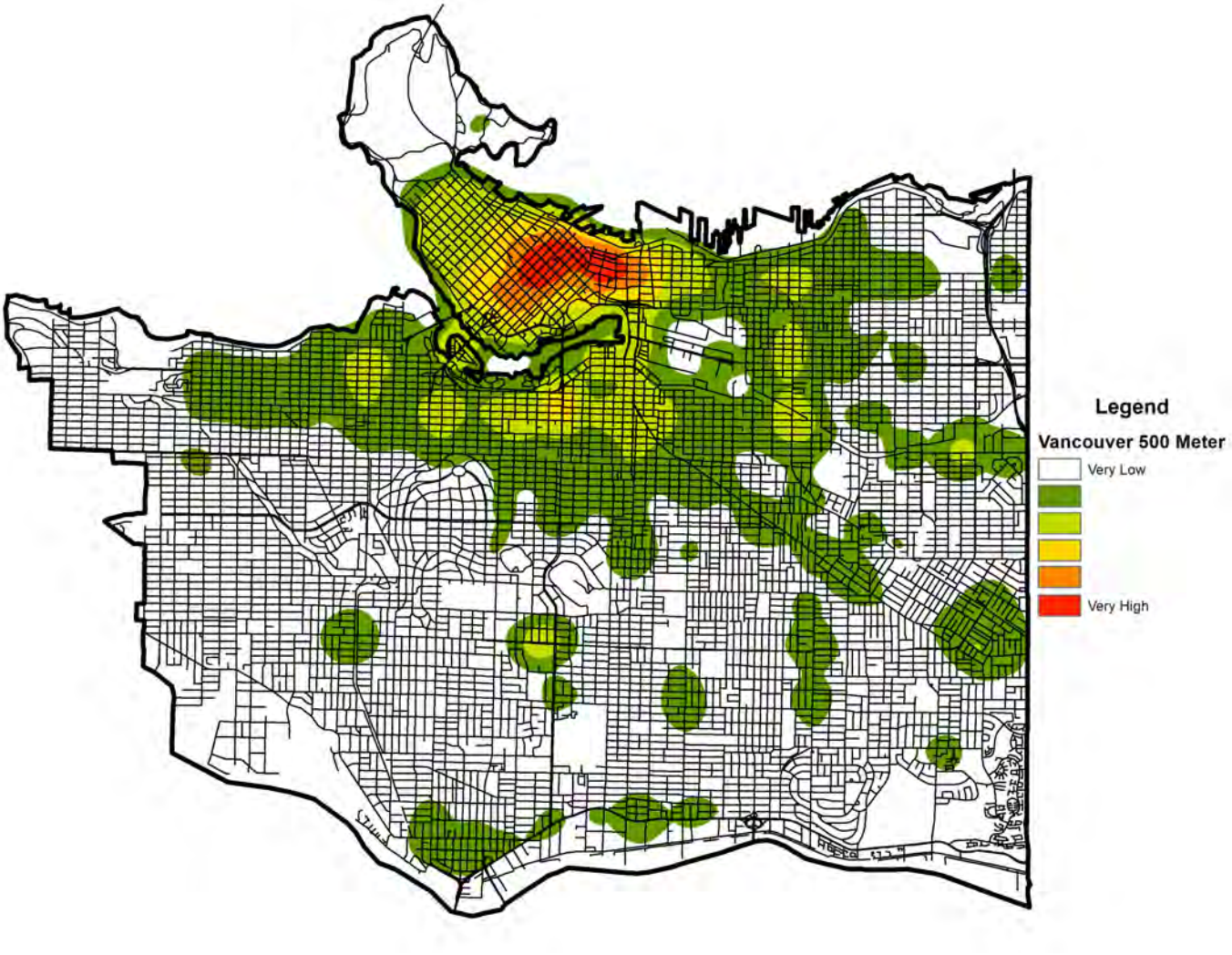
**TABLE 47: PROPERTY CRIME PROFILE FOR VANCOUVER IN 2015**

| | Raw Number (n = 37,581) | % of Total |
|---|---|---|
| Theft From Vehicle | 10,261 | 27.3% |
| Other Theft Under $5,000 | 5,755 | 15.3% |
| Shoplifting | 4,258 | 11.3% |
| Mischief to Property | 3,940 | 10.5% |
| Bike Theft | 3,056 | 8.1% |
| Frauds | 2,624 | 7.0% |
| Break & Enter – Business | 2,459 | 6.5% |
| Break & Enter – Residence | 2,347 | 6.2% |
| Auto Theft | 1,386 | 3.7% |
| Break & Enter – Other | 740 | 2.0% |
| Possession of Stolen Property | 375 | 1.0% |
| Arson | 187 | 0.5% |
| Other Theft Over $5,000 | 180 | 0.5% |

Given the large population of Vancouver and the high volume of property crime, it was not unexpected that property crime would be found distributed throughout the city.[12] However, as demonstrated in Figure 25, the highest concentrations of property crime covered a large amount of territory from Burrard Street to Columbia Street and between Nelson Street to Water Street. This area includes Gastown and the downtown core of Vancouver.

[12] Due to the high density of property crime in and around the Downtown Eastside in Vancouver, the density map suggests that there were large portions of Vancouver with low levels of property crime. While this is accurate, the nature of the density map can give the false impression that there was virtually no property crime in many parts of the city. Conversely, it is important to note that property crime was found throughout the entire City of Vancouver.

**FIGURE 25: PROPERTY CRIME HOTSPOTS IN VANCOUVER IN 2015**




In most respects, as expected, the City Vancouver closely mirrored Surrey with regards to a structural accounting of property crime. Like Surrey, property crime hotspot and non-hotspot areas in Vancouver were differentiated by the "big four" factors; median household income, the proportion of renters, the proportion of unmarried individuals, and residential mobility (see Table 48). As usual, the large hotspot in Vancouver was characterized by comparatively less income, more renters, more unmarried individuals, and more residential mobility. It is also worth noting that, unlike Surrey, the Vancouver hotspot and its surrounding high volume property crime area was much more densely populated compared to the rest of the city. Also in contrast to Surrey, immigration varied significantly between the hotspot and the other parts of the city. More specifically, in Vancouver, the hotspot area had proportionately fewer immigrants compared to the non-hotspot areas.

**TABLE 48: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – VANCOUVER**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 18,264 | 9,290 | 4.75** |
| Population Change 2006-2011 (%) | 13.4% | 2.4 | 0.97 |
| Young Males - Aged 15-24 (%) | 6.0% | 6.2 | -0.27 |
| Unmarried (%) | 64.9% | 49.0 | 7.38** |
| Mobility - Last 5 Years (%) | 68.3% | 43.9 | 7.07** |
| Immigration (%) | 32.6% | 44.0 | -3.57** |
| Aboriginal Population (%) | 1.9% | 1.4 | 0.66 |
| Median Household Income ($) | $44,772 | $65,533 | -3.34** |
| Unemployment Rate | 8.3 | 6.0 | 0.76 |
| Labour Force Participation (%) | 68.2% | 66.6% | 0.41 |
| Less Than High School Education (%) | 4.6% | 7.6% | -1.54 |
| Renters (%) | 68.8% | 44.9% | 6.48** |
| Housing Condition - Major Repairs (%) | 4.8% | 6.1% | -0.71 |

* p < .10; ** p < .05

## WEST VANCOUVER

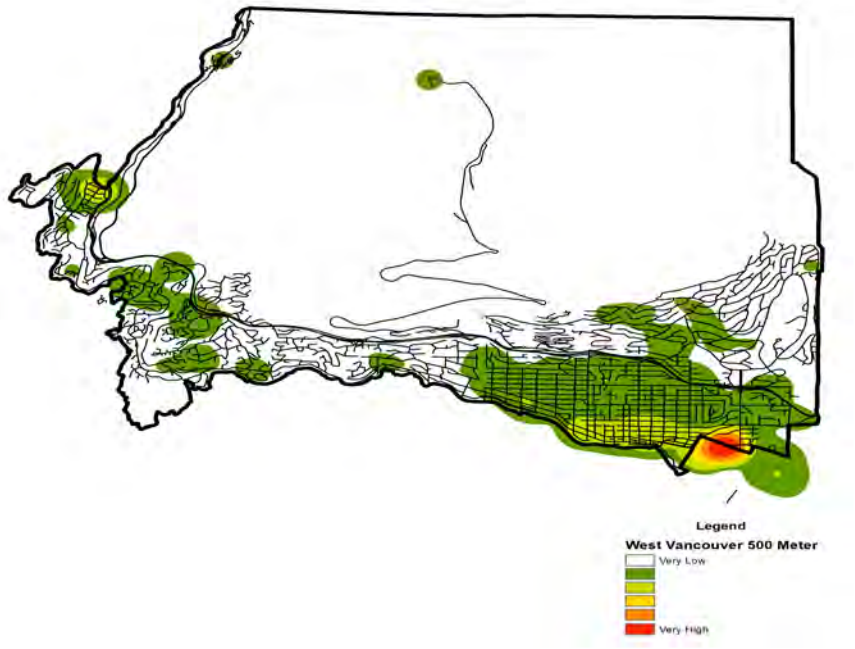
In 2015, West Vancouver had 1,404 property crimes or approximately 3.8 property crimes per day (see Table 49). In just considering the raw number of property offences, West Vancouver ranked 15th out of the 21 jurisdictions considered in this report. Unlike any of the other jurisdictions, the most common property crime in West Vancouver was shoplifting (22.4 per cent) followed closely by theft from vehicle (21.9 per cent). The next three most common property crimes were mischief to property (13.6 per cent), fraud (10.8 per cent), and other theft under $5000 (10.8 per cent). In terms of the more serious property crimes, in 2015, there were only 27 auto thefts, 74 break and enters of a residence, 38 break and enters of a business, and 62 break and enters 'other'. Combining all the different types of break and enters, the West Vancouver Police Department recorded one break and enter approximately every two days. Finally, there were very few arsons (n = 6) and a small number of thefts over $5,000 (n = 14) in 2015. In effect, excluding the more serious types of property crime, more than four-fifths (84.2 per cent) of all property crime was of a more minor nature in West Vancouver in 2015.

**TABLE 49: PROPERTY CRIME PROFILE FOR WEST VANCOVUER IN 2015**

| | Raw Number (n = 1,404) | % of Total |
|---|---|---|
| Shoplifting | 314 | 22.4% |
| Theft From Vehicle | 307 | 21.9% |
| Mischief to Property | 190 | 13.6% |
| Frauds | 151 | 10.8% |
| Other Theft Under $5,000 | 152 | 10.8% |
| Break & Enter – Residence | 74 | 5.3% |
| Break & Enter – Other | 62 | 4.4% |
| Bike Theft | 48 | 3.4% |
| Break & Enter – Business | 38 | 2.7% |
| Auto Theft | 27 | 1.9% |
| Possession of Stolen Property | 18 | 1.3% |
| Other Theft Over $5,000 | 14 | 1.0% |
| Arson | 6 | 0.4% |

As demonstrated in Figure 26, in 2015, West Vancouver's property crime was concentrated along the southern part of the city, along the coast of the Burrard Inlet. There was one hotspot for 2015 and it was along Marine Drive from Taylor Way to Pound Road in the south-eastern part of the city. As expected, this is the main shopping area in West Vancouver characterized by a large outside shopping mall on the north side of Marine Drive and the Park Royal Shopping Centre and several big box stores on the south side of the road.

**FIGURE 26: PROPERTY CRIME HOTSPOTS IN WEST VANCOUVER IN 2015**



Like Pitt Meadows and Whistler, none of the structural variables reached the required level to be considered statistically significance in West Vancouver (see Table 50). Still, many of the relationships were in the anticipated direction, but the effects were not large enough to distinguish the one main hotspot in West Vancouver from the rest of the city. For example, the hotspot in West Vancouver contained a greater proportion of unmarried persons and renters, had higher levels of residential mobility, lower median household income levels, and reduced participation in the labour force. However, the differences between the hotspot and the non-hotspot areas on these factors was quite small, and not statistically significant.

**TABLE 50: COMPARISON OF PROPERTY CRIME HOTSPOTS AND NON-HOTSPOTS – WEST VANCOUVER**

| | Hotspots | Non-Hotspots | t value |
|---|---|---|---|
| Population Density | 2,071 | 2,434 | -0.20 |
| Population Change 2006-2011 (%) | -1.0% | 0.7% | -0.11 |
| Young Males - Aged 15-24 (%) | 5.1% | 7.0% | -0.83 |
| Unmarried (%) | 43.1% | 38.9% | 0.64 |
| Mobility - Last 5 Years (%) | 33.9% | 36.2% | -0.25 |
| Immigration (%) | 41.4% | 39.6% | 0.18 |
| Aboriginal Population (%) | 0.0% | 0.4% | -0.29 |
| Median Household Income ($) | $70,936 | $103,875 | -1.12 |
| Unemployment Rate | 9.0 | 4.7 | 0.97 |
| Labour Force Participation (%) | 47.5% | 54.4% | -0.79 |
| Less Than High School Education (%) | 0.0% | 0.1% | -0.27 |
| Renters (%) | 25.5% | 14.3% | 0.73 |
| Housing Condition - Major Repairs (%) | 1.5% | 3.6% | -0.49 |

* p < .10; ** p < .05

## SUMMARY OF VARIABLE EFFECTS

Although the preceding analyses focused on the municipalities, Table 51 indicates that there were some important findings when the results of all of these analyses are pooled together. As mentioned previously, there were four variables that consistently demonstrated significant predictive effects; median household income, the proportion of renters, the proportion of unmarried individuals, and residential mobility. The percentage of renters was a significant predictor of crime across slightly more than two-thirds (68 per cent) of all municipalities, while residential mobility and the proportion of unmarried persons was present in over three-quarters (76 per cent) of the cities. Median household income was substantially related to property crime hotspots in 18 of the 21 municipalities (86 per cent). If the three municipalities that did not show any significant effects are excluded, median household income was a significant factor in every analysis.

At the other end of the spectrum, some variables were rarely significant in differentiating property crime hotspots from non-hotspots in a city. Particularly noticeable in this regard were the proportion of Aboriginal people, the unemployment rate, and population change. Variables with more sporadic effects included labour force participation, the proportion of residents with less than a high school education, recent immigration, and poor housing condition.

**TABLE 51: SUMMARY OF SIGNIFICANT T VALUES ACROSS MUNICIPALITIES**

| | Abbotsford | Burnaby | Chilliwack | Coquitlam | Delta | Hope | Langley | Maple Ridge | Mission | New Westminster | North Vancouver | Pitt Meadows | Port Coquitlam | Port Moody | Richmond | Squamish | Surrey | Vancouver | West Vancouver | Whistler | White Rock |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Population Density** | | * | ** | * | | | | * | | ** | ** | | ** | * | ** | * | | ** | | | ** |
| **Population Change** | | | | | | * | | | | | | | * | | | | | | | | |
| **Young Males** | ** | | ** | ** | ** | | ** | ** | | | ** | | ** | ** | | | ** | | | | ** |
| **Unmarried** | ** | | ** | ** | ** | ** | * | ** | ** | ** | ** | | ** | | ** | ** | ** | ** | | | ** |
| **Mobility** | ** | ** | ** | ** | ** | ** | ** | ** | | * | ** | | ** | ** | ** | ** | ** | ** | | | |
| **Immigration** | | ** | | * | ** | | | | | | ** | | ** | | ** | | | ** | | | ** |
| **Aboriginal Population** | | | ** | | | * | | | | | | | | | | | | | | | |
| **Median Household Income** | ** | ** | ** | ** | ** | * | ** | ** | ** | ** | ** | | ** | ** | ** | ** | ** | ** | | | ** |
| **Unemployment Rate** | * | | ** | | | | | | | | | | | | | | | | | | |
| **Labour Force Participation** | ** | * | ** | ** | ** | | | | | | | | | * | ** | | | | | | ** |
| **< High School Education** | | | | ** | * | | | ** | ** | | | | * | | * | * | | | | | |
| **Renters** | | * | ** | ** | ** | * | ** | ** | ** | | ** | | ** | | ** | ** | ** | ** | | | |
| **Housing Condition** | ** | * | | * | | | | ** | * | ** | | | ** | | | | | | | | |

* p < .10; ** p < .05

## Recommendations

Based on the nature, quantity, and locations of property crime throughout the Lower Mainland District, there are a number of recommendations for the police to address the recent increases in property crime rates.

### 1. FOCUS ON INFORMATION AND INTELLIGENCE-LED STRATEGIES TO COMBAT PROPERTY CRIME

To be an intelligence-led organization, policing agencies must collect, analyze, and disseminate vast amounts of information to make decisions about the best programs, strategies, and projects to reduce property crime. In order to do this well, crime analysts should have a good working relationship with both general duty members and the investigative services divisions in any policing agency. Ideally, crime analysts should be assigned to different sections, both general duty and property crime units, as this can help improve the amount of workable intelligence being produced by analysts that is shared with those units. It also serves to improve the working relationships between the sections and the analysts, as analysts develop a better understanding of each unit's needs and priorities, while officers in those units can learn about what analysts can produce, and what type of intelligence is needed by the analysts to produce quality products.

It is not enough to simply hire analysts; policing agencies must create a culture of using data and analysis to inform projects and strategies. There must be a commitment from the police agency to ensure that all analysts receive the necessary training, and, as this field is constantly evolving, consistent access to refresher courses or training in new techniques and new software solutions. In terms of the products produced by analysts, it is necessary that the products they provide are timely, relevant, and specific to the problems faced by the policing agency.

With the help of crime analysts, policing agencies can remain focused on specific crime problems, prolific and priority offenders, and prolific crime locations. This might include increasing vehicle, bike, and foot patrols in areas at high property crime volume times, increasing the number of volunteers at strategically selected times and locations to deter potential offenders, increasing the communication between the police and the community in and around property crime hotspots about the nature of property crime, police initiatives to reduce and prevent property crime, the things that residents or business owners can do to reduce and prevent property crime, and enhancing meaningful partnerships between the police and businesses and residents.

### 2. A RENEWED FOCUS ON PROLIFIC OFFENDERS, LOCATIONS, AND PROBLEMS

Research has shown that a large proportion of property crime is generally committed by a relatively small number of individuals, often referred to as prolific or priority offenders (Cohen, Plecas, McCormick, & Peters, 2014). Due to this, it is critical for policing organizations to identify and focus on prolific and priority offenders, as well as hotspot property crime locations, and specific social issues within the community that contribute to property crime rates. Specifically, in regards to property crime, issues such as theft from and theft of vehicles, shoplifting, mischief to

property, and other theft under $5,000 are all common problems in the cities that comprise the Lower Mainland District. It is vital for the RCMP and police departments to focus on those prolific offenders known to commit these types of crimes, and continually concentrate on the areas known to be hotspots for property crime. As mentioned above, regular and consistent analysis of a location or crime type can be used to direct the focus of police officers in an efficient and effective way to reduce and prevent property crime.

One of the greatest challenges for police is managing and being proactive with their prolific and chronic offenders, locations, and problems. Police agencies have acknowledged the need to focus on this highly active group of offenders, address the locations that are a consistent drain on police resources, and solve the main social problems that contribute to property crime in the community. The strategies for focusing on these offenders can vary, but typically, policing agencies tend to utilize one or more units, such as General Duty, Prolific Offender Units, Youth Unit or Crime Reduction Units, to target these persons, locations, and problems. Much like the issue of proactive policing, which will be discussed below, the response to prolific and priority offenders, locations, and problems by the police requires the commitment of everyone in the agency. Addressing prolific property offenders and locations cannot be the mandate of a single specialized unit, but, again, must be seen as a core policing function that involves the sharing of information and resources across the detachment or department.

It cannot be overstated how important it is, for overall public safety, as well as property crime in general, to be effective against prolific and priority offenders, as well as chronic property crime locations, and the social problems that contribute to property crime rates. As stated above, strategies for dealing with prolific offenders, locations, and problems must be driven by intelligence and information-led, collected by officers and the community, and processed by crime analysts into meaningful and strategic strategies and programs.

### 3. A CONTINUED COMMITMENT TO CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

Crime Prevention through Environmental Design (CPTED) is a strategy often linked to routine activity theories of crime, and is a situational crime prevention method designed to reduce and prevent a wide range of offences, including property crime. As discussed above, routine activity theory suggests that crime occurs when a motivated offender, a suitable target, and a lack of a capable guardian meet in time and space. Making changes to the physical environment or a particular location in an attempt to make it less suitable or more difficult for an offender to commit a crime is the goal of CPTED. For example, if a business has been a target of multiple break-ins, the owner might consider installing an alarm system, installing bars on the windows, ensuring the business is visible from the street, or increasing the lighting inside and outside the business in an attempt to prevent being a target of crime. Other CPTED examples might include landscaping to improve visibility and the safety of people walking in the area, hiring private security guards to supervise a location, or placing lights to illuminate dark areas where a criminal might hide or being able to engage in an offence. Ideally, these types of solutions would fit the crime problems in that specific area, and should be done with the guidance of a CPTED professional.

## 4. BUILD MEANINGFUL RELATIONSHIPS WITH COMMUNITY STAKEHOLDERS

Many property crime reduction strategies rely on the establishment and maintenance of effective partnerships between police and community stakeholders (Cohen, Plecas, McCormick, & Peters, 2014). Police cannot work in isolation when attempting to solve crime issues within a community, particularly with a problem such as property crime, which is often linked to social problems like addiction, homelessness, and poverty. Instead, the police need to build relationships with agencies that are designed to be more effective and efficient at dealing with those types of large scale social problems. Establishing these types of collaborative relationships with other agencies in the community reflects that crime is not simply a policing issue, but the responsibility of the entire community, and a problem that cannot be solved by the police alone.

There are numerous examples of agencies that have been able to assist the police in reducing or preventing property crime, such as homeless shelters, addiction treatment facilities, health care agencies, private security agencies, and schools. There are also several examples of community programs that could be used in an attempt to drive down property crime in a location identified as a hotspot, such as crime free multi-housing, or block watch or neighbourhood watch programs. These types of programs tend to work best when done with the assistance and guidance of the police. As such, in addition to police agencies having the necessary resources to effectively address the issues that contribute to property crime, establishing and maintaining meaningful partnerships with those criminal justice, non-governmental, and community agencies that are in a better position to address the underlying issues that contribute to property crime in a community would contribute to an overall reduction in property crime. Given this, it is recommended that the police continue to develop and expand partnerships with those agencies, groups, and stakeholders to combat property crime.

Both the style and substance of community outreach on the part of the police must be tailored to specific neighborhoods. The make-up and nature of property crime hotspots in a city varies substantially from other areas of the same city. These areas are much more likely to feature residents who are poor, transient, and unattached. These characteristics pose special challenges for building community-police relations.

## 5. EMPHASIZE PROACTIVE POLICING STRATEGIES

In order to avoid the more common occurrence that much of the proactive policing that is currently being undertaken by the police is not intelligence or information-led, and that it occurs in very short segments when general members have time between responding to calls for service, police agencies should consider the merits of dedicated, consistent proactive policing approaches. For example, the detachment or police department should consider assigning a number of members or officers and vehicles, determined by the size of the police force and the property crime rates in the community, to dedicated proactive patrol. These officers or members would be directed by the detachment's crime and intelligence analysts to patrol specific areas and walk through certain locations, such as a shopping mall, at specific times determined by the analysts to be most effective at deterring property crime, creating a visible presence in the community, and engaging in a number of proactive policing strategies as required by crime trend data or community needs. This

would not replace all members engaging in proactive patrolling when not responding to calls for service, but would ensure that issues or problem locations that would benefit from proactive patrolling receive the necessary attention.

A second approach, which would avoid creating a special 'proactive patrolling' unit within General Duty, would involve setting aside a specific amount of time, for example 30% of shift time, in each general duty member's or officer's shift dedicated exclusively to proactive patrolling. While this might be more difficult to schedule as general duty members or officers might be at a call for service when their proactive patrolling time is set to begin, or there may be those who are uninterested or not very good at proactive patrolling, the benefit of this approach is that it spreads the responsibility for proactive patrolling across all general duty members or officers and reinforces the message that this is a core policing function.

The third approach might be to assign one shift from each general duty member's or officer's typically 4-on-4-off shifting schedule to proactive policing, during which the member or officer would spend that entire shift engaged in targeted proactive policing. The benefit of this approach is that it avoids a specialized unit and avoids the challenge of finding some time in each shift to engage primarily in proactive policing strategies. The shortcomings of this approach are that it will include times during a shift where there is not a need for proactive policing for property crime and will include members or officers who are either uninterested or not very good at proactive policing. Regardless of the method selected, supervisors should analyze the driving patterns of general duty members or officers to ensure that they are in the right locations at the right times of the day or night, and for the right amount of time, to effectively and efficiently contribute to proactive policing to reduce and prevent property crime. It should also be noted that all general duty proactive policing initiatives should be tied into the efforts of other sections and units that also engage in routine proactive policing to better integrate the work, intelligence, and information collected, but to also recognize that proactive policing is not the sole responsibility of some, but a core policing function across the entire detachment or department. While not a substitute, the police agency should also consider including their Auxiliary or volunteer members in this strategy. For example, these people could drive around to increase police visibility in hotspot locations at strategic times to reduce and prevent property crime, as well as provide more opportunities for the police to positively engage with the public.

### 6. INCLUDE TRAFFIC SERVICES IN PROPERTY CRIME PREVENTION

As highlighted by the other recommendations made in this report, it is becoming increasingly necessary for the police, including traffic services, to become more proactive, to focus on priority and prolific offenders, to establish and maintain meaningful partnerships with other stakeholders, and to become much more information-led and evidence-based. Given this, Data Driven Approaches to Crime and Traffic Safety (DDACTS) is an operational model that combines the analysis of crime and traffic data to inform effective and efficient methods for deploying law enforcement and other resources to specific locations to target certain driving behaviours, as well as criminal behaviors and offenders, including property crime. DDACTS is based on being information and intelligence led, is proactive and preventative, and is problem-oriented. At its core, DDACTS involve

determining when and where are the high densities for both traffic safety issues and crime, and putting traffic enforcement in that location to reduce or prevent these behaviours.

The approach is successful because, as demonstrated throughout this report, property crime is not evenly distributed throughout a jurisdiction, but is clustered in specific locations. This is also true of traffic safety issues. The evidence that supports the underlying theoretical framework for DDACTS is that crime and crashes often occur in close proximity to each other, crimes often involves the use of a motor vehicle, and offenders frequently use a vehicle to travel to and from the scene of a crime. Moreover, traffic stops are an extremely valuable law enforcement tool because, in addition to collecting vehicle information and enforcing traffic violations, vehicle stops can yield important intelligence and can uncover crimes and criminal associations. When implemented well, DDACTS can reduce crime and increase public safety, increase public involvement in reducing crime, increase the integration of stakeholders, improve public awareness and behaviour, and efficiently deploy limited police resources.

### 7. INCREASING THE PUBLIC'S AWARENESS ABOUT PROPERTY CRIME

Obviously, one effective method of reducing theft from vehicles, other theft under $5,000, and mischief to property offences is to decrease the opportunity to commit crime in the first place. Public awareness around theft from vehicles, warning owners not to leave anything of value in their vehicle, and keeping the glove compartment or other compartments in the car empty and open are effective tactics to reduce this type of offence. Similarly, improved security in commercial areas, such as CCTV or security patrols in parking lots, increased lighting during the evenings, and better visibility from the street have also demonstrated an ability to reduce the opportunity for an offender to break into a vehicle, engage in mischief or vandalism late at night, or attempt a break or enter or a theft of vehicle, particularly in and around a commercial property.

Britton, Kershaw, Osborne, and Smith (2012) pointed out that strategies aimed at reducing repeat victimization have been very effective in the United Kingdom. These strategies have focused on police or other law enforcement agencies meeting with victims of property crime to show them how to reduce potential opportunities for property crime offenders around their home or business. These techniques have reduced the number of repeat property crime victims in the United Kingdom, and could be a promising area to focus on in the Lower Mainland District. This would provide the opportunity for a policing agency to share information about crime prevention through environmental design to a property owner, which has been shown to be effective in reducing potential opportunities for offenders to commit crime (Cozens & Love, 2015). Additionally, the police could share property crime prevention strategies for the home to target harden residences and building against property crime.

## Conclusion

Based on an analysis of the data in the LMD from 2001 to 2014, it is clear that there has been a substantial drop in the volume of property crime across the LMD and in each of the 22 municipalities that make up the LMD. However, it is also true that there has been an increase in the

property crime rates in many of the LMD's jurisdictions over the past two to three years. Still, even with these modest increases in the recent past, the LMD as a whole and each city within in have maintained property crime rates well below their peak years.

It is also important to keep in mind that the vast majority of property crime in 2015 (78.5 per cent) was made up of the less serious forms of property crime. With only some small variations by city, the most common forms of property crime were theft from vehicles, other theft under $5,000, mischief to property, and shoplifting. Given this, it was not unexpected that, for the most part, property crime hotspots in each of the cities tended to focus in and around the main commercial parts of the city and the lower income residential zones near them. This finding was further supported by the analyses of the socio-economic, socio-demographic, and compositional factors in each city that distinguished the property crime hotspot areas from the rest of the city. Here, there were four variables that consistently demonstrated significant predictive effects. These were median household income, the proportion of renters, the proportion of unmarried individuals, and residential mobility. At the other end of the spectrum, some variables were rarely significant in differentiating property crime hotspots from non-hotspots in a city; namely, the proportion of Aboriginal people, the unemployment rate, and population change.

In conclusion, the property crime rate in the LMD has been increasing in the past few years, but is a long way off from its peak in the early 2000s. This report has detailed the nature and type of property crime experienced within each municipality of the LMD, the distribution or spread of property crime within each city of the LMD, and provided some insight into the social, demographic, economic, and composition factors that distinguish property crime hotspots from non-hotspots in each city. This report also provided a number of recommendations for police agencies to improve their ability to prevent and reduce the volume of property crime in their jurisdictions. It is clear that police agencies throughout the LMD are aware of the recent upwards trend in property crime in many parts of the LMD, and that they are engaging in a number of traditional and proactive strategies to address this issue. The information in this report should assist police leaders in further developing specific anti-property crime responses by highlighting their particular property crime profile, their property crime hotspots, and those specific social, economic, demographic, and compositions factors that contribute most to property crime in their cities.

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