AN ANALYSIS OF THE SOCIO-ECONOMIC AND SOCIO-DEMOGRAPHIC CONTRIBUTORS TO INTIMATE PARTNER VIOLENCE IN RCMP JURISDICTIONS IN BRITISH COLUMBIA

Dr. Irwin M. Cohen, Dr. Amanda V.McCormick, Dr. Garth Davies, and Christine Neudecker

UNIVERSITY OF THE FRASER VALLEY

CENTRE FOR PUBLIC SAFETY & CRIMINAL JUSTICE RESEARCH

Table of Contents

Introduction

This report examines the rate and response to intimate partner violence in 33 RCMP jurisdictions in British Columbia (BC) between January and December 2016, with an analysis of trends between 2011 - 2015 . Several lines of inquiry were considered to better understand intimate partner violence. In particular, the contextual variances 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, was the focus on this study. In effect, to discuss intimate partner violence 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 several municipalities in each RCMP District compare to each other in terms of their rate, distribution, and response to intimate partner violence, and b) identifying the "neighbourhood effects" that also contribute to fluctuations in intimate partner violence within single municipalities. The overall purpose of this report is to examine intimate partner violence in RCMP jurisdictions and to provide a theoretical and empirical-based assessment of the socio-economic and socio-demographic variables that contribute to intimate partner violence.

Literature Review

Intimate partner violence (IPV) involves the threat or engagement in physical, sexual, psychological, verbal, or financial harm by a person towards an intimate partner (Provincial Office of Domestic Violence, 2014). The Canadian General Social Survey (GSS) asks about spousal violence among "respondents who are legally married, living in a common-law relationship, or who are separated or divorced from a legal or common-law partner and have had [recent] contact with their ex-partner" (Burczycka, 2016: 5). Most recently, the 2014 cycle of the GSS found that 4% of adult Canadians self-reported victimization by an intimate partner in the past five years (Burczycka, 2016). Notably, this rate continued the declining trend in self-report victimization of IPV since 1999 when approximately 8% of women and 7% of men in a current or recent intimate partner relationship reported having been physically or sexually victimized by their partner (Gannon & Mihorean 2005; Laroche, 2005; Patterson, 2003). This proportion dropped to 6% of Canadian adults in the 2004 and 2009 cycles of the GSS (Brennan, 2011a; Mihorean, 2005). Still, since 2010, IPV was estimated to cost Canadian society over $7 billion a year in terms of societal, health, and criminal justice system costs (Zhang, Hoddenbagh, McDonald, & Scrim, 2012).

In the most recent GSS, there was a slightly higher proportion of male victims (approximately 418,000) than female victims (approximately 342,000). In fact, research around the world consistently identifies that males and females self-report nearly equal rates of intimate partner violence victimization (Desmarais, Reeves, Nicholls, Telford, and Fiebert, 2012a, 2012b; see also Archer, 2000; Fiebert, 1997). However, the severity of the violence and reporting rates differ by gender (e.g. Burczycka, 2016; Laroche, 2005). Further, although self-report victimization surveys

are indicative of gender symmetry in intimate partner violence victimization, studies examining police-reported data find that most cases involve a female victim and a male perpetrator (McCormick, Cohen, & Plecas, 2011; Zhang et al., 2012). In the most recent police-based statistics reviewed by Statistics Canada, 79% of victims reporting intimate partner violence to the police were female (Burczycka, 2017). More specifically, over 72,000 Canadian women reported being victimized by an intimate partner in 2015, compared to over 19,000 Canadian men (Burczycka, 2017). The higher prevalence of female victims and male perpetrators in police-based studies may be because women are much more likely to be the victims of severe violence resulting in serious injury or death (BC Coroners Service, 2010, 2016; Burczycka, 2017; Campbell, Glass, Sharps, Laughon, & Bloom, 2007; Fox & Zawitz, 2001; Kaufman Kantor & Straus, 1987; Kowalski, 2006; Ontario Domestic Violence Death Review Committee, 2008; Stets & Straus, 1990; Straus, 1990; Taylor-Butts & Porter, 2011; Tjaden & Thoennes, 1998).

In British Columbia, the rate of IPV has previously been higher than the national average (Provincial Office of Domestic Violence, 2014). Sinha (2012) described that, in 2010, over 16,000 victims reported intimate partner violence victimization to the police, resulting in a rate of 427 victims per 100,000 population, compared to the national average of 363. However, in a Statistics Canada publication by Burczycka (2017), the rate of police-reported IPV in British Columbia dropped below the national average to 472 per 100,000 compared to the national rate of 482 per 100,000.

Both self-report victimization surveys and police-reported incidents suggest that the most common forms of IPV involve minor forms of violence, including being pushed, grabbed, shoved, or slapped (Burczycka, 2016, 2017; McCormick et al., 2011). In the national police-reported statistics analyzed by Burczycka (2017), police-reported violence most often involved a physical assault for both male (86 per cent of 19,440) and female (75 per cent of 72,403) victims. Two-thirds of the physical assault cases involved Level 1 common assault for both female victims (62 per cent) and male victims (66 per cent). Male victims were actually more likely to report Level 2 and 3 major assaults (20 per cent) than were female victims (12 per cent). In contrast, female victims were more likely to report other forms of victimization, including sexual assault, uttering threats, and criminal harassment (Burczycka, 2017). It should be noted that as these cases reflect police-reported incidents, while these files may have involved more than one type of criminal charge, only the most serious charge is recorded.

Unfortunately, research has routinely found that reporting rates of IPV to the police are low. Both the 1999 and 2004 cycles of the GSS found that only one-quarter of intimate partner violence victims reported their experience to the police (27 per cent and 28 per cent, respectively); this proportion dropped even further in the 2009 cycle to just over one-fifth (22 per cent), with the reduction in reporting attributable mostly to the reluctance of female victims to pursue charges (Brennan, 2011a; Mihorean, 2006; Patterson, 2003; Ogrodnik, 2006). A further reduction was observed in the 2014 cycle, where slightly less than one-fifth (19 per cent) of victims reported their victimization to the police (Burczycka, 2016). These trends help to explain why intimate partner violence victimization composes one-third (32 per cent) of Canadian victimization data on all violent crimes, but only 11% of police-reported violent crime in Canada (Zhang et al., 2012).

Previous research with female victims of IPV concluded that some of the main reasons for not reporting victimization to the police included fear of the offender/fear of retaliation, a desire to maintain personal privacy or to protect the relationship with the abusive partner, previous negative experiences with the police or justice system, a belief that the police would not be able or willing to help them, a perception that the incident was not serious or important enough, and fears about the potential consequences of involving police, including seizure of children, loss of income, splitting up of the family, being forced to end the relationship with the abuser, being arrested themselves, losing immigration status, a lack of understanding about legal rights, and language barriers (Ammar, Couture-Carron, Alvi, & San Antionio, 2014; Baobid, 2002; Bradford & Bruce, 2004; Brennan, 2011a; Brewster, 2001; Chambers, 1998; Fleury, Sullivan, Bybee, & Davidson, 1998; Fugate, Landis, Riordan, Naureckas, & Engel, 2005; Gillis, Diamond, Jebely, Orekhovsky, Ostovich, MacIsaac, Sagrati, & Mandell, 2006; Jaffe & Burris, 1984; Jiwani & Buhagiar, 1997; Johnson, 2007; Justice Institute of British Columbia, 2007; Lee & Hadeed, 2009; Lyon, 2002; Lysova, 2017; Martin & Mosher, 1995; McGillivray & Comaskey, 1999; MacLeod & Shin, 1993; Miedema & Wachholz, 1998; Native Women's Association of Canada, 1994; Nixon, 2002; Patterson, 2003; Roberts, 1996; Smith, 2004; Tjaden & Thoennes, 2000a; Wilson, 1998; Wolf, Ly, Hobart, & Kernic, 2003).

It is troubling that the reporting rates of IPV victimization are low, as Canadian research suggests that police response to IPV can reduce the likelihood of re-victimization (Ogrodnik, 2006) and reduce the likelihood of future lethal violence. Overall, intimate partner homicides are uncommon in Canada, although the rates tend to be slightly higher in the western provinces, with British Columbia slightly above the national average of 79 per year (Dauvergne, 2005; Kowalski, 2006; Provincial Office of Domestic Violence, 2014; Taylor-Butts & Porter, 2011). According to Beattie (2005), nearly one-fifth (18 per cent) of all solved homicides in Canada between 1994 and 2003 involved intimate partners. Generally, the majority of those involved in an intimate partner violence homicide were married or common law partners at the time, while a significant minority typically involved recently separated partners (Beattie, 2005; Kowalski, 2006; Taylor-Butts & Porter, 2011).

Although males have been killed by their intimate partners, the research continues to identify that intimate partner homicides are highly gendered, with females much more likely to be the victim and males much more likely to be the offender (BC Coroners Service, 2010, 2016; Campbell, Glass, Sharps, Laughon, & Bloom, 2007; Kowalski, 2006; Taylor-Butts & Porter, 2011). In total, 147 spousal homicides occurred in British Columbia between 2003 and 2011, with the vast majority involving female victims (72 per cent) and male perpetrators (84 per cent) (British Columbia Coroner's Service, 2012). In contrast, male deaths in an intimate partner homicide are more likely to be the result of a suicide (Kowalski, 2006; Ontario Domestic Violence Death Review Committee, 2008). Between 1974 and 2004, the number of intimate partner violence homicides decreased for both male and female victims. While the rate of intimate partner violence victimization resulting in death decreased by more than half (57 per cent) for female victims, it dropped by two-thirds for males (68 per cent) (Kowalski, 2006). Of note, the rate of intimate partner homicide among male victims dropped substantially again since 2005, by 24% (Burczycka, 2017). In 2015, there were 70 known female victims of intimate partner homicide, and 14 known male victims (Burczycka, 2017).

Male victims were most likely to be killed by stabbing (66 per cent), whereas female victims were just as likely to be killed by a stabbing as they were a shooting (31 per cent each). Somewhat surprisingly, given that males typically have a more dominating physical stature, there was only a slight difference in the number of female (18 per cent) compared to male (14 per cent) victims killed as a result of the infliction of physical force, such as through a beating, strangulation, suffocation, or drowning (Kowalski, 2006). Additionally, Kowalski (2006) reported that the situational context that contributed to the lethal infliction of violence differed for male and female perpetrators, in that male victims were more likely to be killed as a result of an argument (64 per cent), whereas female victims were more likely to be killed as a result of jealousy (25 per cent) or frustration (24 per cent). Moreover, Kowalski (2006) identified different precipitating factors that culminated in the homicide of a male versus female partner. Overall, the killing of a female partner was more likely to result from one or more precipitating factors (26 per cent) than was the killing of a male partner (19 per cent), and, for female victims, this was more likely to involve a wide variety of precipitating events, including a sexual assault, criminal harassment, kidnapping, break and enter, or another property crime. In line with arguments about the most common contextual factor surrounding the killing of a male partner, a physical assault was the precipitating event most likely to be associated with the death of a male victim (78 per cent), compared to a minority of the cases involving the death of a female victim (46 per cent). These differences suggest that whereas the homicide of a female spouse is more likely to be premeditated, the homicide of a male spouse is more likely to be an impulsive reaction. This is further supported by charging patterns, in that male perpetrators of an intimate partner homicide are more likely than female perpetrators to be charged with first-degree murder (49 per cent and 25 per cent, respectively), whereas female perpetrators are more likely to be charged with second-degree murder than are male perpetrators (64 per cent female and 45 per cent male) (Kowalski, 2006).

VULNERABLE WOMEN

While intimate partner violence is found within a wide range of societal conditions, there are certain contextual factors that appear to increase the risk for victimization. Women who are recent immigrants from non-English speaking countries, or who are recent refugees also face increased risks for intimate partner violence victimization (Wendt & Zannettino, 2015), but may be less likely to report it (Brewster, 2001; Buzawa, Hotaling, Klein, & Byrne, 2000; Jiwani & Buhagiar, 1997). This is, in part, because immigrants can be socially isolated from support systems due to language barriers, financially dependent on the abuser, and fear of losing immigration or refugee status resulting in deportation and separation from dependent children (Ammar et al., 2014; Baobid, 2002; Campbell, 2010; Chambers, 1998; Dosanjh, Deo, & Sidhu, 1994; Epstein, 1999; Gillis et al., 2006; MacLeod & Shin, 1990; Martin & Mosher, 1995; McDonald & Cross, 2001; Miedema & Wachholz, 1998; Wolf et al., 2003). Women in abusive relationships already have smaller social support networks than women in non-abusive relationships (Katerndahl, Burge, Ferrer, Becho, & Wood, 2013). This is likely to be especially true for women who have recently arrived in Canada. The challenges faced by a newly arrived family, including unemployment, language barriers, racism and discrimination, and loss of community, can result in an increased risk for intimate partner violence. Moreover, the traumatic experiences both prior to and during transit from one's home

country can also increase the risk for violence against an intimate partner as a coping mechanism, an attempt to maintain control over the family, or as response to loss of personal identity and patriarchal community norms (Wendt & Zannettino, 2015).

ABORIGINAL PEOPLES

In Canada, Aboriginal peoples – which is inclusive of First Nations, Métis, and Inuit populations – are a particularly vulnerable group for intimate partner violence. According to Baskin (2006), while the oral teachings of Aboriginal peoples suggest that intimate partner violence was historically rare prior to colonization, Canadian research consistently reports that the victimization rates of Aboriginal women are several times higher than that of non-Aboriginal women (Andersson & Nahwegahbow, 2010; Brownridge, 2003, 2008). When considering violence in just the preceding year, Brownridge (2003) found that Aboriginal women across Canada were more than five times as likely as non-Aboriginal women to report violence by their current partner. In fact, one-quarter of Aboriginal women participating in the 1999 cycle of the (GSS) self-reported at least one instance of intimate partner violence victimization in the past five years, compared to less than one-in-ten (8 per cent) non-Aboriginal women (Trainor & Mihorean, 2001). Although the disparity dropped slightly a decade later, the 2009 GSS cycle still found that Aboriginal women were more than twice as likely (15 per cent) as non-Aboriginal women (6 per cent) to report victimization by an intimate partner in the previous five years. Further, over half (59 per cent) of these Aboriginal women reported being injured as a result of this violence, compared to 41% of non-Aboriginal women (Brennan, 2011b). In other words, Aboriginal women tended to experience severe forms of spousal victimization, with 48% of female Aboriginal victims reporting extremely serious forms of victimization, such as being beaten, choked, or sexually assaulted. Not surprisingly, Aboriginal women are more likely (52 per cent) than non-Aboriginal women (31 per cent) to fear that their spouse will kill them (Brennan, 2011b), a fear which is unfortunately supported by Canadian homicide statistics (Johnson, 2006; Sinha, 2013; Trainor & Mihorean, 2001).

As quoted in Part 3 of the 2006 *Report on the Royal Commission of Aboriginal Peoples*, "there are many reasons for family violence [in Aboriginal families]. High unemployment, poor housing, child abuse, drug abuse – these have led to a loss of culture – which has in turn led to violence against ourselves and our loved ones" (p. 54). The traumatic experiences of colonization resulted in mass family disruption through the introduction of residential schools and a loss of a culture that emphasized the collective over the individual (Baskin, 2006; Goulet, Lorenzetti, Walsh, Wells, & Claussen, 2016). These changes led to communities that were increasingly both geographically and socially isolated, contributing to a loss of social control over the actions of fellow community members. Baskin (2006) also explained that the introduction of the Indian Act of 1876 and the reserve system shifted Aboriginal peoples from a society that respected and empowered women to a patriarchal society that "led to the disempowerment and devaluation of Aboriginal women and their roles within families and communities" (p. 23).

The abusive and neglectful conditions of the residential school system resulted in several generations of traumatized Aboriginal peoples, many of whom turned to alcohol use as a method of

coping (Bopp, Bopp, & Lane, 2003; Truth and Reconciliation Commission [TRC], 2015). The disruption of Aboriginal families led to a loss of parenting knowledge (Andersson & Nahwegahbow, 2010; Baskin, 2006). Having not been raised by their own parents, many residential school survivors struggled to raise their own children, which has resulted in several generations of increasing family violence, and a disproportionate number of Aboriginal children being taken into the government care system (Bopp et al., 2003; TRC, 2015). Thus, when examining the source of family violence in Aboriginal families and communities, Bopp et al. (2003) observed that, "the entire syndrome has its roots in Aboriginal historical experience, which must be adequately understood in order to be able to restore wholeness, trust and safety…" (p. ix).

Yet, as Brownridge (2003) argued, focusing only on the contributions of colonization to explain the high rates of intimate partner violence amongst Aboriginal peoples means that it is difficult to understand why many Aboriginal women are not the victims of intimate partner violence and that other factors, including the size of the youth population, rates of educational achievement, rates of unemployment, marital status, urban/rural residence, acceptance of patriarchal values, the rate of alcoholism, and family size must also be considered. Similarly, in their scoping review of the literature, Goulet and colleagues (2016) summarized that being a female, having a lower socio-economic status, being young, and substance misuse were factors that increased the risk of intimate partner violence for both Aboriginal and non-Aboriginal populations. However, they also identified Aboriginal-specific risk factors of residential school experience, systemic discrimination and racism, and loss of cultural identity.

In an empirical test of his hypothesis, Brownridge (2003) re-analyzed the nationally representative[1] 1999 GSS data and identified that the following risk factors increased the likelihood of experiencing intimate partner violence in the past five years for both Aboriginal and non-Aboriginal women in Canada: a young age; having an unemployed partner; currently living in a common law relationship; having previously been involved in a marital or common law relationship; experiencing patriarchal domination by the male partner; having a partner who consumes a large amount of alcohol; and having a larger family size. Interestingly, two of the key predictors differentiating risk for intimate partner violence among Aboriginal women from non-Aboriginal women were living in a rural community and having a higher level of education. In contrast, living in a rural community lowered the risk of violence among non-Aboriginal women, and intimate partner violence was associated with a lower level of education in this population (Brownridge, 2003). Of note, in a subsequent analysis of the 2004 GSS data cycle, the relationship between increasing education and a lowered risk for intimate partner violence amongst Aboriginal women was reversed, with higher education being associated with a slightly lower risk for intimate partner violence. Similarly, in the later analysis, there was no difference between living in an urban

[1] Although the GSS is said to be nationally representative, the data does not include residents of the Yukon, the Northwest Territories, and Nunavut, and therefore may underestimate the amount of intimate partner violence in Aboriginal communities (Brownridge, 2003, 2008).

or rural area and being at risk for intimate partner violence.[2] Brownridge (2008) did find that heavy alcohol consumption by the male partner increased the risk for victimization of both Aboriginal and non-Aboriginal women, and, in the 2004 cycle, the effect of this factor was statistically stronger for Aboriginal women than for non-Aboriginal women. In addition, in the 2004 cycle, having an unemployed male partner was identified as a significant risk factor for Aboriginal women (Brownridge, 2008).

Goulet and colleagues (2016) suggested that, while several demographic risk factors for domestic violence (i.e. gender, age, and socio-economic status) are not unique to Aboriginal peoples, they likely have a stronger effect on Aboriginal peoples than non-Aboriginal people, particularly for those residing in urban communities. Consistent with this, Brownridge's (2003, 2008) analyses of both the 1999 and 2004 GSS data found that the effect of each of these risk factors generally exerted a much stronger influence over the likelihood of intimate partner violence among Aboriginal women than non-Aboriginal women. Still, even after controlling for the effects of these variables, the 1999 data indicated that Aboriginal women were still more than 112% more likely than non-Aboriginal women to report intimate partner violence in the past five years, meaning the colonization theory is of relevance in explaining the greater risk for Aboriginal women (Brownridge, 2003).

Given this, Baskin's (2006) argument that it is critical that "[p]rograms which are based upon the culture and traditions of Aboriginal peoples and that involve Aboriginal methods of healing" be developed, as they are likely to find greater success than non-Aboriginal programs and services (p. 28) is particularly relevant. She emphasized the importance of taking a holistic approach to recover Aboriginal identities and increase feelings of self-worth and self-esteem through a focus on historical cultural values and the involvement of both the family and larger community in the process (see also the TRC, 2015). Similarly, in their scoping literature review on Aboriginal-focused approaches to prevention of intimate partner violence, Goulet and colleagues (2016) focused on approaches that integrated historical and cultural knowledge, and utilized community empowerment. This echoed the findings of a needs assessment study conducted in 1992 with an Aboriginal community in Newfoundland, Canada (Durst, MacDonald, & Parsons, 1999), where members of a Micmac Aboriginal community identified a need for a more holistic range of support services, such as a family life or women's centre providing resources relating to counselling, education, training, and social support, as well as the development of more services available for crisis intervention, such as volunteer safe houses.

[2] Brownridge (2008) observed that the definition of urban versus rural changed between the 1999 and 2004 GSS surveys that affected the way some reserves were measured. Brownridge further suggested that if the different outcomes were the result of a change in coding, it may suggest that smaller reserves have a higher prevalence of violent victimization than larger reserves (2008: 364).

RURAL VERSUS URBAN CONTEXTS

As discussed above, Brownridge's analysis of GSS data identified a potential role for rural versus urban geography in risk for intimate partner violence. Similar findings have been documented in non-Aboriginal samples as well (e.g. Bosch & Schumm, 2004; Gallup-Black, 200; Grama, 2000; Lanier & Maume, 2009; Logan, Walkder, Cole, Ratliff, & Leukefeld, 2003; Wendt & Zannettino, 2015). Beyer, Layde, Hamberger, and Laud's (2013) interactional model of intimate partner violence recognized that the explanations for IPV likely varied by community, and suggested that urban versus rural settings would have different compositional factors underlying rates of IPV. For instance, in urban settings, neighbourhood factors, such as social disorganization, would play an important role, whereas in rural settings, IPV rates would likely be affected more by being geographically and socially isolated from others, and facing long distances to access supportive services (Beyer et al., 2013).

Several studies have identified that geographical and social isolation are factors related to experiencing intimate partner violence in rural areas (Bosch & Schumm, 2004; Grama, 2000; Lanier & Maume, 2009; Logan, Walkder, Cole, Ratliff, & Leukefeld, 2003; Wendt & Zannettino, 2015). In a small qualitative study of 23 women who had received a protective order against an intimate partner, Logan et al. (2003) found that the rural victims were less likely to report social support than urban victims. In a larger study using nationally representative data from the National Survey of Households and Families and the United States 1990 Census, Lanier and Maume (2009) similarly identified that social isolation was a factor related to intimate partner violence in rural counties, but not in urban ones. Specifically, they identified that for women living in rural counties, those with social support networks who received support in the areas of child care, transportation, housework, and advice from family and friends were less likely to be victimized by their intimate partner than women without this social support network.

Outside of the rural/urban divide, an increasing number of studies have focused on the neighbourhood context associated with intimate partner violence. These studies have primarily utilized social disorganization as a theoretical perspective, focusing in particular on the interplay between economic deprivation, social isolation, lack of collective efficacy, and lack of social control. For instance, when exploring the contribution of social isolation to explaining domestic violence and drug abuse, James, Johnson, and Raghavan (2004) found that, in addition to focusing on the number of people they could rely upon for support, it was also important to consider social isolation in the context of neighbourhood disorganization. The added factors of high rates of unemployment, common occurrences of neighbourhood violence, chronic exposure to drug availability, and limited opportunities for residential mobility would make it difficult for these women to expand their social networks and thus contributed to their degree of social isolation (James et al., 2004).

THEORIES OF INTIMATE PARTNER VIOLENCE

In addition to social disorganization and social isolation, there are a range of other well-known risk factors that increase both the likelihood and severity of intimate partner violence, including alcohol

use, mental health issues, power/control issues in a relationship, and exposure to domestic violence as a child (Cunradi, Caetano, Clark, & Schafer, 2000; Jaffe & Burris, 1984; Kowalski, 2006; Sinha, 2013; Tjaden & Thoennes, 2000a). Further, many male perpetrators of intimate partner violence homicide have a lengthy criminal record (McCormick et al., 2011), suggesting that violence against an intimate partner is just one form of their involvement in violence and general criminal behaviour.

Given the wide range of identified risk factors, many different theoretical explanations have been put forth regarding IPV. For instance, individual-level theories seek to identify individual pathologies, such as personality disorders and dysfunctional attachment styles, to explain why (generally) men perpetrate violence against their female partners (Barnish, 2004). In contrast, rather than focusing on individual pathology, sociological theories of IPV seek to locate explanations for partner violence in the social structure (Lawson, 2012). As reviewed by Lawson (2012), these theories include an emphasis on the subculture of violence, resource theory, and ecological theory. The subculture of violence theory involves an application of a theory developed by Wolfgang and Ferracuti (1967) to explain general violence. Where it applies to intimate partner violence is through the argument that subcultures of violence are concentrated in urban areas characterized by poverty, whereby residents living in the neighbourhood develop a shared set of values that are favourable towards the use of violence within the family domain (Lawson, 2012). When more members of a neighbourhood share values such as these, there is a general lack of social control over the use of violence in relationships.

Resource theory suggests that IPV is concentrated in certain areas of the city because in these neighbourhoods there are few alternatives to violence to achieve one's goals (Lawson, 2012). In this way, resource theory is similar to strain theory, which suggests that while everyone is socialized to want to achieve similar goals, not everyone has access to the same means or resources to reach those goals. Thus, in areas concentrated by a lack of income and low education rates, people have fewer resources with which to reach their goals, and may turn to violence as a way to seek out status and prestige. This is particularly true in areas where there are subcultures of violence, as violence becomes an accepted method to achieve one's goals.

Dutton (2006) and Heise (1998) have both applied ecological theory to intimate partner violence. This theory integrates four explanatory levels that play a role in increasing the likelihood intimate partner violence will occur. The macrosystem is consistent with the subculture of violence theory, suggesting that widespread shared cultural values, norms, and beliefs shape one's personal behavior. At the exosystem level, institutions that connect individuals to larger society (e.g. work, social networks, schools, and churches) can also play a role in shaping attitudes towards and engagement in violence. The microsystem considers the family itself, and whether there are conditions within the family (e.g. poor conflict resolution styles) that might influence the likelihood of engaging in violence. Lastly, the ontogenetic level focuses on the individual themselves, suggesting that certain biological or developmental characteristics (e.g. personality disorder, addiction) can influence the effect of the other three levels on a person's likelihood of using violence in relationships (Dutton, 2006; Heise, 1998).

While there are many possible theories of intimate partner violence (see Barnish, 2004; Cunningham et al., 1998; or Lawson, 2012), as the current report is focusing on the geographical concentrations of police-reported IPV at a neighbourhood level, the remainder of this section will

focus on socio-structural theories that explain why IPV is more likely to occur in certain segments of a city.

SOCIAL DISORGANIZATION THEORY

In contrast to perspectives that suggest that individual personal characteristics are the key to understanding IPV (e.g. Caetano, Ramisetty-Mikler, & Harris, 2010), social disorganization theory posits that socioeconomic conditions, such as high levels of concentrated poverty and resource deprivation, per capita income, unemployment rates, low rates of education, high proportions of female-headed households, and higher numbers of households with children, are related to higher community rates of IPV and, therefore, must be considered when trying to understand and respond to intimate partner violence (Lauritsen & Schaum, 2004; Mears, Carlson, Holden, & Harris, 2001; Miles-Doan, 1998; Miles-Doan & Kelly, 1997; Murray, Bunch, & Hunt, 2016; O'Campo, Gielen, Faden, Xue, Kass, & Wang, 1995).

Using the US National Survey of Families and Households data from 1994, combined with 1990 Census data, Van Wyk and colleagues (2003) concluded that it was necessary to employ a multi-level approach to understand IPV. Contextual explanations presume that there are individual-level explanations for IPV, such as gender, ethnicity, and age, but that these effects may be weakened once neighbourhood characteristics, such as poverty, are considered (Van Wyk, Benson, Fox, & DeMaris, 2003). Several American studies have demonstrated this pattern. For instance, Van Wyk and colleagues (2003) found that neighbourhood characteristics, such as socioeconomic status and employment rates, interact with individual-level variables, such as gender, personal income, ethnicity, marital status, and age, to provide a more detailed explanation of the rates of IPV. Similarly, in a study on violence against women during pregnancy or in the six months following childbirth, O'Campo and colleagues (1995) found that considering neighbourhood-level variables of average per capita income, levels of unemployment, and the ratio of home ownership to rentals reduced the degree to which the individual-level factors of demographic characteristics (age, race), the partner's use of drugs, and degree of social support related to IPV. One particularly interesting finding was that when only considering individual-level risk factors, being a Caucasian woman was not significantly related to the risk of experiencing IPV, whereas being a Black woman was. However, once the neighbourhood factors were accounted for, being a Caucasian woman became a significant risk factor for IPV victimization. In other words, Caucasian women living in neighbourhoods characterized by high rates of poverty were much more likely to be the victims of IPV.

In a more recent study, Beyer, Baber, Wallis, and Hamberger (2015) completed a systematic review of the existing literature that studied the contributions of the neighbourhood environment to explaining rates of IPV while simultaneously controlling for the effects of individual level factors. They reviewed 36 studies published since 1995 and found that 30 of them identified a clear role played by the neighbourhood environment in explaining higher rates of IPV. These indicators of neighborhood context are part of social disorganization theory, initially developed by Shaw and McKay (1942) to explain the geographical concentration of crime. In this theory, a neighbourhood's degree of poverty, residential instability, and ethnic heterogeneity is associated with its capacity to deter and prevent crime (Shaw & McKay, 1942). Poverty results in a lack of investment and less development of resources and infrastructure, whereas both residential instability and ethnic heterogeneity can prevent strong bonds from being formed between neighbours that can

subsequently lead to a lack of shared norms, values, and attachments to one another (Browning, 2002). In other words, neighbourhoods where people lack opportunities to get to know each other can be characterized as lacking in social cohesion, which has also been referred to as collective efficacy.

In a study using survey data collected from nearly 9,000 residents across 343 neighbourhoods in Chicago, Sampson, Raudenbush, and Earls (1997) tested the relationship between collective efficacy, defined as "social cohesion among neighbors combined with their willingness to intervene on behalf of the common good" (Sampson et al., 1997: 918), and community levels of interpersonal violence, including those between intimate partners. After controlling for individual-level characteristics, such as marital status, ethnicity, and homeownership, as well as prior violence, they confirmed that stronger collective efficacy was associated with reduced community level interpersonal violence during the six months prior to the study. Notably, Sampson and colleagues (1997) also found that the influences of concentrated disadvantage and neighbourhood mobility on perceived neighbourhood crime, and on previous violent victimization, were weakened once collective efficacy was considered.

Researchers have used social disorganization theory to explain variations in rates of IPV across different segments of a city (Beyer et al., 2015; Browning, 2002). From this perspective, neighbourhoods that are characterized by these forms of concentrated disadvantage (e.g. proportion of the population on public assistance, the proportion below the poverty line, the proportion of single-parent households, and the proportion unemployed) have less of an effect over controlling incidents of crime and disorder. This proposition has been supported by several American studies (e.g. Beyer et al., 2013; Miles-Doan, 1998; Miles-Doan & Kelly, 1997; O'Campo, et al., 1995), although there are conflicting findings regarding the relative effects of concentrated disadvantage as opposed to collective efficacy/social cohesion.

A greater degree of collective efficacy is associated with informal social control, where neighbours watch out for each other and are willing to intervene in events they perceive as suspicious (Sampson et al., 1997). As an example, Block Watch programs are based on the concept of collective efficacy, relying on neighbours to informally police each other through the detection and reporting of deviant events. Similarly, when it comes to IPV, it could be argued that in areas with high collective efficacy, IPV is less likely to occur because neighbours who detect it will intervene either formally by, for example, calling the police, or informally, for example, admonishing the offender, or offering support to the victim.

However, Browning (2002) pointed out that the association between this aspect of social disorganization and IPV is more tenuous than the well-documented association between social disorganization and street-level violence because IPV tends to occur behind closed doors where neighbours are less likely to detect it. Still, both Browning's (2002) study on intimate partner homicide, as well as a Canadian study by Dekeseredy, Schwartz, Alvi, and Tomaszewski (2003) with women in public housing associated lower levels of collective efficacy with increased rates of IPV. Although not examining collective efficacy specifically, a study of 98 African-American women who were previously victimized as a child found that low levels of community cohesion – specifically, community members interrelating, communicating, and providing support for one another – moderated the relationship between childhood emotional abuse and physical IPV as an adult (Obasaju, Palin, Jacobs, Anderson, & Kaslow, 2009).

While focusing on the role that neighbourhood context played in influencing behavior, it is important to acknowledge that social disorganization did not discount personal characteristics that may influence criminality (Heidt & Wheeldon, 2015). Although social disorganization theory assumes that the environment one lives in has a greater influence over criminality, the research reviewed above highlights the importance of building multi-level frameworks with which to explore the relative contributions of individual-level and neighbourhood-level characteristics to risk for IPV (Beyer et al., 2013).

As an example of why it is important to consider more than one perspective, research suggests that explanatory factors for intimate partner violence may vary by ethnicity. Ammar et al. (2014) found that non-Muslim women were more likely to identify substance use as the cause of their partner's violence against them, while Muslim women were more likely to identify their husband's perception of women as inferior as the cause of the violence towards them. In an American study using data collected from 1,440 married or cohabiting couples as part of the 1995 National Alcohol Survey, Cunradi and colleagues (2000) analyzed the contributing factors for past 12-month IPV among White, Black, and Hispanic participants separately. Living in an impoverished neighbourhood statistically significantly increased the risk of IPV perpetrated by either a male or a female among Black couples, whereas, for White couples, it significantly increased the risk of IPV perpetrated by females. There was no effect of living in an impoverished neighbourhood on Hispanic couples, even though they were the most likely to live in impoverished neighbourhoods. In contrast, whereas education reduced the risk of female perpetrated violence among both White and Black couples, it actually raised the risk of female perpetrated IPV by 21% among Hispanic couples (Cunradi et al., 2000). Thus, it is important to consider both individual level characteristics, such as gender, age, and ethnicity, alongside indicators of the neighbourhood context, such as unemployment levels, per capita income, and residential mobility, when trying to explain intimate partner violence.

POLICE RESPONSE TO INTIMATE PARTNER VIOLENCE

Mandatory and pro-charge policies have been in place for intimate partner violence files in Canada since the 1980s (Jaffe, Wolfe, Telford, & Austin, 1986). In effect, with founded files, police typically lack discretion in whether to proceed with laying or recommending charges against the suspect. Still, in a review of Canadian Uniform Crime Reports (UCR) data from 2008, Dawson and Hotton (2014) reported that, while 74% of all intimate partner violence files were considered cleared by charge, 16% were cleared otherwise, and 10% were not cleared. This rate varied by province/territory, with British Columbia falling below the average at 66.5% cleared by charge, 21.8% not cleared, and 11.7% cleared otherwise. Dawson and Hotton (2014) reviewed various legal and non-legal factors that might influence the likelihood of recommending charges, and found that, in British Columbia, police were less likely to recommend charges relating to criminal harassment/harassing phone calls/threats or relating to sexual violations against the person than they were in files involving common assault. Compared to common assault files, they were more likely to recommend charges in intimate partner violence cases involving attempted murder or kidnapping. Victim injury also appeared to increase the likelihood police would recommend charges in British Columbia, as did the victim's gender (more likely to recommend charges with a female victim), and the victim-accused relationship (more likely to recommend charges if the

relationship was current). The age of the victim and the location of the incident (public versus private residence) did not influence the likelihood police would recommend charges.

Similarly, in an analysis of a single detachment's response to family violence calls for service, McCormick et al. (2011) found that police were more likely to make an arrest when the offender was present at the scene, when there was evidence of physical injury, and when there was a witness to the incident. In other words, when there was evidence corroborating that an offence had occurred, police followed the policy and made an arrest. Police were also more likely to make an arrest in cases where the offender had a history of violence in relationships, a history of complaints with the same victim, or a history of violence in general. Overall, the research on police response to intimate partner violence consistently supported that police consider intimate partner violence to be a serious issue and, in most cases, respond accordingly through making an arrest and recommending/laying charges against the suspect.

Current Study

This study examines 'E' Division RCMP police calls for service related to intimate partner violence that were considered "founded" by police. In this context, founded means that there was evidence to substantiate that a crime occurred. As with all founded cases, files are assigned one or more UCR codes by the police to indicate the nature of the file, such as common assault or break and enter. When reported to Statistics Canada, only the most serious code for a single file is reported. Files also report a Canadian Centre for Justice Statistics (CCJS) status that indicates how the file was dealt with (McCormick, Haarhoff, Cohen, Plecas, & Burk, 2012). Files can be considered cleared when they result in a recommended or laid charge against a suspect, or when they are cleared "otherwise", meaning that police had sufficient grounds to lay charges, but dealt with the file in some other way, such as through diversion. Files can also be cleared by departmental discretion, or for reasons including that the complainant does not want to proceed with charges.

This report presents three analyses. First, an overview of the trends in IPV across jurisdictions policed by the 'E' Division RCMP from 2011 to 2015 is presented. The data used for this analysis were the total number of founded files identified by 'E' Division detachments as involving IPV. The second set of analyses presents a detailed picture of IPV calls for service determined to be "founded" that were made to 'E' Division RCMP Detachments, with a specific focus on 33 detachments across the province with the largest raw number of IPV files in 2016. Offence data analyzed includes the date and time of day the report was made, the UCR code assigned to the file, and the CCJS status of the file. Data relating to the accused, including gender, ethnicity, age, and relationship status with the victim, were also analyzed. In addition, hotspot maps for each of the 33 jurisdictions are included to provide a visual representation of the distribution of IPV founded cases. The specific location for each founded IPV file was provided by the RCMP and 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.[3] All of the density maps were created using the same colour 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 IPV.

The third set of analyses involved a series of bivariate, multivariate, and municipal-level analyses. In its raw form, the IPV rate demonstrated 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 1.

TABLE 1: 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

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

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, IPV rates. This is the function of the bivariate analyses. 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.

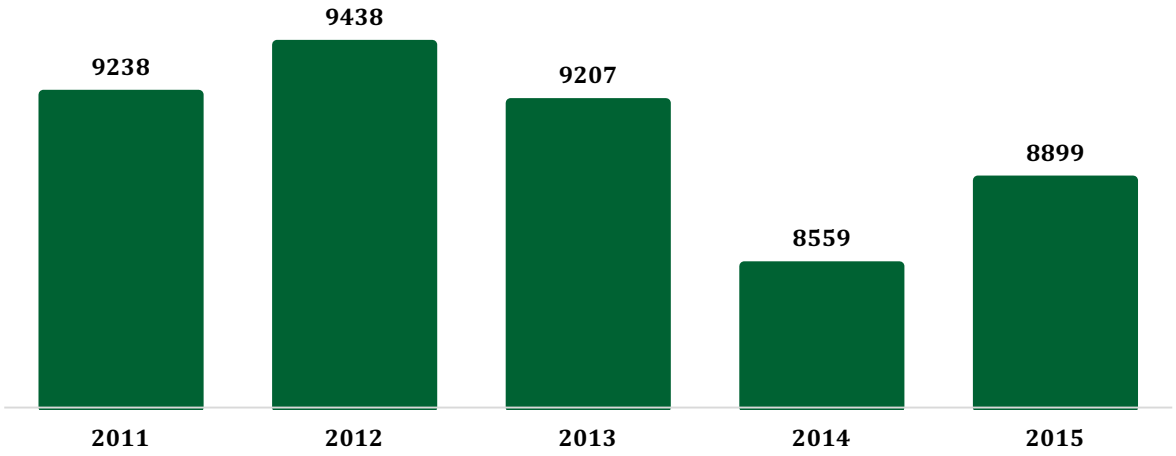
While the bivariate and multivariate analyses are designed to provide assessment at the aggregate level, it stands to reason that there is likely to be variation in effects both across different municipalities and across districts. As a result, a series of sub-analyses were conducted. First, we disaggregated the bivariate and multivariate for each of the four districts in BC. Second, separate analyses were conducted for each of the 33 municipalities. The analyses consisted of t-test, comparing intimate partner violence crime "hotspots" with "non-hotspots" in each municipality. The hotspots were derived from the density maps displayed in this report. The dissemination areas with the highest concentrations of intimate partner violence 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.

Finally, mention must be made of the Bonferroni correction approach that was used to evaluate statistical significance for the bivariate analyses. Conducting a series of bivariate analyses, as we did here, gives rise to what is commonly referred to as the multiple comparison problem. In short, doing multiple comparisons increases the likelihood of finding statistically significant relationships by chance. A commonly used correction for this problem is the Bonferroni correction, whereby the original alpha level (in this case 0.05) is adjusted by dividing it by the number of individual tests (in this case 13). Thus, for this research, bivariate analyses had to exhibit a probability value of less than 0.004 to be classified as significant, while probability values that ranged between 0.004 and 0.05 are categorized as being marginally significant.

Intimate Partner Violence Trends in 'E' Division RCMP Jurisdictions 2011-2015

The total founded IPV files in 'E' Division RCMP jurisdictions were tallied for each of the years 2011 through 2015 (see Figure 1). Over this period, founded IPV files declined overall by nearly 4%. However, the year to year rates fluctuated somewhat. Between each of 2011-2012 and 2012-2013, the total number of founded IPV files increased by approximately 2%, before there was a comparatively sharp decrease of 7% between 2013 and 2014. Following this decline, the number of founded files increased again by 4% in 2015.

FIGURE 1: RAW NUMBERS OF FOUNDED IPV FILES ACROSS 'E' DIVISION 2011-2015



The overall decline of 4% across the province masked some varying trends by district. Interestingly, three of the four RCMP Districts experienced reductions in the number of founded IPV files in 2014, with reductions from 2013 of 12.2% in the Southeast District, 8.3% in the Lower Mainland District, and 2.1% in the Island District (see Figure 2). All three of these Districts also experienced a subsequent increase in the number of founded files the following year, with the greatest increase occurring in the Lower Mainland District (up 9.5 per cent from 2014), and smaller increases occurring in the Island District (up 3.7 per cent), and Southeast District (up 1.8 per cent).

The greatest amount of change between 2011 and 2015 occurred for the Southeast District, which saw a total reduction in IPV files of 19.1%. Specifically, with the exception of 2014-2015, when there was an increase of 1.8%, the Southeast District experienced yearly declines in the number of founded IPV files, including a reduction of 4.7% between 2011-2012, a reduction of 5.1% between 2012-2013, and a more substantial reduction of 12.2% between 2013-2014.

The Lower Mainland District also saw an overall reduction over the five year period, of 2.3%. Rather than experiencing several consistent years of declining file counts, the Lower Mainland first experienced a small increase in files of 3.2% between 2011-2012, as well as a larger increase of 9.5% in the most recent year of data (2014-2015). In the years between these end-points, the Lower Mainland experienced two years of declining file counts, with the total number of founded IPV files dropping by 5.7% between 2012-2013 and again by 8.3% between 2013-2014 (see Figure 2).

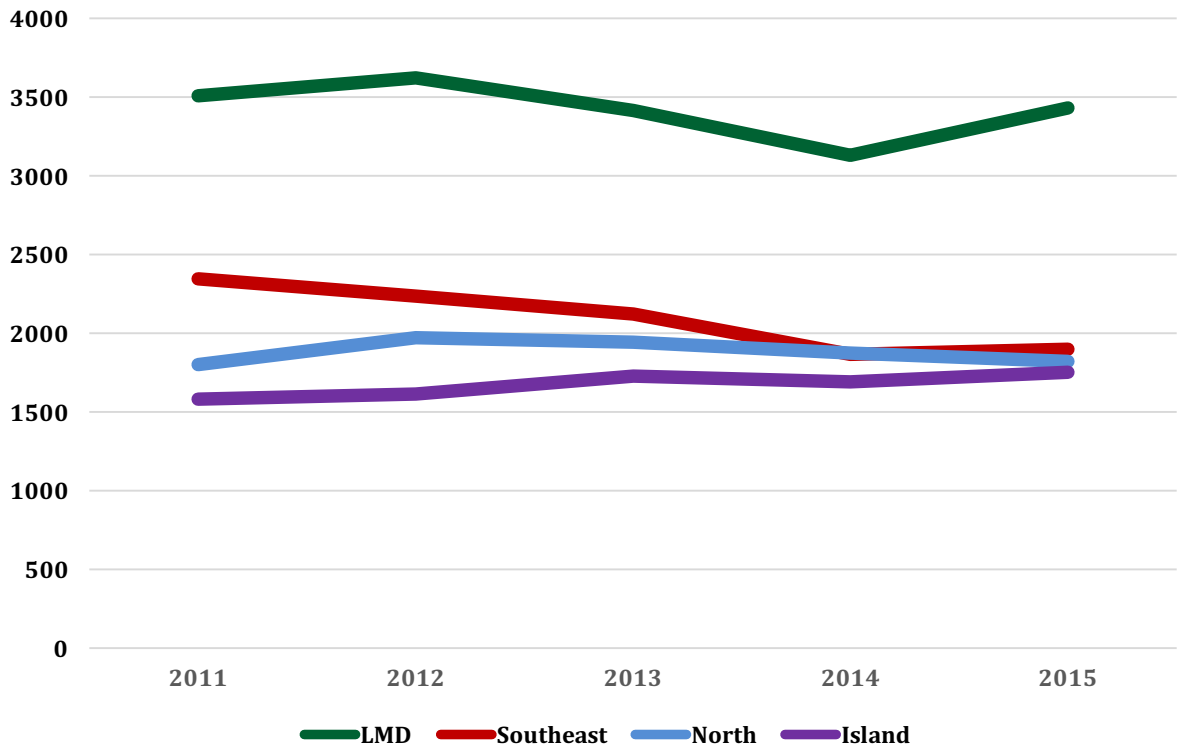
Conversely, the yearly number of IPV files increased between 2011 and 2015 by 10.7% for the Island District. In this District, the number of files increased at three different intervals, with the only decline occurring between 2013-2014 when the number of founded files dropped by 2.1%. In the remaining years, the number of founded files increased by 1.8% (2011-2012), 7.2% (2012-2013), and more recently by 3.7% (2014-2015).

The total number of founded IPV files very slightly increased for the North District, by 1.1%. However, the pattern of founded IPV files was quite different in this District compared to the

others, as after an initial increase in files of 9.5% between 2011-2012, the number of files each year steadily declined, with a reduction of 1.3% between 2012-2013, a reduction of 3.6% between 2013-2014, and a reduction of 2.9% between 2014-2015 (see Figure 2).

As shown in Figure 2, when considering the raw number of yearly number of IPV files for each of the four districts of British Columbia, occurrences of IPV were the highest overall in the Lower Mainland. Of note, this analysis did not control for population levels, which would explain the higher raw number occurrences of IPV files in the Lower Mainland.

FIGURE 2: FOUNDED IPV FILES ACROSS 'E' DIVISION DISTRICTS 2011-2015



The next set of analyses examined the occurrence of founded IPV files between 2011 and 2015 for each district independently.

IPV TRENDS IN THE LOWER MAINLAND DISTRICT 2011-2015

As a whole, the Lower Mainland District experienced an initial slight increase in founded IPV files in 2012 (up 3.2 per cent from 2011), and a second increase in 2015 (up 9.5 per cent), with two years of declining file counts in between (down 5.7 per cent in 2013 and 8.3 per cent in 2014). While the overall number of IPV files declined overall by 2.3% in the Lower Mainland, there were substantial variations by jurisdiction. Table 2 shows the change in IPV files from 2011 to 2015 for each of these jurisdictions. Whereas some jurisdictions, such as Burnaby, Surrey, and Mission saw a 10% or greater reduction in IPV files over the five years, other locations reported substantial increases. However, it should be noted that in some jurisdictions with large increases, the baserates in 2011

were comparatively low to begin with (e.g. Bowen Island n = 1, Whister/Pemberton n = 30, and University n = 9) and were, therefore, more affected by an increase in raw numbers.

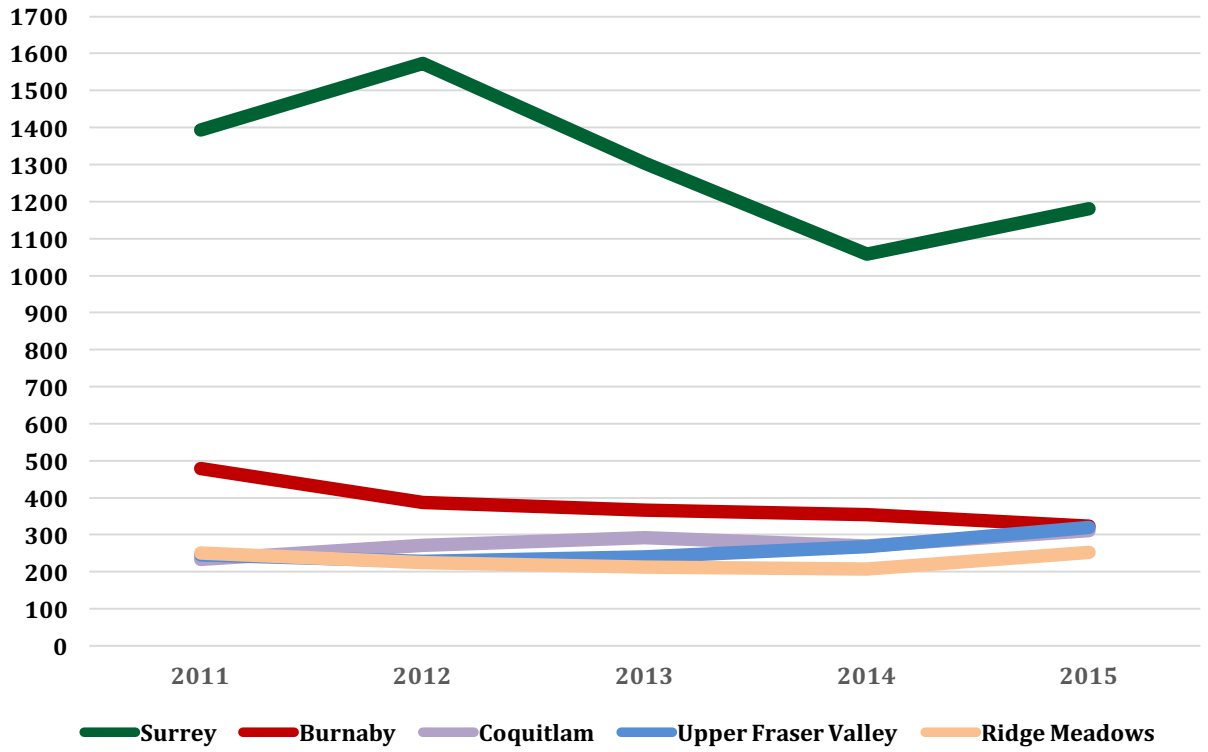
TABLE 2: FOUNDED IPV FILES IN THE LOWER MAINLAND DISTRICT 2011-2015

	2011	2012	2013	2014	2015	% Change over 5 Years
Bowen Island	1	1	4	4	3	+ 200%
Burnaby	479	387	367	355	323	- 32%
Coquitlam	233	271	292	269	312	+ 34%
Langley	195	180	096	200	212	+ 9%
Mission	151	191	192	136	133	- 12%
North Vancouver	193	206	181	165	190	- 2%
Richmond	148	129	188	204	241	+ 63%
Ridge Meadows	250	225	213	207	252	+ 1%
Squamish	52	60	80	68	47	- 10%
Sunshine Coast	98	73	69	81	91	- 7%
Surrey	1,394	1,573	1,303	1,058	1,181	- 15%
University	9	11	9	16	14	+ 56%
Upper Fraser Valley	245	229	240	268	319	+ 30%
Whistler/Pemberton	30	52	57	63	71	+ 136%
White Rock	32	33	24	38	41	+ 28%
LMD Totals	3,510	3,621	3,415	3,132	3,430	- 2%

Figure 3 provides the five year trend data for five jurisdictions with the highest number of IPV files over 2011 to 2015 in the LMD. Whereas the Surrey RCMP reported far more IPV files than the other top 4 jurisdictions, it should be noted that their population base is at least twice as large as the jurisdiction with the second highest number of files (Burnaby).[4] Interestingly, the number of IPV files peaked for Surrey in 2012 then sharply declined by one-third (32.7 per cent) over the next two years before increasing again by 11.6% between 2014 and 2015. In contrast, Burnaby experienced a steady reduction in IPV files from 2011 through to 2015, with the steepest reduction occurring between 2011 and 2012 (down 19 per cent), and an average decline of 5.7% for each subsequent year. The pattern of change for Coquitlam was somewhat bumpy, with increases in founded IPV files for both 2012 and 2013 and then a drop of 8% in 2014 before a subsequent increase of 16% in 2015. In contrast, the Upper Fraser Valley experienced a single reduction in founded IPV files between 2011 and 2012, but has been on a steady trajectory upward since then, with increases of 5% between 2012 and 2013, 12% between 2013 and 2014, and 19% between 2014 and 2015. Conversely, Ridge Meadows experienced steady declines in founded IPV files from 2011 through to 2014, before experiencing an increase of 27% in 2015.

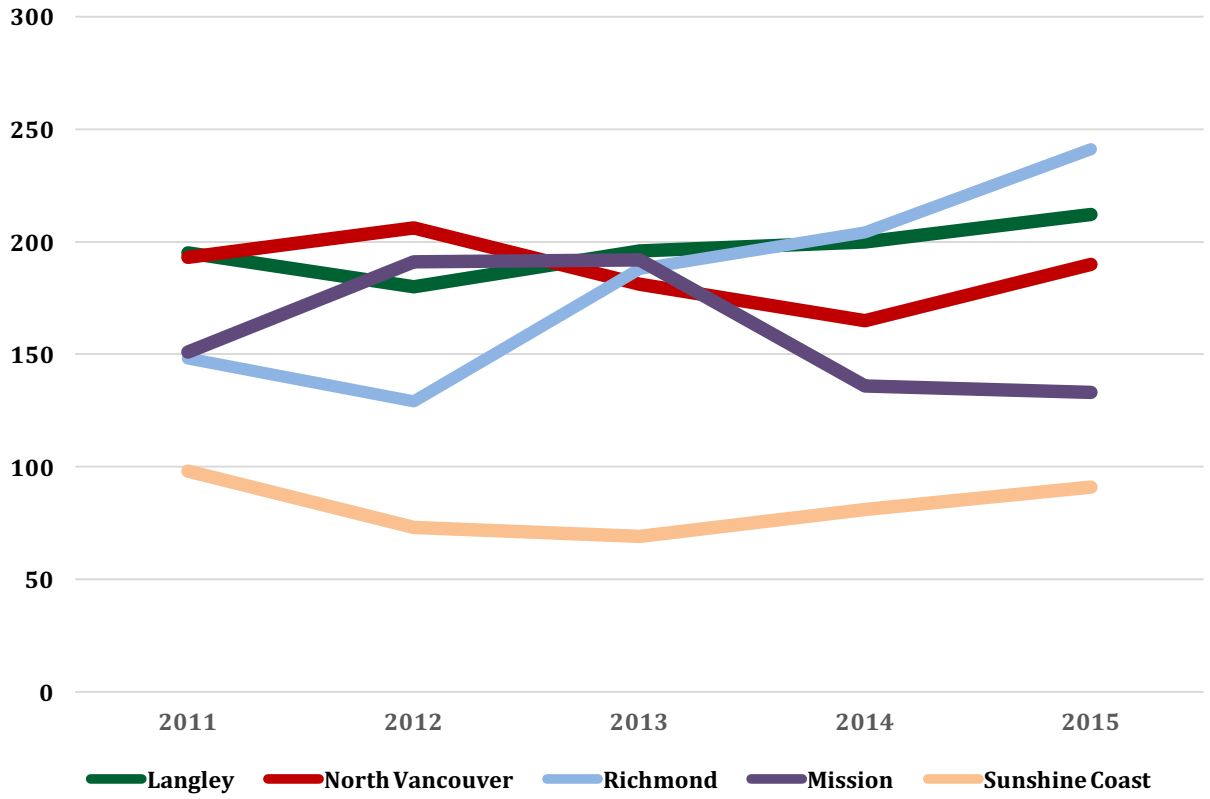
[4] As reported based on 2016 census results by https://www.citypopulation.de/Canada-BritishColumbia.html

FIGURE 3: FOUNDED IPV TRENDS 2011-2015 IN TOP 5 JURISDICTIONS IN LMD DISTRICT



The IPV trends for the LMD jurisdictions with the sixth through tenth highest overall number of IPV files 2011 to 2015 are presented in Figure 4. Of these five jurisdictions, Richmond experienced the largest increase in the raw number of founded IPV files between 2011 and 2015 (62.8 per cent), whereas Mission experienced the largest decrease (11.9 per cent). The largest single year change for Richmond occurred between 2012 and 2013 when the number of founded IPV files increased 45.7%. A second large increase of 18.1% occurred between 2014 and 2015. In contrast, whereas Mission experienced increases in founded IPV files the first two years under study (up 26.5 per cent between 2011 and 2012, and up 5.2 per cent between 2012 and 2013), the number of founded IPV files dropped again substantially in 2014 (a reduction of 29.2 per cent compared to 2013), and again by 2.2% in 2015. The Sunshine Coast experienced the opposite pattern: after reductions of 25.5% (2011-2012) and 5.5% (2012-2013), the file counts increased in 2014 (up 17.4 per cent) and again in 2015 (up 12.4 per cent). After a drop the first year of 7.7%, Langley has consistently experienced year to year increases of 8.9% between 2012 and 2013, 2.0% between 2013 and 2014, and 6% between 2014 and 2015. The pattern of change for North Vancouver was less consistent. Between 2011 and 2012, North Vancouver saw an increase in founded IPV files of 6.7%, then experienced two years of declining file totals (down 12 per cent between 2012 and 2013, and 8.8 per cent between 2013 and 2014), before experiencing a second increase of 15.2% in 2015.

FIGURE 4: FOUNDED IPV TRENDS 2011-2015 IN 6TH THROUGH 10TH JURISDICTIONS IN LMD DISTRICT



IPV TRENDS IN THE SOUTHEAST DISTRICT 2011-2015

As previously discussed, the Southeast District as a whole experienced a large reduction in founded IPV files between 2011 and 2015 (19.1 per cent), with the greatest reduction in files occurring between 2013 and 2014 (12.2 per cent). Again, the pattern of these trends varied by jurisdiction. There are 29 RCMP detachments across the Southeast District (see Table 3). Some of the more substantial increases in founded IPV files over this five year period were observed in jurisdictions with comparatively low base rates to begin with, such as Logan Lake (n = 1 founded IPV file in 2011) and Lytton (n = 8 founded IPV files in 2011). The same trend of comparatively low numbers of IPV files in 2011 was generally observed for communities with the most substantial reductions in founded IPV files between 2011 and 2015, such as Clinton (n = 10), Barriere (n = 15), and Summerland (n = 17). Again, small changes in the number of founded IPV files between 2011 and 2015 would produce much larger effects on the overall percentages than they would in communities with a larger number of founded IPV files, such as Kelowna or Kamloops.

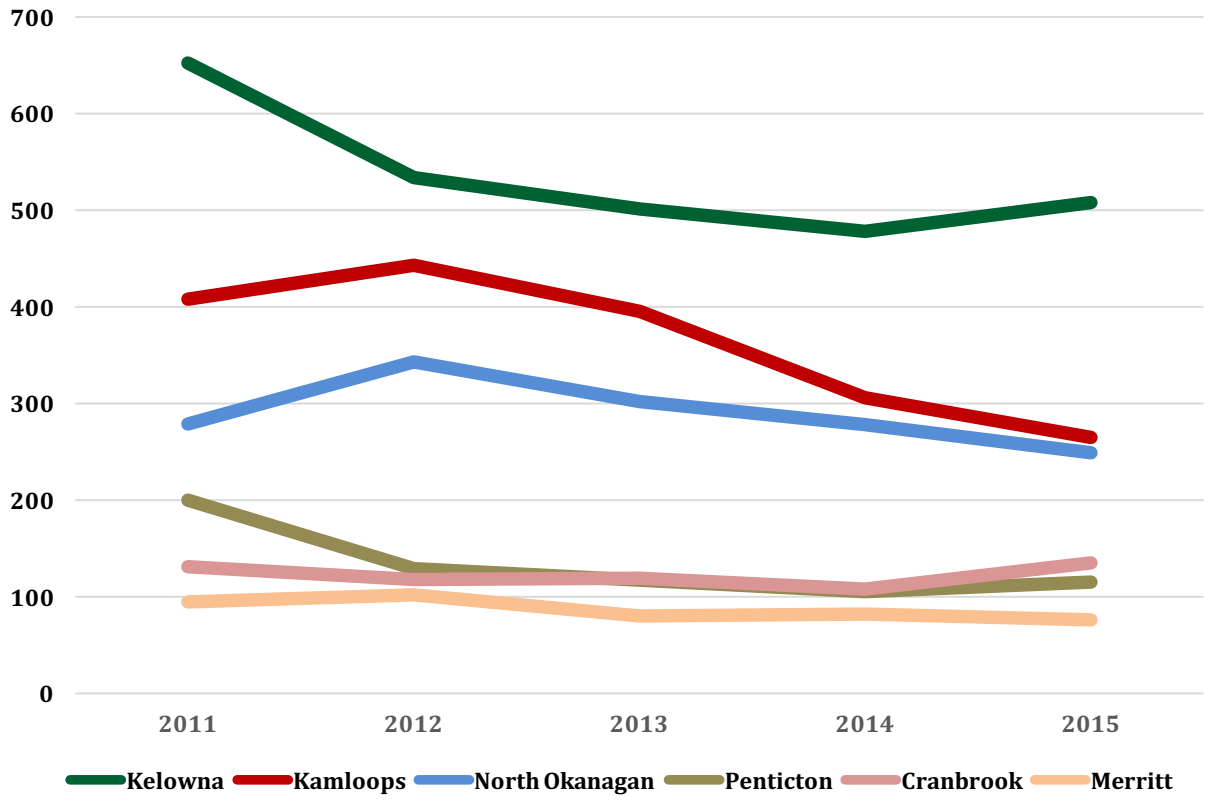
TABLE 3: FOUNDED IPV FILES IN THE SOUTHEAST DISTRICT 2011-2015

	2011	2012	2013	2014	2015	% Change over 5 Years
Ashcroft	7	7	10	5	10	+ 43%
Barriere	15	10	14	12	7	- 53%
Boundary	37	19	21	24	29	- 22%
Castlegar	38	50	41	36	36	- 5%
Central Kootenay	50	49	69	45	41	-18 %
Chase	16	14	27	17	25	+ 56%
Clearwater	13	12	11	10	13	0
Clinton	10	4	11	7	4	- 60%
Columbia Valley	34	31	23	23	31	- 9%
Cranbrook	131	118	119	108	135	+ 3%
Creston	48	34	28	25	29	- 40%
Elk Valley	26	34	30	25	22	- 15%
Golden	19	18	28	26	19	0
Kamloops	408	443	395	306	265	- 35%
Kelowna	652	534	501	478	508	- 22%
Keremeos	18	11	10	8	15	- 17%
Lillooet	16	21	18	20	15	- 6%
Logan Lake	1	7	8	4	4	+ 300%
Lytton	8	11	12	10	17	+ 113%
Merritt	95	102	80	82	76	- 20%
North Okanagan	279	343	302	278	249	- 11%
Penticton	200	129	117	105	115	- 43%
Princeton	8	13	13	10	13	+ 63%
Revelstoke	13	27	22	18	16	+ 23%
Salmon Arm	45	60	56	59	77	+ 71%
Sicamous	14	5	17	6	13	- 7%
South Okanagan	54	35	56	41	45	- 17%
Summerland	17	12	22	12	9	- 47%
Trail	75	84	61	64	60	- 20%
Southeast Totals	2,347	2,237	2,122	1,864	1,898	- 19%

The jurisdictions with the largest baseline number of files in 2011 included Kelowna (652 files), Kamloops (408 files), North Okanagan (279), Penticton (200), Cranbrook (131), and Merritt (95). Their five year trends are provided in Figure 5. Generally speaking, these communities saw an overall decline in the number of founded IPV files from 2011 through to 2015. Although the number of files in Kelowna increased slightly between 2014 and 2015 (6.3 per cent), the overall number of files decreased by over one-fifth over the past five years. Both Kamloops and the North Okanagan experienced a peak in the number of files in 2012 (an increase of 9 per cent from the previous year for the Kamloops RCMP and an increase of 22.9 per cent for the North Okanagan RCMP), both jurisdictions saw a steady decline in files subsequently to less than 300 a year in 2015. Penticton also experienced a general reduction in files, with decreases of 35.5%, 9.3%, and 10.3% for 2011-2012, 2012-2013, and 2013-2014, respectfully. Although they saw a slight increase again in 2015, the overall amount of IPV files in Penticton from 2011 to 2015 declined by an impressive 42.5%. In contrast, the number of IPV files in Cranbrook remained relatively constant over the five year period, with two primary periods of change occurring in 2011-2012 and 2013-2014, when the number of files decreased by 10%. They then increased by 25% between 2014-2015, resulting in an overall increase of 3.1% between 2011-2015. Conversely, the number of files in Merritt consistently

fluctuated between 2011 and 2015, increasing by 7.4% between 2011-2012 before dropping by an impressive one-fifth (21.6 per cent) in 2013. After a small increase of 2.5% in 2014, the number of files dropped another 7.3% in 2015, resulting in an overall reduction in the number of IPV files between 2011 and 2015 of 20%.

FIGURE 5: FOUNDED IPV TRENDS 2011-2015 IN THE TOP 6 JURISDICTIONS IN THE SOUTHEAST DISTRICT



IPV TRENDS IN THE NORTH DISTRICT 2011-2015

Overall, the total number of founded IPV files between 2011 and 2015 in the North remained virtually unchanged, from 1,799 in 2011 to 1,819 in 2015, although when examining the patterns year to year, it is clear that this District first experienced an increase in founded files of about one-tenth (9.5 per cent) before steadily experiencing decreases of 1.3% between 2012-2013, 3.6% between 2013-2014, and 2.9% beteween 2014-2015. However, as displayed in Table 4, examining the year-to-year trends for the entire District masks some very substantial changes at a community level. Consistent with the Districts already discussed, the communities with the largest overall increase in founded IPV files from 2011 to 2015 began with comparatively small numbers in 2011 (e.g., Lisims/Nass Valley n = 17, Valemount n = 3, and Kitimat n = 26). Similarly, those with the largest decreases in the number of founded IPV files between 2011 and 2015 also started with relatively low numbers (e.g. Queen Charlotte City n = 14, McBride n = 5, and Takla Landing, n = 8).

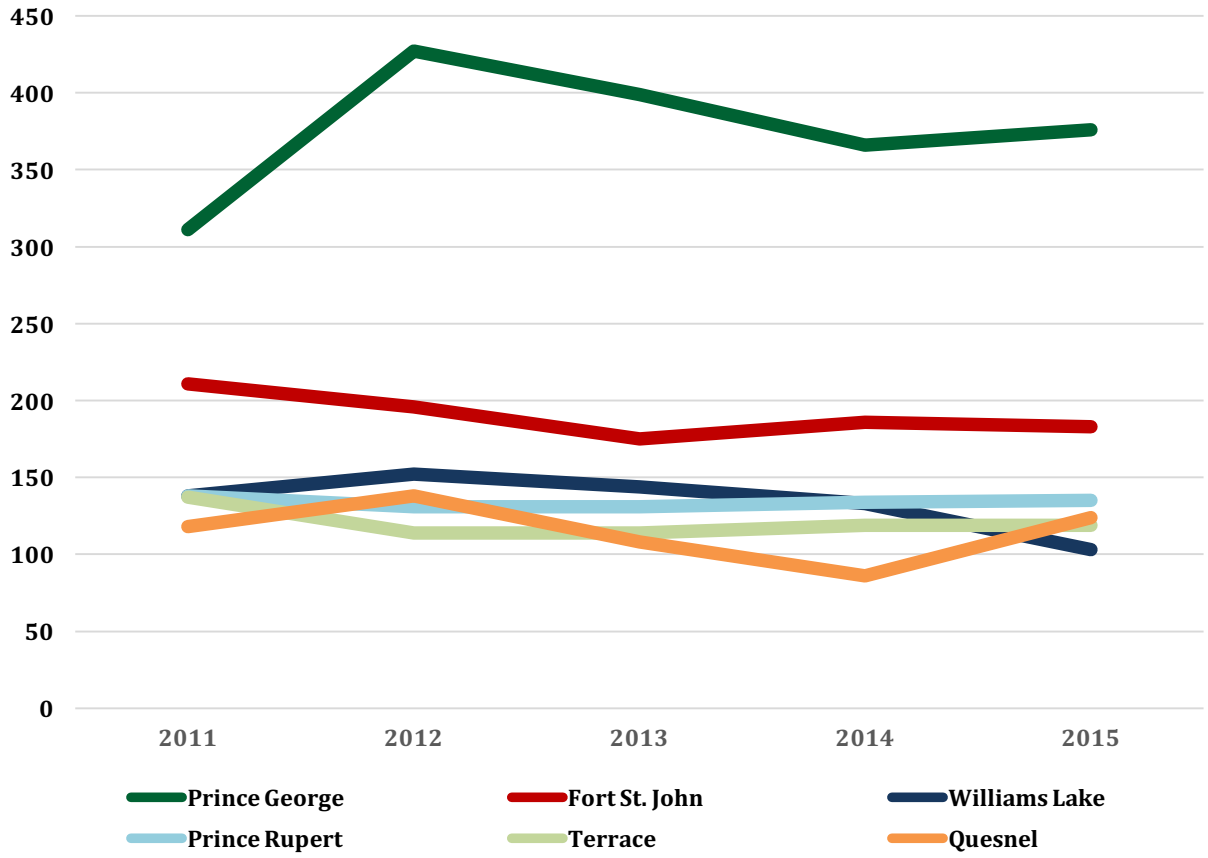
TABLE 4: FOUNDED IPV FILES IN THE NORTH DISTRICT 2011-2015

	2011	2012	2013	2014	2015	% Change over 5 Years
100 Mile House	39	25	31	35	29	- 26%
Alexis Creek	7	15	15	18	8	+ 14%
Anahim Lake	11	12	18	13	13	+ 18%
Atlin	4	12	6	9	9	+ 125%
Bella Bella	19	23	30	29	12	- 37%
Bella Coola	14	15	13	16	16	+14%
Burns Lake	51	55	29	29	45	- 12%
Chetwynd	28	30	23	25	32	+ 14%
Dawson Creek	71	65	88	65	105	+ 48%
Dease Lake	14	9	12	16	18	+ 29%
Fort St. James	82	85	105	82	61	- 26%
Fort St. John	211	196	175	186	183	- 13%
Fraser Lake	21	15	11	13	12	- 43%
Houston	25	31	43	37	40	+ 60%
Hudsons Hope	7	3	3	7	5	- 29%
Kitimat	26	32	38	36	40	+ 54%
Lisims/Nass Valley	17	21	28	35	39	+ 129%
Mackenzie	30	50	24	37	19	- 37%
Masset	17	18	17	23	17	0
McBride	5	2	7	1	1	- 80%
New Hazelton	61	88	90	101	69	+ 13%
Northern Rockies	59	72	85	79	50	- 15%
Prince George	311	427	399	366	376	+ 21%
Prince Rupert	138	131	131	134	135	- 2%
Queen Charlotte City	14	9	9	2	2	+ 86%
Quesnel	118	138	108	86	124	+ 5%
Smithers	39	34	46	50	53	+ 36%
Stewart	1	0	3	4	3	+ 200%
Takla Landing	8	7	11	15	3	- 63%
Terrace	137	114	114	119	119	- 13%
Tsay Keh Dene	15	23	21	13	9	- 40%
Tumbler Ridge	13	9	15	12	14	+ 8%
Valemount	3	7	9	7	5	+ 67%
Vanderhoof	45	44	42	40	50	+ 11%
Williams Lake	138	152	144	133	103	- 25%
North Totals	1,799	1,969	1,943	1,873	1,819	+ 1

With this in mind, Figure 6 presents the five year trends in founded IPV files for the six communities with the overall largest number of IPV files. Compared to the other five jurisdictions, the number of IPV files in Prince George initially increased by over one-third (37.2 per cent) between 2011 and 2012 before entering a relatively slow decline between 2012 and 2013 (6.6 per cent) and 2013 and 2014 (8.3 per cent), and then slighlty increasing again by 2.7% between 2014 and 2015. The pattern in the other five jurisdictions was comparatively more stable. For instance, in Fort St. John, there was a steady decline in founded IPV files between 2011 and 2013 (7.1 per cent between 2011-2012 and 10.7 per cent between 2012-2013). IPV files then increased slightly (6.2 per cent) between 2013 and 2014 before dropping again slightly (1.6 per cent) in 2015, for an overall percentage drop of 13% between 2011 and 2015.

Williams Lake experienced a different progression, with an initial increase between 2011 and 2012 of 10.1%, before experiencing multiple years of decreasing file counts between 2012 and 2013 (5.3 per cent), 2013 and 2014 (7.6 per cent), and a larger drop of nearly a quarter (22.6 per cent) between 2014 and 2015, for an overall reduction in founded file counts of 25% between 2011 and 2015 (see Figure 6). Conversely, the number of founded IPV files in Prince Rupert remained fairly constant year to year, with only minor changes of a 5% reduction between 2011 and 2012, no change to 2013, another nearly 5% reduction (4.4 per cent) between 2013 and 2014, and no change again between 2014 and 2015. Overall then, the number of founded IPV files in Prince Rupert between 2011 and 2015 varied only by 2.2%. Somewhat similarly, after an initial decrease in file counts between 2011 and 2012 of 16.8% in Terrace, the number of files remained relatively constant between 2012 and 2015, with the only other change occuring between 2013 and 2014 when the number of files increased by 4.4%. In contrast, Quesnel experienced much more year to year variance in the number of founded IPV files, though the overall rate of change between 2011 and 2015 was fairly small, at an increase of 5.1%. Specifically, the file count increased by 17% between 2011 and 2012, decreased by approximately one-fifth each of the next two years (a decrease of 21.7 per cent between 2012 and 2013, and a decrease of 20.4 per cent between 2013 and 2014), before experiencing a sharp upward trend of 44.2% between 2014 and 2015.

FIGURE 6: FOUNDED IPV TRENDS 2011-2015 IN THE TOP 6 JURISDICTIONS IN THE NORTH DISTRICT



IPV TRENDS IN THE ISLAND DISTRICT 2011-2015

The final district consisted of 25 RCMP jurisdictions on the Island. Overall, as shown in Table 5, the number of IPV files across the Island District increased by 10.7% between 2011 and 2015. This was the result of increases over three of the four years, with the only redution in files occurring in 2014 (a 2.1 per cent reduction from 2013). Again, the largest percent changes were observed for communities with small numbers of files in 2011, including a 300% increase in founded IPV files in Sayward (n = 0 in 2011), a 100% increase in founded IPV files in Nootka Sound (n = 6 in 2011), an 80% increase in Gabriola Island (n = 5 in 2011), and a 64% increase in Port Hardy (n = 39 in 2011). Conversely, there was a 77.7% decrease in founded IPV files between 2011 and 2015 in Quadra Island (n = 9 in 2011).

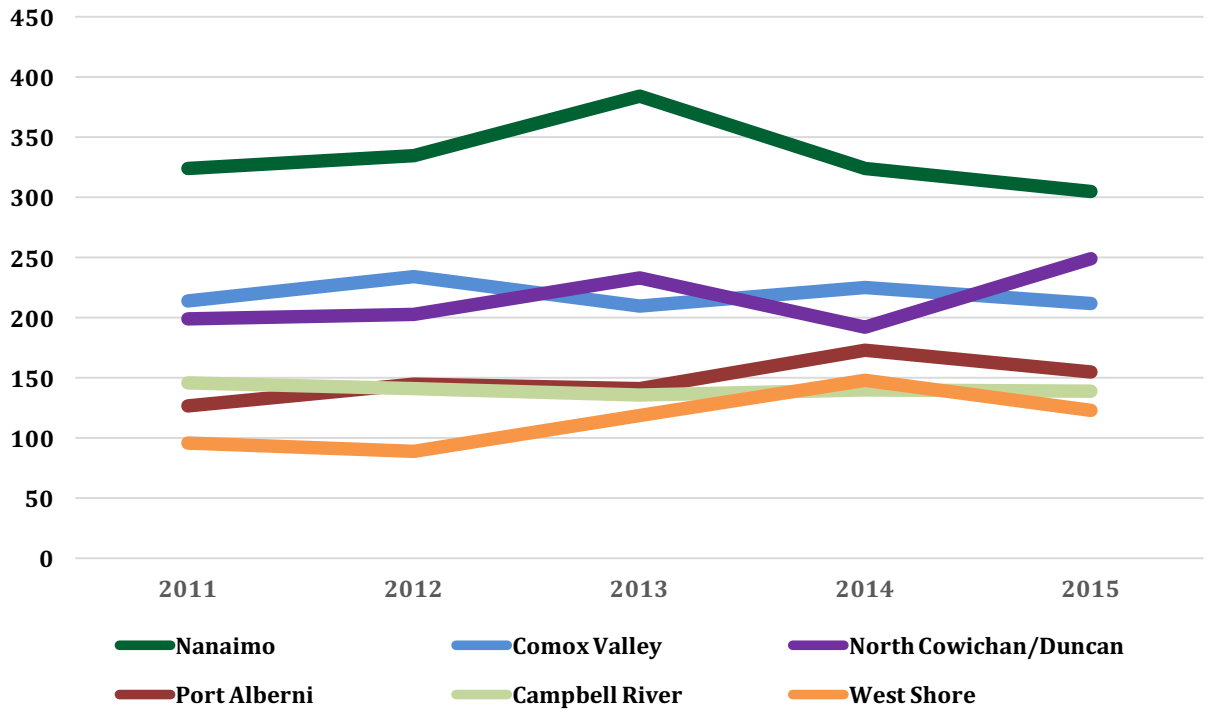
TABLE 5: FOUNDED IPV FILES IN THE ISLAND DISTRICT 2011-2015

	2011	2012	2013	2014	2015	% Change over 5 Years
Alert Bay	17	20	10	12	17	0
Campbell River	146	141	136	140	139	- 5%
Comox Valley	214	234	210	225	212	- 1%
Gabriola Island	5	6	2	10	9	+ 80%
Ladysmith	45	51	50	45	42	- 7%
Lake Cowichan	23	17	25	28	29	+ 26%
Nanaimo	324	335	384	324	305	- 6%
Nootka Sound	6	14	7	12	12	+ 100%
North Cowichan/Duncan	199	203	233	192	249	+ 25%
Oceanside	60	49	73	67	75	+ 25%
Outer Gulf Islands	5	5	3	4	7	+ 40%
Port Alberni	127	145	141	173	155	+ 22%
Port Alice	4	0	1	1	4	0
Port Hardy	39	49	76	76	64	+ 64%
Port McNeill	10	14	12	15	13	+ 30%
Powell River	46	54	56	55	60	+30%
Quadra Island	9	5	2	4	2	- 78%
Saltspring Island	14	16	18	12	17	+ 21%
Sayward	0	0	0	0	3	+ 300%
Shawnigan Lake	34	38	37	28	42	+ 24%
Sidney/North Saanich	74	62	53	53	69	-7%
Sooke	39	35	38	31	45	+ 15%
Tofino	30	20	27	25	43	+ 43%
Ucluelet	16	9	14	10	16	0
West Shore	96	89	119	148	123	+ 28%
Island Totals	1,582	1,611	1,727	1,690	1,752	+ 11%

The trends for the six Island District communities with the highest year to year number of founded IPV files are shown in Figure 7. Generally, these six communities presented unique variations over the five year period. For instance, the number of IPV files in Nanaimo remained relatively flat between 2011 (n = 324) and 2015 (n = 305), with the exception of a peak occuring in 2013 (n = 384). Conversely, Comox Valley reported the smallest number of founded IPV files in 2013 (n = 210); however, this number did not vary substantially from the number of founded IPV files in either 2011 (n = 214) or 2015 (n = 212). Rather, Comox Valley did experience two slight peaks in the number of files in 2012 (n = 234) and 2014 (n = 225); however, these increases were

comparatively minor in nature and were typically followed by a nearly equal reduction in each of the following years. North Cowichan/Duncan also reported year to year fluctuations in the number of founded IPV files, with a peak occurring most recently in 2015 (n = 249), with a second, slightly lower, peak in 2013 (n = 233). Still, over the five year period, North Cowichan/Duncan did experience an overall increase in founded IPV files of 25%, with most of the change occurring between 2014 and 2015 (an increase of 29.7 per cent). Port Alberni has also experienced an upward trend in IPV files, with two large increases occurring first between 2011 and 2012 (14.2 per cent), and a second larger increase of 23%, which occurred between 2013 and 2014. Overall, the number of founded IPV files in Port Alberni increased over a quarter (22.0 per cent) between 2011 and 2015, though of note, in the most recent year of data, the number of files dropped by one-tenth from the year prior. The West Shore also experienced a decline in the number of IPV files in the most recent year of data (16.9 per cent); however, prior to this they had experienced two steady years of increasing founded file counts, with an increase of a third (33.7 per cent) between 2012 and 2013, followed by an increase of one-quarter (24.4 per cent) between 2013 and 2014. Overall, the number of files in West Shore over the last five years has increased by over one-quarter (28 per cent). In contrast to the fluctuations observed in these other five communities, Campbell River reported nearly flat rates of founded IPV files between 2011 and 2015, with only minor fluctuations of approximately 3% happening most years. Overall, the number of files in Campbell River decreased by 4.8% between 2011 and 2015, with the largest decreases occurring in the first two years (3.4 per cent between 2011 and 2012, and 3.5 per cent between 2012 and 2013).

FIGURE 7: FOUNDED IPV TRENDS 2011-2015 IN THE TOP 6 JURISDICTIONS IN THE ISLAND DISTRICT



Analysis of Founded 'E' Division IPV Files in 2016

A series of analyses were conducted that focused on a detailed exploration of offence and offender characteristics from founded IPV files in 2016. There were a total of 8,581 founded "family violence" files managed by 'E' Division RCMP Detachments in 2016. This total reflects a decrease of 3.6% from the previous year of data, and an overall decrease from 2011 of 7.1% of founded IPV files. Other than 2014, when 8,559 founded IPV files occurred in RCMP jurisdictions across British Columbia, 2016 had the lowest number of founded files. The offence characteristics and offender demographics are analyzed in more depth for the 8,581 founded IPV files that occurred in 2016, first for the province, then by district, and then by the top municipalities in each of the four districts.

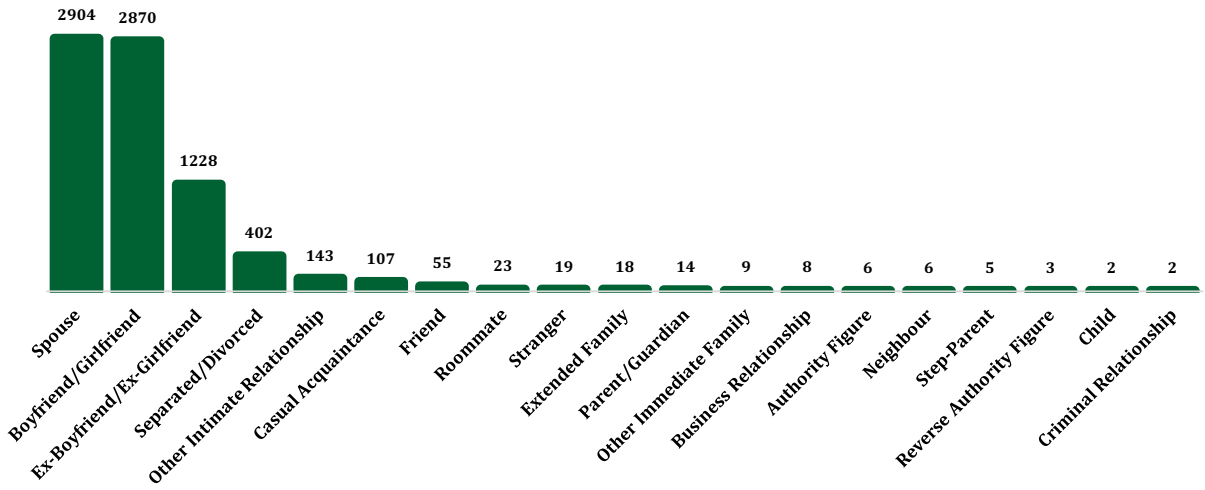
IPV OFFENCE DESCRIPTIVES WITHIN 'E' DIVISION

In total, 58[5] of the 8,581 files were "duplicate" files where there was more than one suspect identified in the same file. For instance, some of the duplicate files identified a male and a female accused, suggesting that the file could have been managed as a dual aggressor situation. In addition, it is possible that a subset of these files involved victims who themselves were not in an intimate relationshp with the offender, but who were victimized in the context of an intimate partner relationship. As an example, victims could include neighbours, business partners, or extended family members who were victimized as a result of the offender's attempt to threaten or harm their current or former intimate partner. Unfortunately, the "Accused Relationship Role" was not coded for 51 of these 58 files (87.9 per cent), making it difficult to determine the relationship of all parties involved.

The known relationship patterns of the accused to the victim in the larger sample of files are presented in Figure 8. After removing the 757 files where the relationship pattern was unknown, the most common relationships identified were current spouse (37 per cent), current boyfriend or girlfriend (37 per cent), an ex-boyfriend or ex-girlfriend (16 per cent), and partners who had separated or divorced (5 per cent).

[5] The 58 duplicate cases were distributed over 34 different communities, thus it is unlikely that their inclusion would have an undue influence on the crime trends in 2016. Consequently, these files were analyzed alongside the remaining 8,523 files. Of note, the list of these 34 communities is provided in Appendix A.

FIGURE 8: RELATIONSHIP OF ACCUSED TO PRIMARY VICTIM (N = 7,824)



Overall, the vast majority of cases were identified under the Family Violence Flag as a "Spousal / Partner Assault" (81 per cent). The remaining one-fifth were identified as a "Spousal / Partner Other Offence" (12 per cent), an "Other Relationship" (5 per cent), or "Spousal / Partner Abuse" (3 per cent). The UCR scoring reflected the most serious criminal act that occurred in each file; as shown in Table 6, overwhelmingly this involved Common Assault (68 per cent).

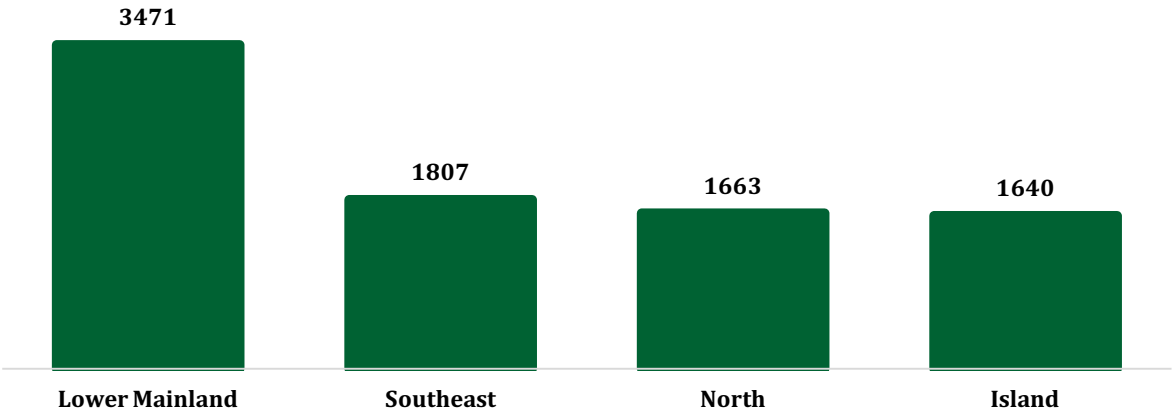
TABLE 6: UCR CATEGORIES OF 2016 FOUNDED 'E' DIVISION IPV FILES (N=8,581)

	Number of Founded Files	% of All Founded Files
Assault – Common	5,857	68.3%
Assault with a Weapon or Causing Bodily Harm	973	11.3%
Uttering Threats Against a Person	580	6.8%
Harassing Communications	301	3.5%
Criminal Harassment	251	2.9%
Sexual Assault	186	2.2%
Forcible Confinement	135	1.6%
Assault – Aggravated	52	0.6%
ZZZ Assault – Common	43	0.5%
Other	203	2.4%

Very commonly, IPV files resulted in the offender being charged with a criminal offence (79 per cent). Another one-in-ten files were considered founded, but not cleared (11 per cent), while 6% were cleared by department discretion. In 3% of the cases, the complainant would not lay a charge against the offender. A handful of cases were scored as not cleared due to: a reason beyond police control (n = 5); the suicide of the accused (n = 4); the accused being involved in another incident (n = 3); the accused already being in jail (n = 2); the accused dying in some way other than suicide (n = 2); the accused being out of the country (n = 1); or due to the death of a complainant or witness (n = 1). In two additional cases, the file was dealt with through alternative measures.

Nearly half of the 2016 founded IPV files for 'E' Division RCMP occurred in the Lower Mainland District (40 per cent) (see Figure 9). The remaining 60% were distributed equally across the Southeast (21 per cent), North (19 per cent), and Island (19 per cent) Districts. Given the general population distributions in these Districts, this finding was expected. A set of analyses later in this report will analyze the nature of these files by District.

FIGURE 9: DISTRIBUTION OF 2016 FOUNDED IPV FILES ACROSS THE FOUR 'E' DIVISION DISTRICTS



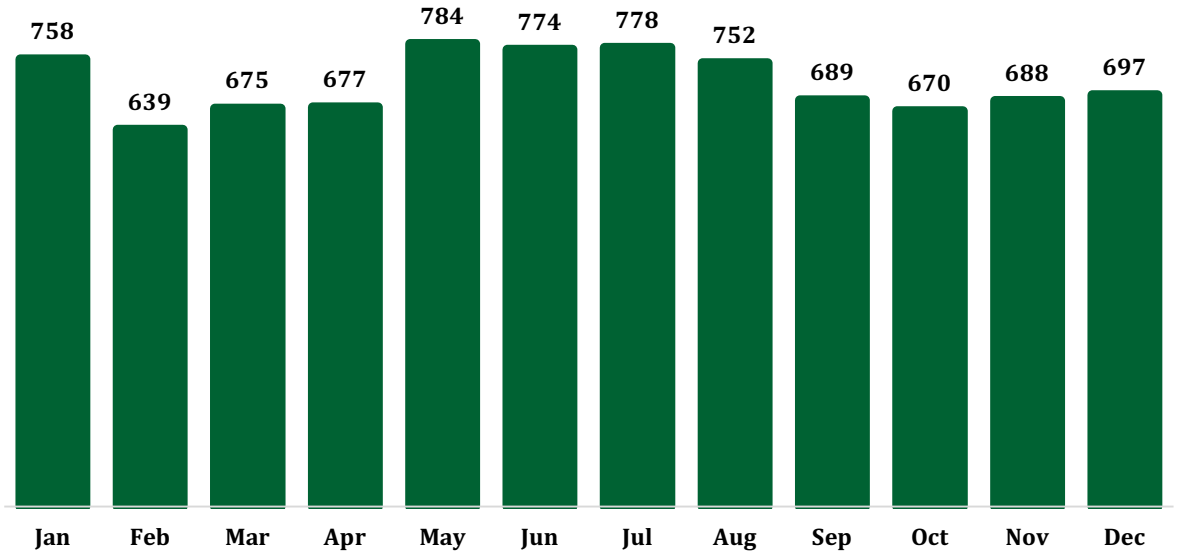
When examining British Columbia as a whole, just over 40% of founded IPV files occurred in 10 municipalities policed by the RCMP (Table 7). Although the raw number of founded IPV files in Surrey was nearly four times larger as the next closest municipality, when considered against the size of the 2016 population, Surrey actually experienced one of the lower rates of founded IPV files among the Top 10 municipalities. Instead, the municipality of Duncan demonstrated a rate of founded IPV files that far exceeded the other nine municipalities when population size was controlled for, with a rate that was 10 times as high as the next highest municipality of Prince George.

TABLE 7: TOP 10 MUNICIPALITIES FOR FOUNDED IPV FILES ACROSS 'E' DIVISION DETACHMENTS

	Number of Founded Files	% of All Founded Files	2016 Population	Rate of IPV per 10,000 Population
Surrey	1,231	14%	517,887	23.8
Prince George	314	4%	74,003	42.4
Burnaby	310	4%	232,755	13.3
Nanaimo	308	4%	90,504	34.0
Kelowna	289	3%	127,380	22.7
Kamloops	270	3%	90,280	29.9
Richmond	250	3%	198,309	12.6
Duncan	213	3%	4,944	430.8
Maple Ridge	196	2%	82,256	23.8
North Vancouver	193	2%	138,833	13.9
Population rates based on the 2016 Census Data				

The month in which the founded IPV files were reported was generally evenly distributed across the year (see Figure 10). While a visual representation of the distribution implies that there were some peaks during the summer months, it is important to note that, as a percentage of the total number of files reported throughout the year, 9% of the files were reported in each of May, June, and July, whereas in the month with the lowest number of reported IPV files (February), the percent reported was only 2% lower, and is likely affected by the shorter number of days in that month.

FIGURE 10: DISTRIBUTION OF FOUNDED IPV FILES IN E DIVISION BY MONTH REPORTED



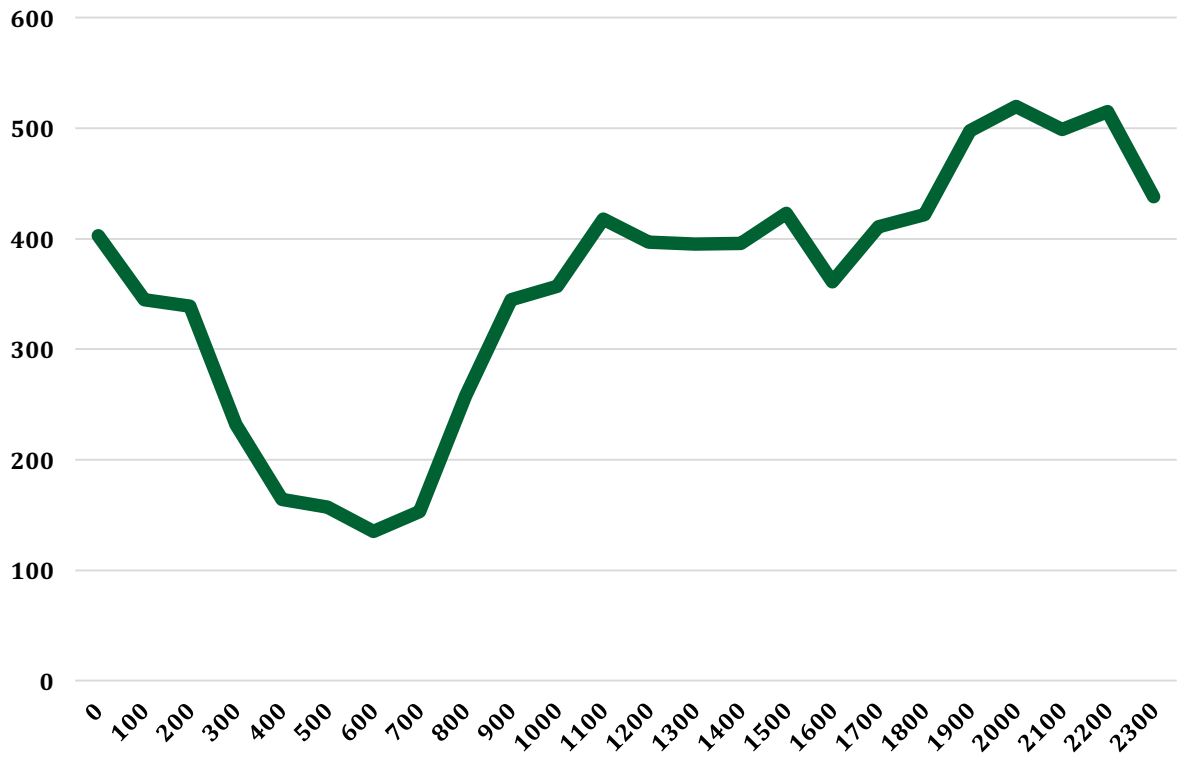
There were some more meaningful variations in the distribution of founded IPV files by day of the week (see Table 8). One-third of IPV files were reported on Saturdays (17 per cent) and Sundays (17 per cent). The remaining two-thirds of files were reported nearly equally between Monday and Friday. Considering that there were 52 Sundays through Thursdays and 53 Fridays and Saturdays in 2016, this resulted in an average of between 21 files per day on Tuesdays and 28 files per day on Sundays.

TABLE 8: NUMBER OF IPV FILES ACROSS E DIVISION BY DAY OF WEEK REPORTED

	Number of Founded Files	% of All Founded Files	Average Number per Day
Monday	1,160	14%	22.3
Tuesday	1,097	13%	21.1
Wednesday	1,111	13%	21.4
Thursday	1,132	13%	21.8
Friday	1,234	14%	23.3
Saturday	1,419	17%	26.8
Sunday	1,428	17%	27.5

There were some variations in the time of day that IPV files were reported to the RCMP. Of note, this does not necessarily reflect the time that the offence occurred, as the call for service may have been made during or some time after the event. Overall, the files were divided nearly equally, with 47% reported during the day (0600-1759) and 53% reported during the night (1800-0559) (see Figure 11).

FIGURE 11: DISTRIBUTION OF FOUNDED IPV FILES IN 'E' DIVISION BY MONTH REPORTED



2016 FOUNDED IPV FILES IN 'E' DIVISION - ACCUSED DESCRIPTIVES

Generally, the accused were male (79 per cent), and either Caucasian (60 per cent) or Aboriginal (25 per cent); very few accused were identified as South Asian (6 per cent), Asian (4 per cent), Black (2 per cent), Middle Eastern (2 per cent), or Hispanic (1 per cent). The average age of the accused was 37 years old (range of 12 to 98); there was a significant different in average age depending on whether the accused was male (X = 38 years old, SD = 12) or female (X = 35 years old, SD = 12), t (7,670) = 7.9, p < .001. As shown in Table 9, there was also a significant difference in age between some of the ethnic groups of the accused, F_{Welch} (7, 288.3) = 21.7, p < .001. Specifically, both Aboriginal and Black accused were significantly younger than Asian, Caucasian, Middle Eastern, and South Asian accused. Hispanic and "Other" accused did not statistically differ in age from any other ethnic group.

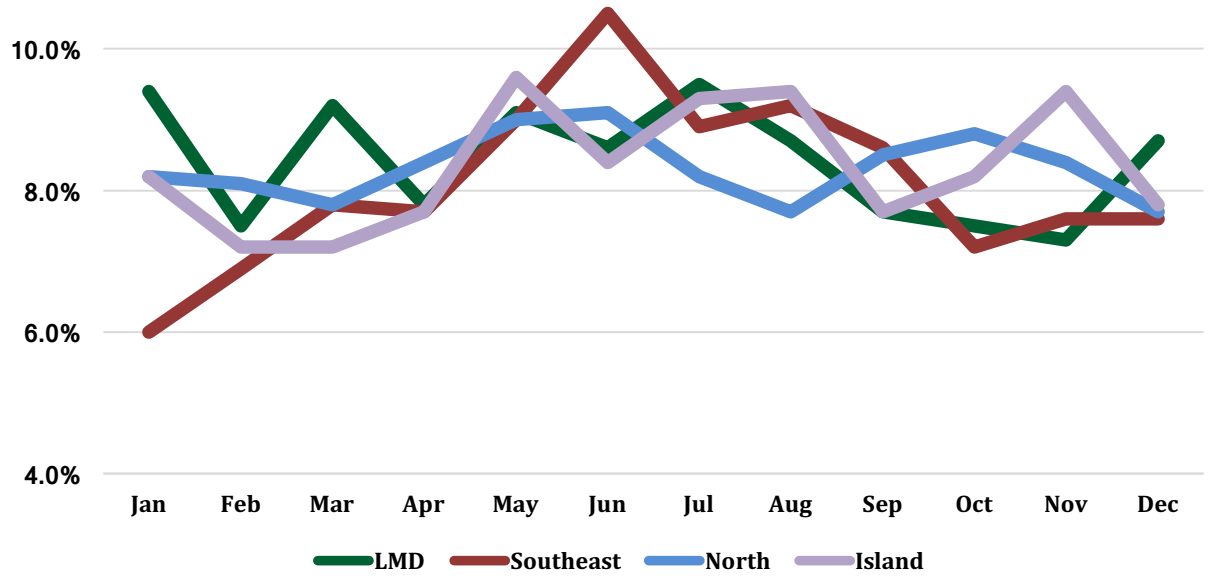
TABLE 9: AVERAGE AGE OF ACCUSED IN FOUNDED IPV FILES ACROSS 'E' DIVISION DETACHMENTS (N = 7,308)

	Average Age in Years *(Standard Deviation)*	Age Range in Years
Aboriginal	34.4 (10.6)	13-69
Asian	38.1 (13.4)	13-84
Black	33.2 (9.8)	15-60
Caucasian	37.9 (12.5)	12-98
Hispanic	35.6 (12.5)	17-80
Middle Eastern	37.6 (10.5)	15-81
Other	36.4 (13.6)	16-62
South Asian	37.6 (10.7)	13-88

ANALYSIS OF 2016 FOUNDED IPV FILES – COMPARING DISTRICTS

Before examining the offence and offender trends for each district as a whole, these characteristics were compared across the four 'E' Division RCMP policing districts. While there were no statistically significant patterns between the number of files each month and which District the call was generated from, some interesting differences can be seen in Figure 12. For instance, the highest proportion of founded IPV files for the Southeast (10.5 per cent) and North District (9.1 per cent) occurred in the month of June, whereas the Island and Lower Mainland reported a smaller proportion in IPV files in June compared to the previous month. In contrast, the highest proportion of files for the Lower Mainland occurred in January (9.4 per cent) and July (9.5 per cent), whereas for the Island the highest proportion occurred in August (9.4 per cent) and November (9.4 per cent). The files in the North were spread out more evenly across the 12 months, with a slightly lower percentage occurring in August (7.7 per cent) and September (7.7 per cent).

FIGURE 12: DISTRIBUTION OF FOUNDED IPV FILES ACROSS 'E' DIVISION DISTRICTS BY MONTH REPORTED

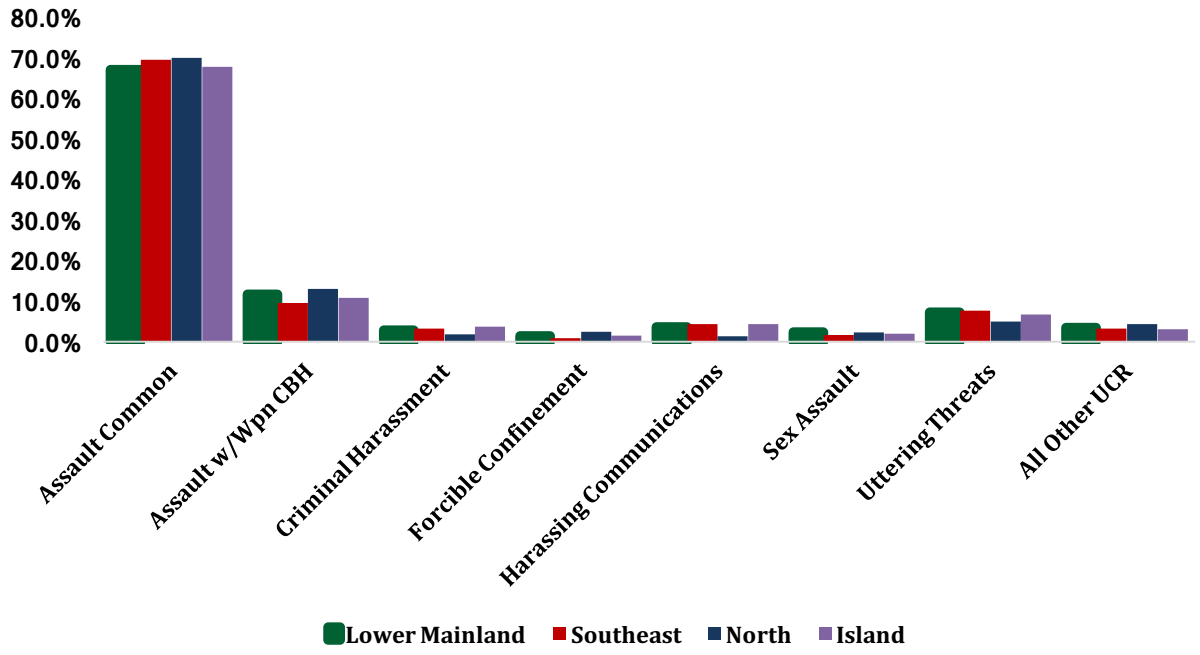


There were no identifiable trends by district regarding whether the file was more likely to be reported in the 06:00 to 18:00 or 18:00 to 06:00 time frames. Generally, a slight majority of files were reported during the overnight hours, regardless of whether it was the Lower Mainland (51.9 per cent), Southeast (52.3 per cent), North (55.2 per cent), or Island (52.9 per cent) district.

For the 8,581 files, 50 different UCR codes were assigned, with the current analysis focusing on the main UCR code that reflected the most serious incident involved in the file. Prior to comparing UCR codes by district, all files were amalgamated into eight main codes reflecting Assault Common (n = 5,857), Assault with a Weapon/Causing Bodily Harm (n = 973), Criminal Harassment (n = 251), Forcible Confinement (n = 135), Harassing Communications (n = 301), Sex Assault (n = 186), and Uttering Threats (n = 580), with the eighth category of "other" representing the remaining UCR codes (n = 298). These eight main UCR codes were compared across district, and a statistically significant pattern was found, x^2 (21) = 83.3, p < .001.

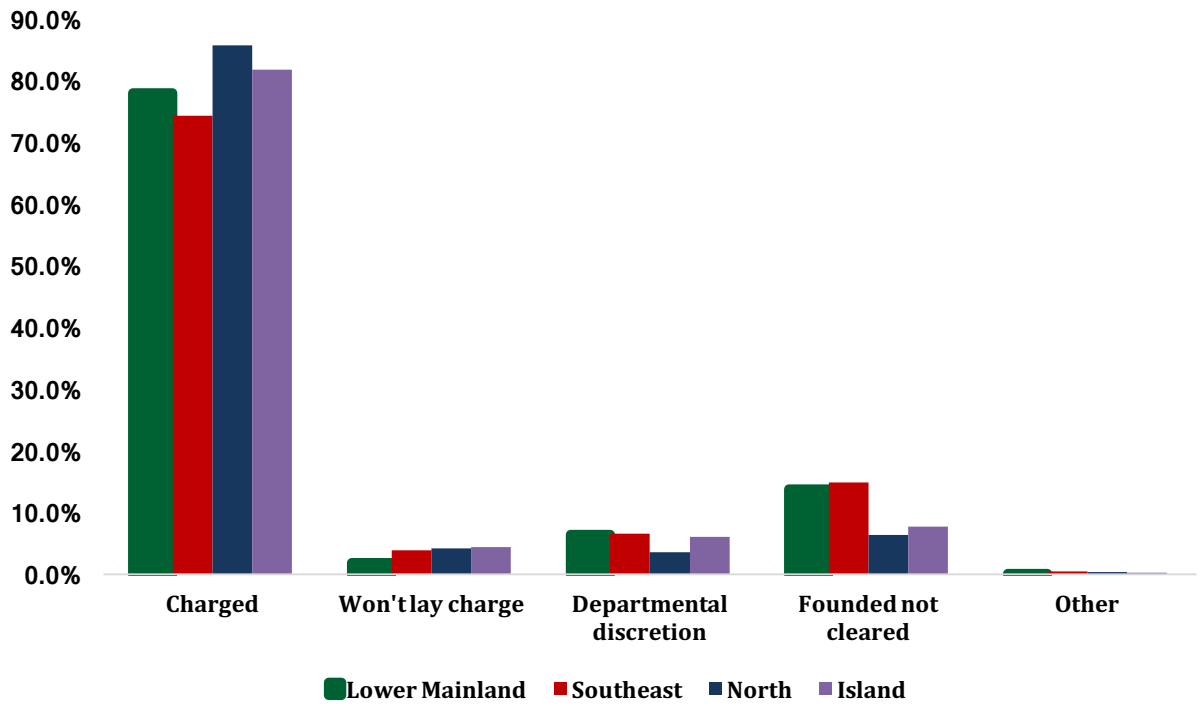
As displayed in Figure 13, the main UCR code assigned in all four districts related to a Common Assault. Of the remaining UCR codes, there was some variation. For instance, 13% of the files in the North were scored as an Assault With a Weapon/Causing Bodily Harm compared to 9.6% of the files in the Southeast. In contrast, the North was less likely to record files with a Criminal Harassment (1.8 per cent), Harassing Communications (1.3 per cent), or Uttering Threats (4.9 per cent) designation, whereas in the three other districts, these files made up a slightly larger proportion of the total number of files.

FIGURE 13: COMPARING UCR SCORING FOR FOUNDED 2016 FILES ACROSS DISTRICTS



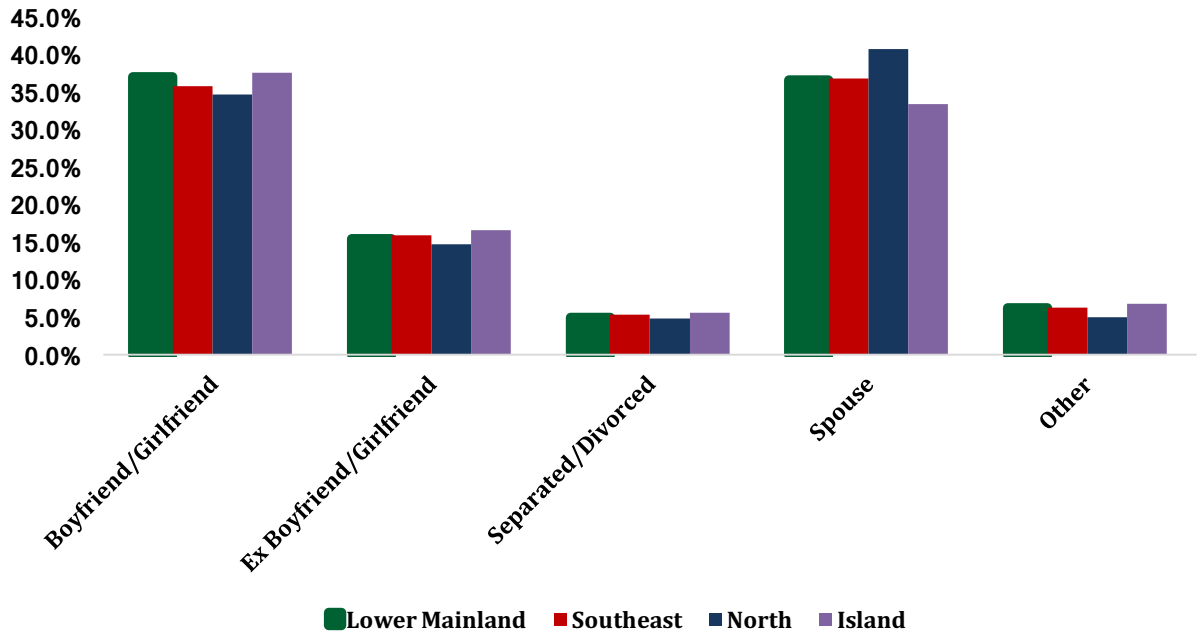
CCJS Status was recoded from 12 categories into five categories (1 = charged, 2 = complainant would not lay charge, 3 = cleared by departmental discretion, 4 = founded not cleared, 5 = other), and compared across the four RCMP districts (see Figure 14). A significant association was found between district and CCJS case outcome, x^2 (12) = 174.2, p = .000. A higher proportion of cases in the North (85.7 per cent) and Island (81.7 per cent) resulted in a charge approval compared to the Southeast (74.3 per cent) and Lower Mainland (78.0 per cent). Conversely, a higher proportion of files in the Southeast (14.8 per cent) and Lower Mainland (13.8 per cent) had a "founded not cleared" designation as compared to in the Island (7.7 per cent) and North (6.3 per cent) districts. A higher proportion of cases in the Island (4.4 per cent), North (4.2 per cent), and Southeast (3.8 per cent) concluded with the complainant refusing to lay charges compared to in the Lower Mainland (1.8 per cent). Finally, a smaller percentage of files in the North were cleared by departmental discretion (3.5 per cent) than in the Southesat (6.6 per cent), Lower Mainland (6.0 per cent), or Island (6.0 per cent).

FIGURE 14: COMPARING CCJS STATUS FOR FOUNDED 2016 FILES ACROSS DISTRICTS



Another association was found between the districts and the relationship status of the accused, x^2 (12) = 21.2, p < .05. The main difference appeared to be that a higher proportion of files in the North involved an accused who was the current spouse of the victim (40.7 per cent) compared to files in the Island (33.4 per cent), Lower Mainland (36.6 per cent), or Southeast (36.8 per cent) districts (see Figure 15).

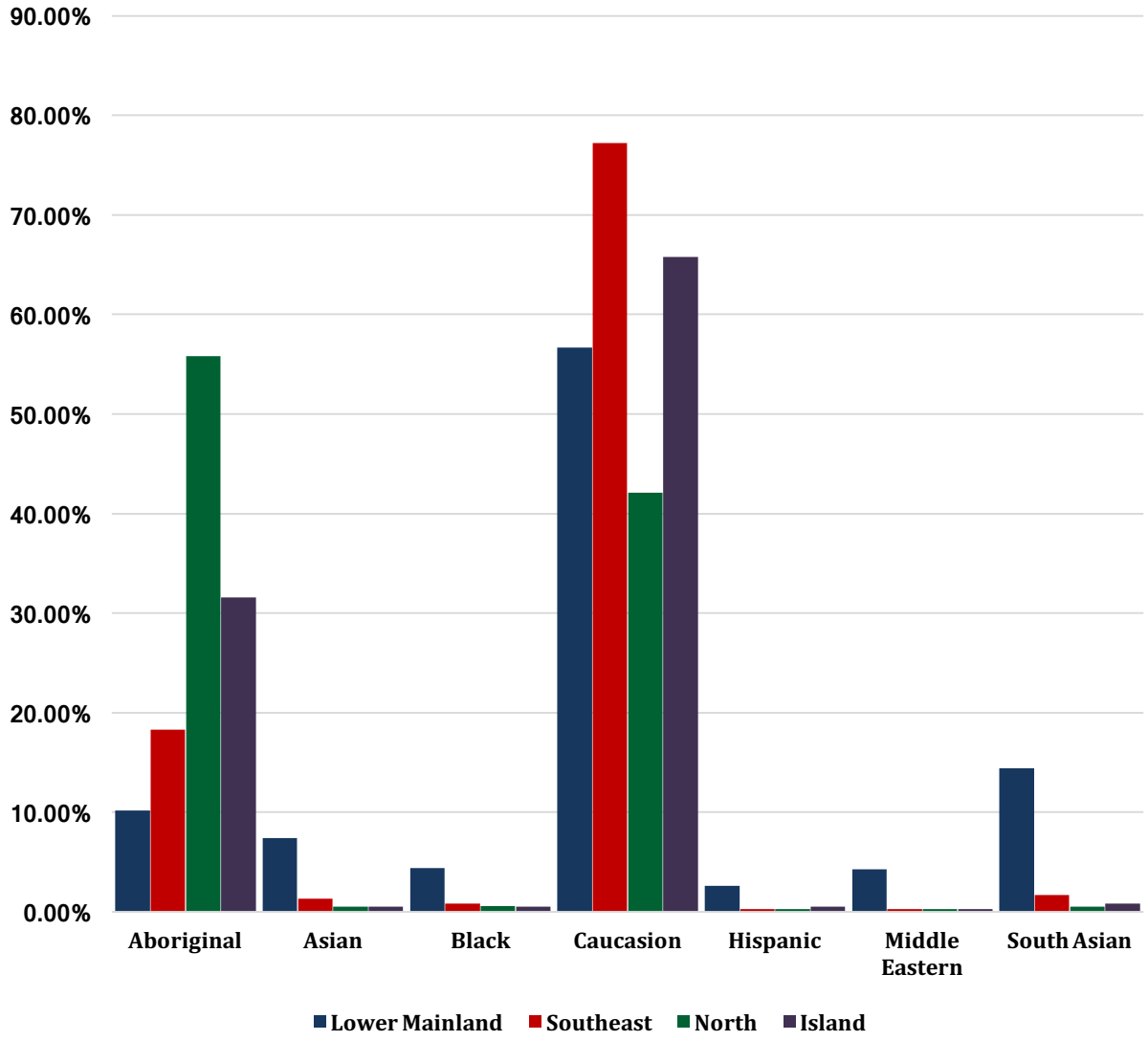
FIGURE 15: COMPARING FOUNDED 2016 FILE RELATIONSHIP STATUS OF ACCUSED ACROSS DISTRICTS



Regarding the personal characteristics of the accused, there was a significant association between offender age and RCMP District. Offenders in the North District were, on average, 35.2 years old, whereas offenders in the other three districts were significantly older (Island = 37.0 years, Lower Mainland = 37.4 years, Southeast = 37.9 years), F_{Welch} (3, 3684.7) = 16.4, p = .000. Similarly, there was a significant difference between gender of the accused and the district the file was reported in, x^2 (3) = 32.2, p < .001. While males were more likely to be the accused in all districts, there was a higher proportion of female accused in the North (23.6 per cent), Island (23.4 per cent), and Southeast (22.1 per cent) districts compared to the Lower Mainland (17.7 per cent).

Another significant association was observed between districts and the ethnicity of the accused, x^2 (18) = 2057.1, p = .000. Whereas the majority of accused were Caucasian in the Southeast (77.2 per cent), Island (65.8 per cent), and Lower Mainland (56.7 per cent), Caucasians represented a minority of accused in files from the North district (42.1 per cent). In contrast, over half (55.8 per cent) of the accused in the North were Aboriginal (see Figure 16). Aboriginal accused also composed nearly one-third of the population in the Island district (31.6 per cent). The ethnic distribution of accused in the Lower Mainland was much more varied than in the other three districts. In the Lower Mainland, as mentioned, 56.7% of the accused were Caucasian, with the remaining accused identified as South Asian (14.4 per cent), Aborginal (10.2 per cent), Asian (7.4 per cent), Black (4.4 per cent), Middle Eastern (4.3 per cent), or Hispanic (2.6 per cent). With the exception of Caucasian and Aboriginal accused, all other ethnic groups composed a very small proportion of the overall files in the Southeast, North, and Island districts.

FIGURE 16: COMPARING ACCUSED ETHNICITY IN FOUNDED 2016 FILES ACROSS DISTRICTS



The remaining analyses examined the IPV trends within each district individually, with a focus on the locations with a higher number of founded IPV files.

Founded IPV Files in 2016 in the Lower Mainland District

There were 3,471 founded IPV files that occurred in the Lower Mainland (LMD) in 2016. Given the large number of jurisdictions with comparatively small numbers of files, the subsequent analyses focused on the municipalities reporting at least 100 founded IPV files in 2016 (see Table 10).

TABLE 10: FOUNDED IPV FILES IN THE LOWER MAINLAND DISTRICT 2016 (N = 3,471)

	Number	% of LMD
Surrey	1,231	35.5%
Burnaby	310	8.9%
Richmond	250	7.2%
Maple Ridge	196	5.6%
North Vancouver	193	5.6%
Coquitlam	191	5.5%
Chilliwack	183	5.3%
Langley	182	5.2%
Mission	145	4.2%
Port Coquitlam	113	3.3%
Sechelt	54	1.6%
Hope	52	1.5%
White Rock	46	1.3%
Whistler	44	1.3%
Squamish	41	1.2%
Gibsons	32	0.9%
Pitt Meadows	31	0.9%
Agassiz	25	0.7%
Mount Currie	23	0.7%
Pemberton	19	0.5%
UBC – Vancouver	12	0.3%
Bowen Island	8	0.2%
Popkum	8	0.2%
Roberts Creek	8	0.2%
Halfmoon Bay	5	0.1%
Boston Bar	4	0.1%
Chilliwack IR	4	0.1%
Cultus Lake	4	0.1%
Harrison	4	0.1%
Garden Bay	3	0.1%
Laidlaw	3	0.1%
Langdale	3	0.1%
Yale	3	0.1%
Anmore	2	0.1%
Chilliwack River Valley	2	0.1%
Egmont	2	0.1%
Madeira Park	2	0.1%
Spuzzum	2	0.1%
Columbia Valley	1	0.0%
D'Arcy	1	0.0%
Harrison Lake	1	0.0%
Lake Errock	1	0.0%
Port Mellon	1	0.0%
Soames Point	1	0.0%
Unknown	*25*	*0.7%*

FOUNDED IPV FILES IN 2016 IN SURREY

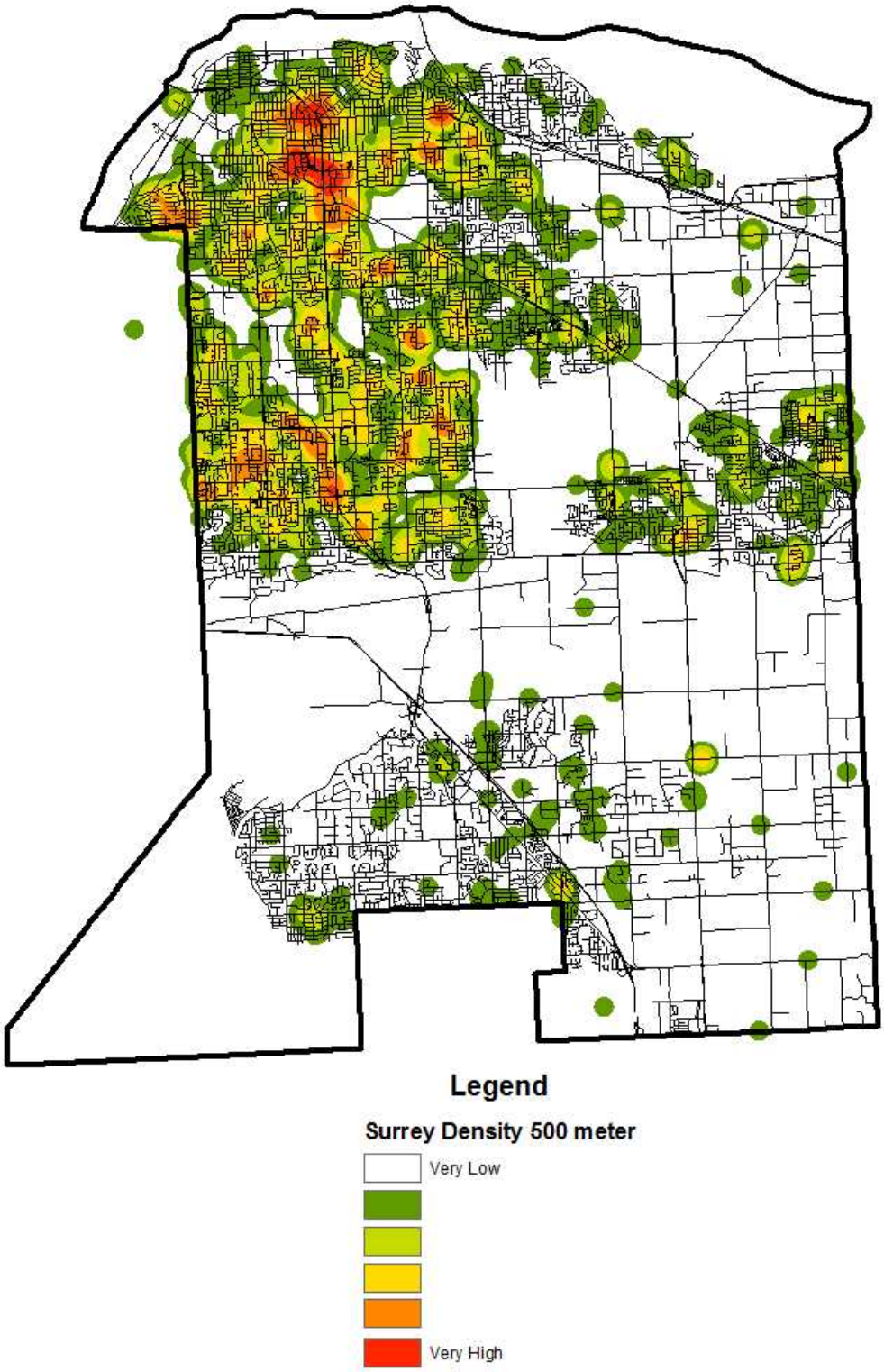
Surrey RCMP managed the largest number of IPV files in the Lower Mainland, representing over one-third of the Lower Mainland district data (n = 1,231). In effect, Surrey RCMP responded to 3.4 intimate partner violence calls for service per day, with 47.3% occurring on Friday, Saturday, and

Sunday with the peak days of the week being Sundays (16.9 per cent) and Saturdays (16.7 per cent). Slightly more than half (52.7 per cent) of the files were reported to the Surrey RCMP between 18:00 and 06:00, as there were several hours during the evening when reporting was more likely to occur. More specifically, 38% of all reports were made between 17:00 hours and 22:00 hours. In terms of the nature of the intimate partner violence, slightly more than two-thirds (68.2 per cent) of the reports were for a common assault, while slightly more than one-tenth (13 per cent) were for assault with a weapon/causing bodily harm. Another 6.9% were in relation to uttering threats against a person. In the vast majority of cases (84.7 per cent) the report resulted in a recommended charge. One in ten (9.5 per cent) files were considered founded, but not cleared, while 4.2% were cleared through departmental discretion, and 1.5% were not proceeded with as the complainant did not want to have a charge laid.

Regarding the offender characteristics, nearly all (87 per cent) of the accused were male, with an average age of 36.9 (range of 13 years old to 88 years old). Almost half (44.7 per cent) of the accused were Caucasian, while nearly one-third (30.2 per cent) were South Asian. Only a small proportion of accused were Aboriginal (5.9 per cent), Black (5.8 per cent), Asian (4.9 per cent), Hispanic (3.7 per cent), Middle Eastern (3.4 per cent), or another ethcnitiy (0.5 per cent). In 40.2% of the founded files, the accused was the spouse of the victim, while in another one-third (34.5 per cent), the accused was a dating partner of the victim. One in five files involved a former partner (14.9 per cent were an ex-boyfriend or girlfriend, while 4.2 per cent were separated or divorced).

As demonstrated in Figure 17, intimate partner violence was generally concentrated in the north-west part of the city. There were a number of hotspots and emerging hotspots in that part of the city, with the largest hotspots found in the area near Surrey City Hall and the Surrey Central Mall along King George Highway extending from 104 Avenue to Fraser Highway and from 132 Street to 138 Street. This hotspot included both commercial and residential areas. Another hotspot was just to the north of the first one, again along King George Highway radiating out from City Parkway and 108 Avenue several blocks in all directions. Like the previous one, this hotspot was a mix of a commerical area and a residential area made up of homes, townhomes, and condominiums. A third hotspot was found in the residential neighbourhood along 150 Street from Raven Place in the north to just south of 107a Avenue and from Oriole Drive to approximately 152 Street. In addition to the many areas that can be defined as emerging hotspots, towards the south, there was also a concentrated hotspot in the residential area between 135 Street and King George Highway and 64 Avenue and 65a Ave.

FIGURE 17: INTIMATE PARTNER VIOLENCE HOTSPOTS IN SURREY



As was the case with many of the municipalities in the Lower Mainland, most of the structural variables were significantly or almost significantly associated with hotspots of intimate partner violence (IPV) in Surrey (see Table 11). The largest effect was in relation to renters, as the proportion of renters in IPV hotspots in Surrey was very high (41.3 per cent) and was more than twice the rate in non-hotspots. Similarly large effects were also evident for median household income, which was 25% lower in hotspots. These two variables, median household income and renters, were significant predictors of IPV hotspots across virtually every jurisdiction in the Lower Mainland. The same was also true for three other variables; namely population density, mobility, and unmarried persons. In Surrey, population density was more than 50% higher in hotspots, which also featured significantly more mobility and persons who are not married. In addition to these five variables, very strong relationships were also found for unemployment and individuals with limited schooling (less than high school education), respectively 40% and 65% greater in hotspots. The effect of limited schooling was greater in Surrey than in any of the other Lower Mainland municipalities. Contrary to expectations, but consistent with the majority of areas, there was a significant positive relationship between immigration rates and IPV; that is, areas with higher percentages of immigrants tended to experience higher levels of IPV. Two other variables, housing condition (requiring major repairs) and Aboriginal population, produced marginally significant results; that is, results that would have been significant were it not for the Bonferroni correction that was applied (see discussion above on project methodology). It is worth noting that the base rates for both factors were very low, and the differences between hotspots and non-hotspots with regard to these variables are probably not substantively important. Two of the remaining variables, population change and labour force participation, were essentially the same in both hotspots and non-hotspots, indicating that these areas cannot be distinguished using these variables. The pattern of non-significant effects for population change and labour force participation was evident across the vast majority of Lower Mainland municipalities. Finally, in Surrey, there was no substantive difference in the proportion of young males in hotspots versus non-hotspots.

TABLE 11: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – SURREY

	Hotspots	Non-Hotspots	t value
Population Density	5,335	3,394	-6.64**
Population Change 2006-2011 (%)	19.9%	18.0%	-0.30
Young Males - Aged 15-24 (%)	7.1%	7.2%	0.41
Unmarried (%)	43.1%	37.9%	-6.25**
Mobility - Last 5 Years (%)	47.9%	39.5%	-5.84**
Immigration (%)	47.5%	37.3%	-8.14**
Aboriginal Population (%)	2.9%	1.7%	-2.55*
Median Household Income ($)	$59,270	$79,320	10.56**
Unemployment Rate	9.1%	6.4%	-4.60**
Labour Force Participation (%)	65.4%	65.1%	-0.34
Less Than High School Education (%)	17.5%	10.5%	-7.21**
Renters (%)	41.3%	20.3%	-11.26**
Housing Condition - Major Repairs (%)	3.3%	1.8%	-2.63*

* $p < .05$; ** $p < .004$

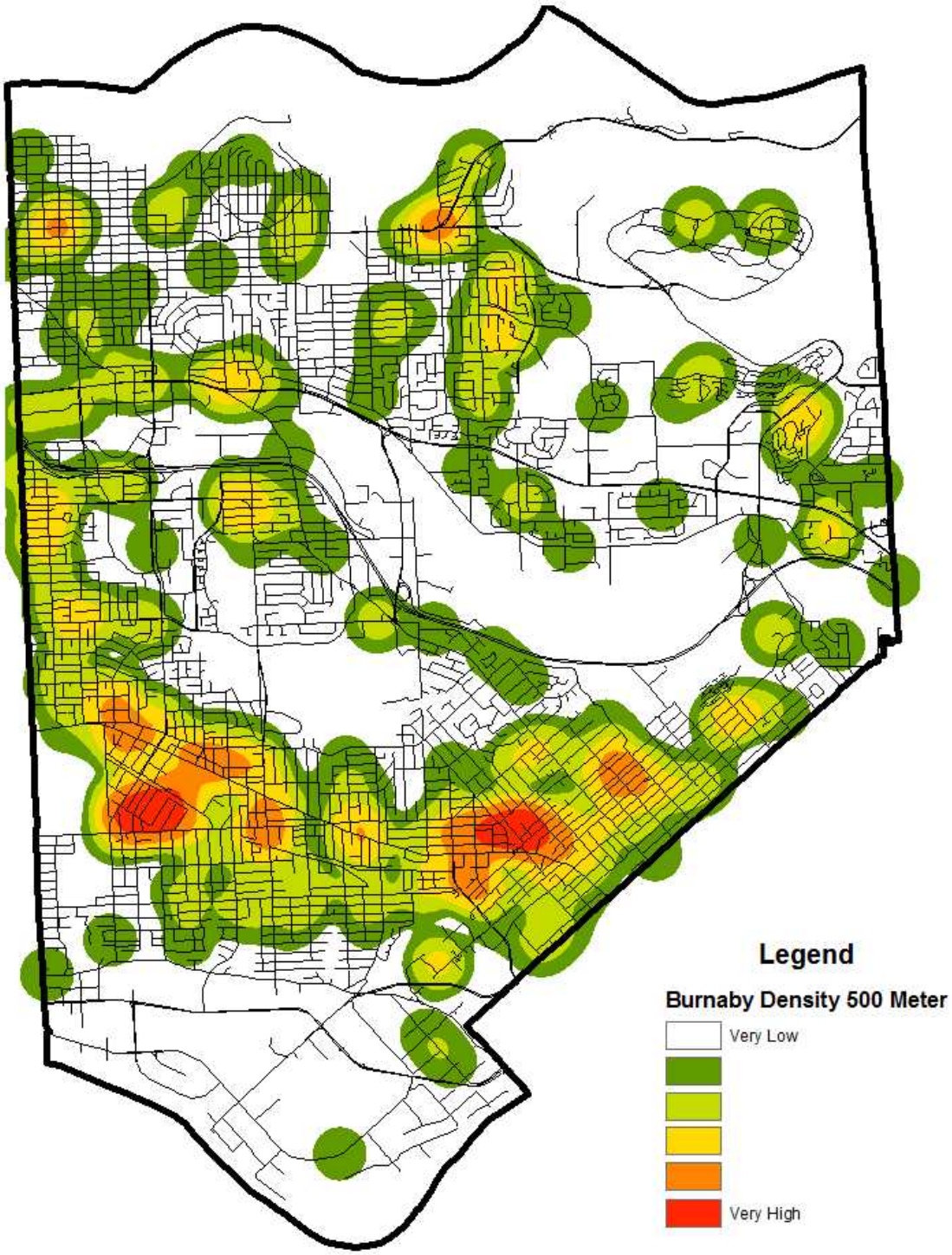
FOUNDED IPV FILES IN 2016 IN BURNABY

A total of 310 files were reported and recorded as founded by the Burnaby RCMP in 2016 or 0.85 intimate partner violence calls for service per day. Generally, there was, on average, 26 founded IPV files reported each month to the Burnaby RCMP with 48.7% occurring on Friday, Saturday, or Sunday. Of note, in 2016, one-fifth (20 per cent) of all files in Burnaby were reported on a Sunday. A majority of files (56 per cent) were reported between 18:00 to 06:00. Similar to Surrey, there was a slight peak in reporting files between 1700 and 2200 (34.2 per cent), while the number of files reported decreased during the early morning hours. Over two-thirds (70.6 per cent) of the files dealt with a common assualt, while nearly one in ten (8.7 per cent) involved an assault with a weapon/causing bodily harm, and 7.4% involved uttering threats. Three-quarters (76.1 per cent) of the cases involved a recommended or laid charge. However, nearly one-quarter of cases (23.2 per cent) involved files that were deemed founded, but not cleared.

Nine out of ten (88.3 per cent) files involved a male accused, with an average age of 37.2 years old (range 15 years old to 85 years old). In total, 42% of the accused in Burnaby were Caucasian, while 17.6% were Asian. Less than one-in-ten were either Aboriginal (9.8 per cent), South Asian (9.4 per cent), Black (7.8 per cent), Middle Eastern (7.8 per cent), or Hispanic (3.9 per cent). The most common relationship status in Burnaby was a dating relationship (40.7 per cent), but, in under one-third of cases (29.6 per cent), the accused was the spouse of the victim. Less than one-quarter (22.6 per cent) involved a former relationship, where the accused was either the former partner in a dating relationship (15.2 per cent) or was separated or divorced (7.4 per cent) from the victim.

As demonstrated in Figure 18, there were two main hotspots for intimate partner violence in Burnaby. The first one was the residential area south of the Metropolis at Metrotown commercial area. More specifically, the hotspot area was from Willingdon Avenue to Dow Avenue between Central Boulevard and Imperial Street. Of note the area around this hotspot for several blocks in all directions was an emerging hotspot as well. There were also emerging hotspots in the areas to the west, east, and north of Metropolis at Metrotown. A second hotspot was found to the east of the first one in the residential area from Salisbury Avenue to Humphries Avenue between Kingsway to Elwell Street. Again, the area surrounding the hotspot was also a high volume area for intimate partner violence.

FIGURE 18: INTIMATE PARTNER VIOLENCE HOTSPOTS IN BURNABY



The most notable predictor of IPV in Burnaby was median household income, which, in hotspot areas, was one-third lower than what it was in non-hotspot areas (see Table 12). Mobility was significantly higher in hotspots, as was the proportion of renters. Like several other municipalities in the Lower Mainland, IPV hotspots showed higher concentrations of immigrant populations; the percentage of immigrants in hotspots was about 20% higher in hotspot areas when compared to the rest of the city. Other highly significant predictors of IPV hotspots included population density (about 2.3 times higher), housing condition (with twice the percentage of housing requiring major repairs), and unmarried persons. The effects of unemployment and young males were marginally significant. Of note, the direction of the latter finding was unanticipated. According to theory, the relationship between young males and crime generally, and violent crime in particular, is expected to be positive; that is, more young males results in high rates of crime. However, Table 12 shows that the proportion of young males in IPV hotspots in Burnaby was actually lower when compared with non-hotspots. This finding is mirrored in several other municipalities. In fact, although the association is not always significant, this pattern of fewer young males in IPV hotspots is consistent across all of the Lower Mainland municipalities. This finding is prevalent only in the Lower Mainland, suggesting an element of IPV that varies by region. For the remainder of the variables, the differences between hotspot and non-hotspot areas were not significant.

TABLE 12: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – BURNABY

	Hotspots	Non-Hotspots	t value
Population Density	11,221	4,773	-5.87**
Population Change 2006-2011 (%)	12.0%	8.1%	-0.67
Young Males - Aged 15-24 (%)	6.5%	7.3%	2.81*
Unmarried (%)	47.0%	42.7%	-5.11**
Mobility - Last 5 Years (%)	52.6%	37.3%	-7.57**
Immigration (%)	56.7%	47.7%	-6.17**
Aboriginal Population (%)	1.1%	0.6%	-1.37
Median Household Income ($)	$48,474	$72,311	9.98**
Unemployment Rate	7.6%	5.9%	-2.11*
Labour Force Participation (%)	63.5%	63.2%	-0.27
Less Than High School Education (%)	7.1%	6.5%	-0.74
Renters (%)	50.7%	27.8%	-6.25**
Housing Condition - Major Repairs (%)	6.9%	3.4%	-3.24**

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN RICHMOND

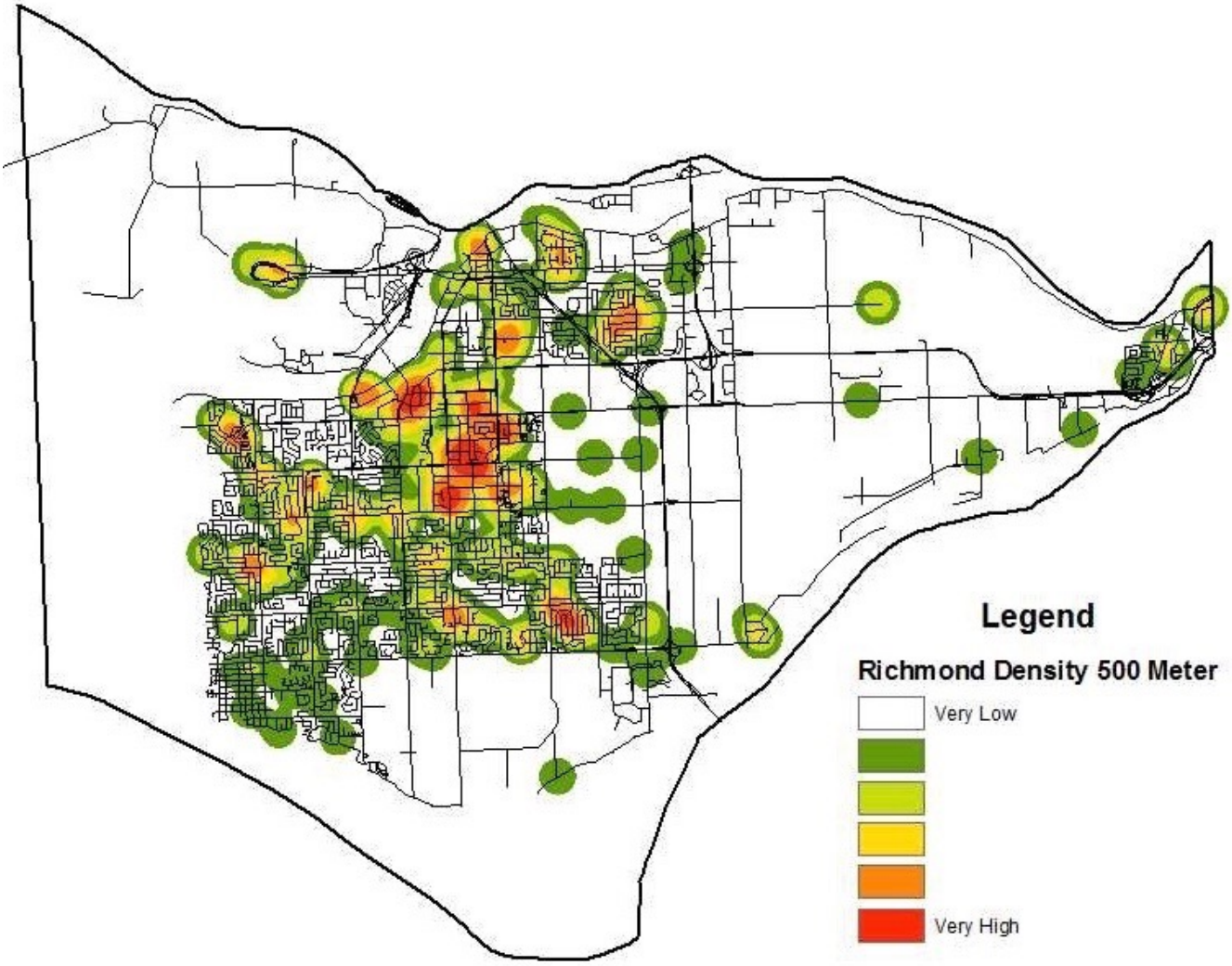
In total, 250 founded IPV files were reported to the Richmond RCMP in 2016, representing an average of nearly 21 files a month or 0.68 per day. In terms of the number of files by day of the week, 46% of all calls for service occurred on Friday, Saturday, or Sunday, with the most common days being Sunday (19.8 per cent), Saturday (16 per cent), and Tuesday (16 per cent). In contrast to the patterns observed in Surrey and Burnaby, a slight majority (51.6 per cent) of files were reported to the Richmond RCMP between 06:00 and 18:00; however, there appeared to be a trend toward mid-day reporting in Richmond, with one-quarter of the files (26 per cent) being reported between noon and 15:59 hours. While the most common UCR code for founded IPV files in

Richmond continued to be a common assault, the proportion of these files was much lower (60 per cent) than in the previous two Lower Mainland municipalities. Consistent with Surrey and Burnaby, the second most common reason for a founded IPV file was an assault with a weapon or causing bodily harm (10.4 per cent). However, there were no IPV files involving threats or intimidation in Richmond in 2016. Unlike the other two jurisdictions, harassing communications (9.6 per cent) and criminal harassment (4.8 per cent) were the other main offences scored in these files. Similar to Burnaby, more than one-fifth (21.2 per cent) of these files were considered founded not cleared, while more than one-third (35.2 per cent) were cleared through departmental discretion. Still, the most common CCJS outcome was a charge laid or recommended, which occurred in four-in-ten cases (43.6 per cent).

The accused in Richmond were generally male (72 per cent), though a large proportion were female (27.9 per cent). The ages of accused ran from 13 years old to 81 years old, with an average age of 37.3 years old. Nearly half of the accused were Asian (40.9 per cent), while less than one-third (29 per cent) were Caucasian, and one-in-ten were South Asian (9.8 per cent). Very few were Black (5.7 per cent), Aboriginal (4.7 per cent), Middle Eastern (4.1 per cent), or Hispanic (3.6 per cent). Typically, the accused was the spouse (47.8 per cent) of the victim, although in over one-quarter (28.1 per cent) the accused and the victim were in a dating relationship. One-fifth (20.2 per cent) were in a former relationship that was either an ex-dating relationship (15.8 per cent) or they were separated or divorced (4.4 per cent) from the victim.

As demonstrated in Figure 19, there were several intimate partner violence hotspots in Richmond. Starting at the North West part of the city, there was a hotspot spreading out from the intersection of Alderbridge Way and Elmbridge Way to the area north of Lansdowne Road to Westminster Highway and from Gilbert Road to Minoru Boulevard. Surrounding this area was an emerging hotspot as well. There were four hotspots that were enclosed by a larger area of high volume at the center of the city. In effect, the area from Lansdowne Road in the north to Blundell Road in the south and from Minoru Boulevard in the west to Ash Street and Alder Street in the east can be considered a hotspot or a high volume area for intimate partner violence in Richmond. Finally, to the southeast of this large area, another hotspot was found.

FIGURE 19: INTIMATE PARTNER VIOLENCE HOTSPOTS IN RICHMOND



The pattern of results for Richmond was very much akin to those found in Surrey and Burnaby. Similar to Burnaby, median household income was the most important predictor of variations in IPV across hotspot and non-hotspot areas (see Table 13). IPV hotspots in Richmond also showed significantly higher levels of mobility, unmarried persons, renters, and population density. And, as with Surrey and Burnaby, Richmond also demonstrated a significant effect for immigration, which was about 20% higher in the hotspots. Like Surrey, both unemployment and persons with lower levels of education were also higher in hotspots. Finally, Richmond was the only Lower Mainland municipality where population change was a (marginally) significant predictor of IPV; the level of change was more than four-and-a-half times greater in hotspots. In contrast to Surrey and Burnaby, housing conditions did not vary substantially between hotspots and non-hotspots in Richmond. No statistical differences were found for labour force participation, young males, or Aboriginal population.

TABLE 13: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – RICHMOND

	Hotspots	Non-Hotspots	t value
Population Density	7,409	4,126	-4.86**
Population Change 2006-2011 (%)	17.3%	3.7%	-2.68*
Young Males - Aged 15-24 (%)	7.2%	7.4%	0.64
Unmarried (%)	42.0%	38.3%	-6.24**
Mobility - Last 5 Years (%)	48.0%	36.3%	-6.04**
Immigration (%)	64.7%	53.8%	-5.86**
Aboriginal Population (%)	0.5%	0.4%	-0.13
Median Household Income ($)	$55,432	$76,231	7.70**
Unemployment Rate	7.1%	4.6%	-3.80**
Labour Force Participation (%)	60.5%	61.9%	1.08
Less Than High School Education (%)	8.5%	5.8%	-3.24**
Renters (%)	26.3%	12.9%	-5.38**
Housing Condition - Major Repairs (%)	5.1%	3.4%	-1.68

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN MAPLE RIDGE

In total, 196 founded intimate partner violence files were opened in Maple Ridge in 2016, meaning an average of approximately 16 founded files were reported each month or one every two days. Friday, Saturday, and Sunday accounted for a slight majority (52.6 per cent) of all files, with the most common days being Friday (17.9 per cent) and Sunday (17.9 per cent). There was also a slight tendency towards files being reported during daytime hours, as 53.1% were reported between 06:00 and 18:00.

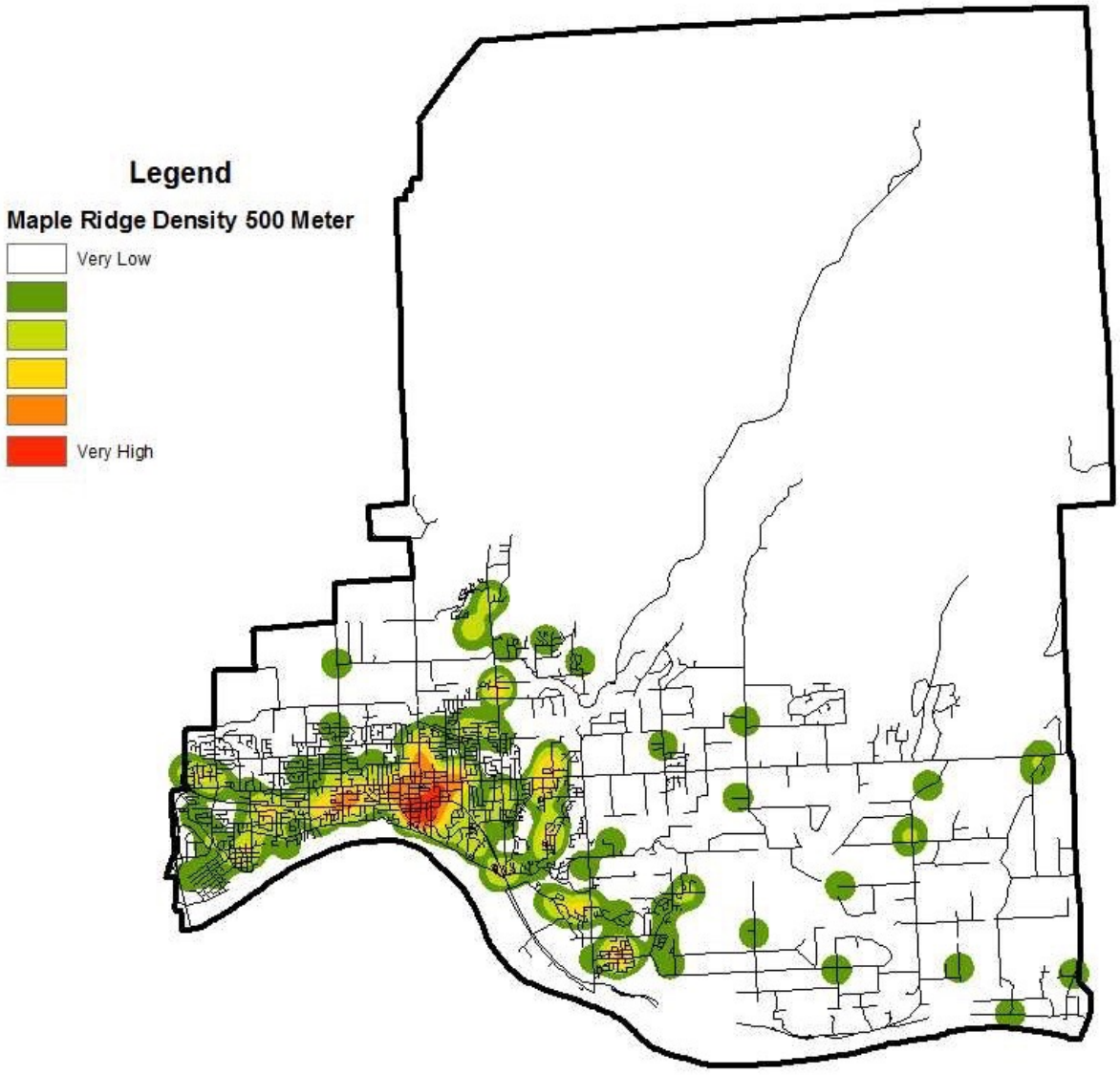
Interestingly, less than two-thirds (59.2%) of the founded IPV files in Maple Ridge were assigned a common assault UCR. In contrast, compared to the previous municipalities, Maple Ridge appeared to have a higher proportion of files assigned with harassment related UCR codes, as one-in-ten (10.2%) founded IPV files were considered Harassing Communications, while another one-in-ten (9.7%) were defined as Uttering Threats Against a Person. The fourth most common UCR code was assault with a weapon or causing bodily harm (8.2%) with an additional 6.1% being Criminal Harassment files. All other file types (e.g. assaults – other, sexual assault, voyeurism) composed less than 2% each of the remaining files. A relatively large number of founded IPV files in Maple Ridge were considered founded not cleared (26 per cent), and only slightly more than half (54.1 per cent) resulted in a recommended charge. Another one-tenth (11.2 per cent) were cleared through departmental discretion, while 8.7% were closed due to the complainant not wanting to lay charges.

About one-fifth (21.4 per cent) of accused in Maple Ridge were female. Generally, the accused were males (78.6 per cent) of Caucasian ethnicity (86.1 per cent) who were, on average, 39.2 years old. Overall, the accused ranged in age from 15 years old to 76 years old. A very small proportion of accused were Aboriginal (4.9 per cent), South Asian (2.8 per cent), Black (2.8 per cent), Asian (1.4 per cent), or Hispanic (1.4 per cent). The victim-offender relationship was distributed fairly evenly between the three main categories. In just under one-third of files, the victim and offender were either in a current dating relationship (31.9 per cent) or a current marital relationships (29.3 per

cent), while in another one-quarter (25.1 per cent), the victim and offender were former dating partners. Another one-in-ten (8.9 per cent) files involved former spouses.

As demonstrated in Figure 20, there was one main intimate partner violence hotspot. The area was the residential neighbourhood from 227 Street in the east to 222 Street in the west and from the area north of Haney Bypass to the area just south of Dewdney Trunk Road. Of note, this area was surrounded by a much larger emerging hotspot that covered the area from 122 Avenue in the north to 221 Street in the west and from 228 Street to the east.

FIGURE 20: INTIMATE PARTNER VIOLENCE HOTSPOTS IN MAPLE RIDGE



The pattern of results for Maple Ridge was very similar to other Lower Mainland municipalities. The largest recorded effect in Maple Ridge was in relation to unmarried persons, slightly edging out the effect of median household income (see Table 14). Other variables that were significantly different in hotspots in Maple Ridge included the "usual suspects"; namely population density, renters, mobility, and unemployment. Contrary to the municipalities that have been profiled thus far, there was a moderately strong effect demonstrated by young males. As was the case with Burnaby, the proportion of the population comprised of young males was *lower* in IPV hotspots. But, the effect was more pronounced in Maple Ridge. Maple Ridge also diverged from many of the other municipalities with regard to the effect of immigration. Specifically, it was one of the few jurisdictions where immigration was associated with IPV hotspots. It is worth noting that, among the jurisdictions sampled here, Maple Ridge was characterized by a comparatively low level of immigration. What makes this notable is the fact that the similar "insignificant" results for immigration were, as will be discussed below, also displayed in Chilliwack and Mission, the other two cities with the lowest levels of immigration. This finding suggests that the effect of immigration is probably not straightforward, and that other factors, such as the overall level of immigration, must also be taken into account when trying to explain the effect of immigration on IPV. Like Richmond, there were no substantial differences in housing conditions between hotspots and non-hotspots. And, once again, population change, labour force participation, and Aboriginal population were also unrelated to neighborhood levels of IPV.

TABLE 14: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – MAPLE RIDGE

	Hotspots	Non-Hotspots	t value
Population Density	3,558	1,991	-4.55**
Population Change 2006-2011 (%)	9.3%	5.2%	-0.63
Young Males - Aged 15-24 (%)	6.1%	7.7%	3.83**
Unmarried (%)	51.8%	38.5%	-5.49**
Mobility - Last 5 Years (%)	49.2%	35.0%	-3.47**
Immigration (%)	16.3%	16.9%	0.39
Aboriginal Population (%)	3.5%	2.5%	-1.16
Median Household Income ($)	$55,396	$80,238	5.39**
Unemployment Rate	8.1%	4.7%	-2.93**
Labour Force Participation (%)	63.5%	70.2%	1.87
Less Than High School Education (%)	10.7%	6.5%	-2.07*
Renters (%)	34.4%	10.9%	-4.30**
Housing Condition - Major Repairs (%)	5.8%	2.1%	-1.97

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN NORTH VANCOUVER

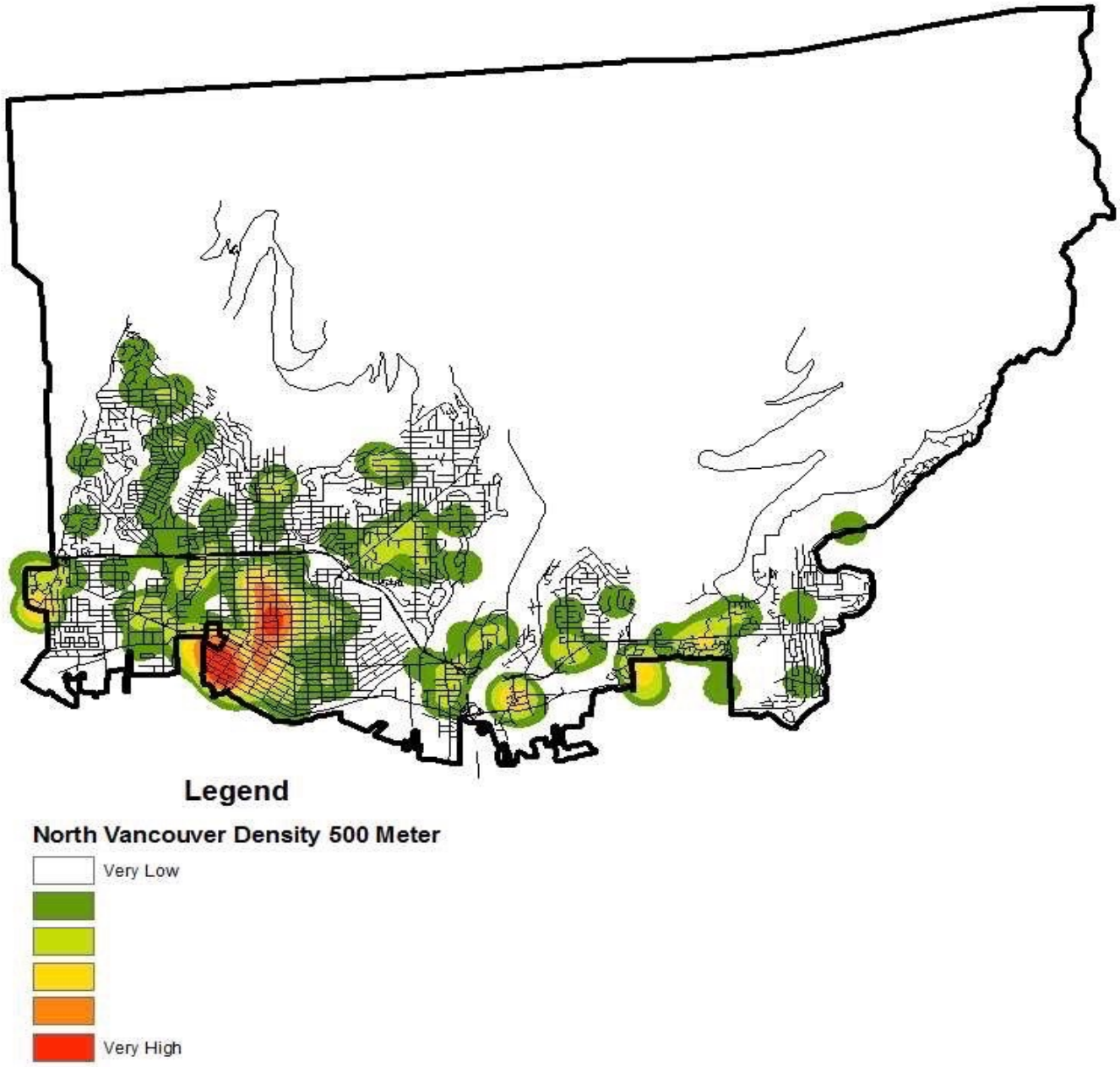
In total, 193 founded IPV files were reported in North Vancouver in 2016. On average, there was 16 files reported each month or one file every two days. Again, there was a tendency for IPV files to be reported on weekends with Friday, Saturday and Sunday accounting for 53.4% of files, with the most common day being Sunday (20.2 per cent). Reporting of IPV was nearly equally split between 06:00 and 18:00 (50.3 per cent) and 18:00 to 06:00 (49.7 per cent). Over two-thirds (70.5 per cent) of the founded IPV files in North Vancouver were scored as a common assault. The next most

common UCR was an assault with a weapon or causing bodily harm (10.4 per cent). Few files were scored as threats (5.7 per cent) or harassment (3.6 per cent). A large proportion of founded files resulted in a recommended or laid charge (85.0 per cent), and only one-in-ten (8.8 per cent) were considered founded not cleared. Another 4.7% were cleared through department discretion, and only 2 (1%) were considered closed due to the complainant not wanting to proceed with charges.

Nearly one-quarter (23.3 per cent) of the accused in North Vancouver were female. Still, the overall profile of an accused in North Vancouver was a 39 year old (range of 16 years old to 76 years old) Caucasian (55.2 per cent) male (76.7 per cent). Aboriginal accused made up another one-fifth (18 per cent) of the sample, while another 15.7% of accused were of Middle Eastern ethnicity. Very few accused were identified as Asian (4.7 per cent), Black (4.7 per cent), or South Asian (1.7 per cent). Nearly half (42.8 per cent) of the relationships involved a couple who were currently dating, while a little over one-third (36.4 per cent) involved current spouses. Only one-in-ten (9.8 per cent) files involved a former dating couple, and 4% were former spouses. 7% of relationships were defined as "other".

As demonstrated by Figure 21, there were two main hotspots for intimate partner violence in North Vancouver. The northern hotspot was from Lonsdale Ave to just east of St. Georges Avenue and from 16th Street to 12th Street, which is an area characterized by many apartment and condominium buildings. The larger hotspot included the residential area from 5th Street West in the north to Carrie Cates Crescent in the south and between Forbes Avenue in the west and Lonsdale Avenue in the east. Again, both of these hotspots were surrounded by a slightly larger area of high volume for intimate partner violence files.

FIGURE 21: INTIMATE PARTNER VIOLENCE HOTSPOTS IN NORTH VANCOUVER



In many respects, the results of the hotspot analyses for North Vancouver were similar to those of both Surrey and Chilliwack. For example, like Surrey, the variable that showed the largest effect size was the proportion of renters (see Table 15). In fact, the percentage of renters in North Vancouver hotspots (56.1 per cent) was the highest of all the municipalities, with the exception of Chilliwack. And, like Surrey, the second strongest effect was for median household income, which was almost 40% lower in hotspot neighborhoods. Again, only Chilliwack, at over 50%, had a greater disparity between incomes in hotspots versus non-hotspots. Extremely high levels of mobility also

characterized North Vancouver hotspots, as did proportions on unmarried persons. Population density was higher in North Vancouver hotspot areas than in those found in any other municipality, while the relative effect of young males was stronger in North Vancouver than in any other municipality. Simply put, some of the largest bivariate effects in this study were present in North Vancouver. Only three variables failed to achieve significance, and those are the three that were routinely ineffective as predicting hotspots; population change, labour force participation, and Aboriginal population.

TABLE 15: COMPARISON OF INTIMATE PARTNER VIOLENCE AND NON-HOTSPOTS – NORTH VANCOUVER

	Hotspots	Non-Hotspots	t value
Population Density	**11,376**	**3,318**	**-9.28****
Population Change 2006-2011 (%)	**7.3%**	**2.6%**	**-1.16**
Young Males - Aged 15-24 (%)	**5.1%**	**6.9%**	**5.81****
Unmarried (%)	**52.7%**	**39.5%**	**-9.22****
Mobility - Last 5 Years (%)	**56.3%**	**33.6%**	**-9.88****
Immigration (%)	**40.0%**	**31.0%**	**-4.53****
Aboriginal Population (%)	**1.1%**	**0.8%**	**-0.87**
Median Household Income ($)	**$55,605**	**$90,545**	**10.03****
Unemployment Rate	**6.4%**	**3.9%**	**-2.90****
Labour Force Participation (%)	**71.0%**	**68.1%**	**-1.57**
Less Than High School Education (%)	**3.5%**	**1.5%**	**-2.66***
Renters (%)	**56.1%**	**18.9%**	**-11.19****
Housing Condition - Major Repairs (%)	**6.8%**	**4.0%**	**-2.30***

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN COQUITLAM

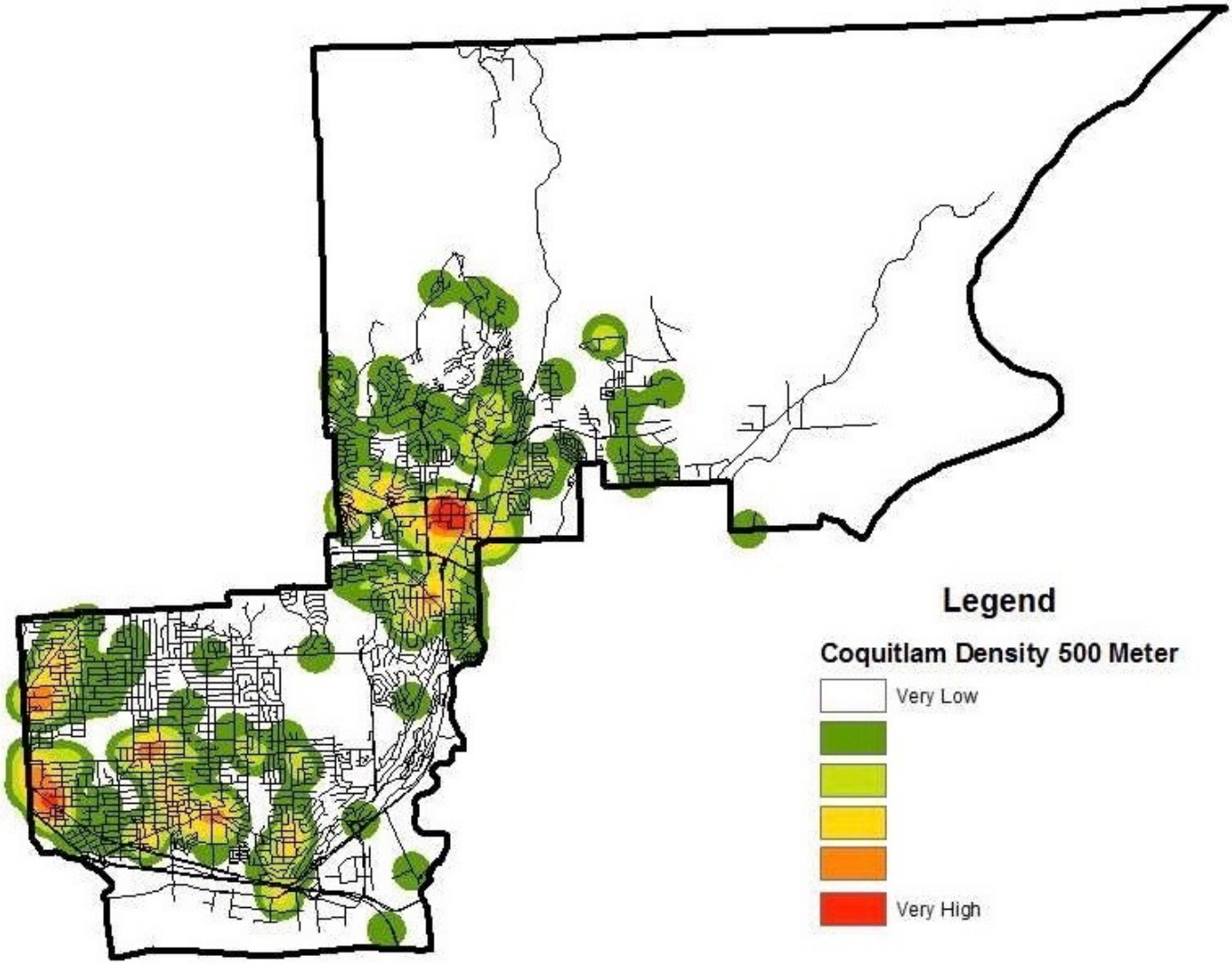
In 2016, there was a total of 191 founded IPV files were reported in Coquitlam. There were an average of 15.9 files reported each month or a daily average of 0.52 files per day. In Coquitlam, a minority of files (45.5 per cent) were generated on Friday, Saturday, and Sunday. Once again, Sundays (17.8 per cent) were the most common days of the week for IPV files. Similar to North Vancouver, file reporting was generally split equally between the day (49.2 per cent) and the evening and early morning (50.8 per cent); however, there was a slight tendency for file reporting to occur between 19:00 and 21:59 (22.0 per cent). While the most common file type in Coquitlam was a common assault, the proportion of files with this UCR score was slightly lower here than in many of the other municipalities (57.1 per cent). In contrast, there was a slightly higher percent of assaults with a weapon or assaults causing bodily harm (13.6 per cent). In addition, 12% of founded IPV files in Coquitlam involved some form of harassment. Nearly three-quarters of all files (71.7 per cent) reflected that a charge had been recommended or laid against the accused. Still, a very high percentage (27.2 per cent) were recorded as founded not cleared.

Four-fifths (81.3 per cent) of the accused in Coquitlam were male, and over half (57.8 per cent) were Caucasian. Another 14.8% of the accused were of Middle Eastern ethnicity. Less than one-in-ten accused were of either Asian (8.1 per cent), Black (5.2 per cent), South Asian (4.4 per cent), Aboriginal (4.4 per cent), or Hispanic (4.4 per cent) ethnicity. The accused ranged in age between

14 years old and 76 years old, with the average being 36.9 years of age. A little over one-third (36.1 per cent) of the accused were in a current spousal relationship with the victim, while another one-third (33.5 per cent) were in a current dating relationship. One-fifth (20.9 per cent) were in a former dating relationship, while very few (2.5 per cent) were in a former marital relationship. 7% were considered in an "other" type of relationship.

As demonstrated by Figure 22, Coquitlam had two main hotspots for intimate partner violence files. The first and larger hotspot was from Guildford Way in the north to just south of Northern Avenue in the south and from Pinetree Way in the east to east of Johnson Street in the west, which is a mix of commercial businesses and apartment and condominium buildings. The second hotspot emanated from the southwest part of the city along Lougheed Highway east of North Road and west of Guilby Street and south of Rochester Avenue, which has a residential area on the northern side of Lougheed Highway and commercial businesses to the south.

FIGURE 22: INTIMATE PARTNER VIOLENCE HOTSPOTS IN COQUITLAM



The results for Coquitlam, displayed in Table 16, were virtually identical to those presented above for North Vancouver. The median household income, which was more than 30% lower in IPV hotspots, and the proportion of renters, which was over twice are large in those same hotspots, were once again significant predictors. The other predictors with the biggest effects sizes were unmarried persons and mobility, which were nearly 25% and 50% higher respectively in Coquitlam hotspots compared to the non-hotspots. In keeping with the well-established pattern of findings for the Lower Mainland, population density, immigration, and housing condition were similarly significant factors. As well, the effect recorded for limited schooling was more pronounced in Coquitlam than in any other municipality in the Lower Mainland. Finally, young males and unemployment were marginally significant factors in differentiating hotspots from non-hotspots.

TABLE 16: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – COQUITLAM

	Hotspots	Non-Hotspots	t value
Population Density	5,854	3,452	-3.28**
Population Change 2006-2011 (%)	16.2%	8.5%	-1.06
Young Males - Aged 15-24 (%)	6.9%	7.8%	2.09*
Unmarried (%)	48.2%	38.6%	-5.95**
Mobility - Last 5 Years (%)	50.9%	34.5%	-5.35**
Immigration (%)	45.0%	38.0%	-3.39**
Aboriginal Population (%)	1.4%	1.4%	-0.04
Median Household Income ($)	$57,376	$84,277	6.67**
Unemployment Rate	7.3%	5.3%	-2.12*
Labour Force Participation (%)	67.3%	67.8%	0.30
Less Than High School Education (%)	6.8%	4.0%	-3.58**
Renters (%)	37.1%	16.4%	-4.27**
Housing Condition - Major Repairs (%)	5.7%	2.5%	-3.09**

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN CHILLIWACK

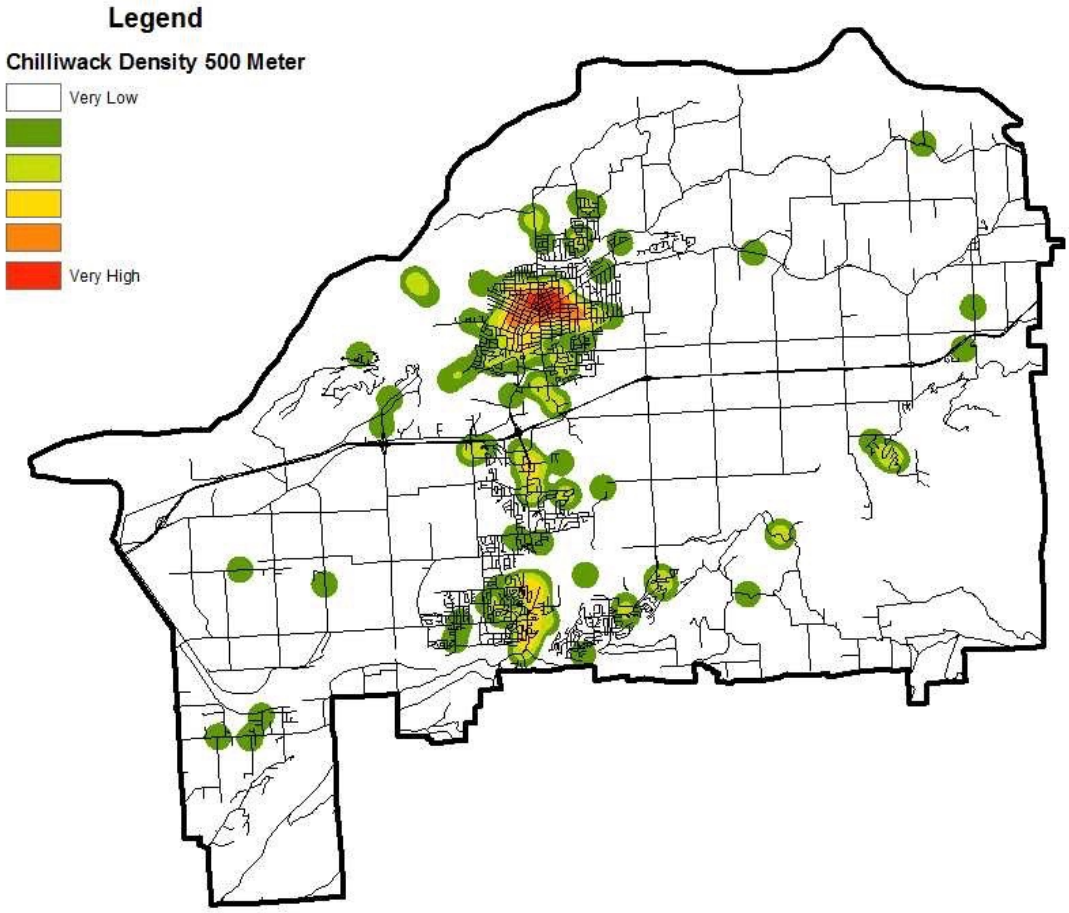
In 2016, 189 founded IPV files were reported to the Chilliwack RCMP. This accounted for 15.8 files per month or one file every second day. Of note, a minority of files (42.9 per cent) were generated on Friday, Saturday, or Sunday. However, unlike the other municipalities examined thus far, Monday (17.5 per cent) was the most common day for reporting intimate partner violence followed by Sunday (16.9 per cent). Overall, a slightly higher percentage (51.9 per cent) of files were reported between 18:00 to 06:00 than between 06:00 and 18:00 (48.1 per cent). Two-thirds (65.6 per cent) of founded IPV files in Chilliwack in 2016 were scored as a common assault. A higher percentage of files in Chilliwack as compared to the previously reviewed municipalities were for assault with weapon or causing bodily harm (17.5 per cent). A small number of files were coded as harassment related, with 8.5% of files scored as an uttering threats against a person, 2.1% as criminal harassment, and 0.5% as harassing communications. A large percentage of files were recorded as resulting in a recommended or laid charge against the accused (85.2 per cent). It was

uncommon for files to be considered founded not cleared (7.9 per cent), and less than one in twenty (4.2 per cent) were cleared by departmental discretion.

Eight of ten (79.9 per cent) of files involved a male accused, and nearly three quarters (71.1 per cent) involved Caucasian accused. There was also a large proportion of files involving Aboriginal accused in Chilliwack (23.7 per cent). Very few files involved an accused from other ethnic backgrounds (Black 2.3 per cent, South Asian 1.7 per cent, Hispanic and Middle Eastern 0.6 per cent each). The ages of the accused ran from 17 years old to 74 years old, and the average age being 37 years old. There were two main types of relationship categories involved in IPV in Chilliwack. Three-quarters (74.6 per cent) of cases involved a current intimate relationship; 39.2% of files involved a current dating partnership, while 35.4% involved a current spousal relationship. Another 17.1% occurred between a formerly dating couple, and only 5% occurred between a formerly married couple.

As demonstrated in Figure 23, there was one main hotspot for intimate partner violence in Chilliwack in 2016. Like the other municipalities, this hotspot was surrounded by a larger region of high volume intimate partner violence files; however, the specific hotspot area stretched from Reece Avenue in the north to Princess Avenue in the south and from Cook Street in the west to Williams Street in the east, which is a residential area.

FIGURE 23: INTIMATE PARTNER VIOLENCE HOTSPOTS IN CHILLIWACK



As alluded to earlier, Chilliwack featured some of the starkest differences in the Lower Mainland. For example, the median household income in IPV hotspots in Chilliwack was less than half of what it was in non-hotspots (see Table 17). This disparity was well above the figure of 38% shown in the municipality with the second highest difference, North Vancouver. Moreover, the actual level of median incomes in Chilliwack hotspots of about $32,000 was by far the lowest of the Lower Mainland municipalities, as the next closed figure was $48,000 in Burnaby, a full one-third higher. In a similar vein, the level of renters was also greatest in Chilliwack hotspots (60 per cent); only North Vancouver was even above 50%. The proportion of renters in Chilliwack hotspots was more than three times the level found in its non-hotspot areas. And, the distinction between unmarried persons, which was also more than 50% higher in hotspot neighborhoods, dwarfed the figures noted in all other Lower Mainland municipalities. The results found in Chilliwack were anomalous in other ways as well. On the one hand, it was the only municipality that produced a significant effect for labour force participation, and it was also one of rare municipalities for which Aboriginal population was even marginally significant. On the other hand, it was one of the few municipalities that failed to demonstrate significant findings for limited education or immigration.

TABLE 17: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – CHILLIWACK

	Hotspots	Non-Hotspots	t value
Population Density	4,247	1,763	-5.48**
Population Change 2006-2011 (%)	4.9%	10.5%	0.77
Young Males - Aged 15-24 (%)	6.6%	6.9%	0.61
Unmarried (%)	58.5%	38.3%	-9.71**
Mobility - Last 5 Years (%)	59.4%	42.3%	-3.92**
Immigration (%)	9.9%	12.9%	1.86
Aboriginal Population (%)	13.1%	6.6%	-2.72*
Median Household Income ($)	$32,024	$65,509	9.43**
Unemployment Rate	10.9%	4.7%	-2.48*
Labour Force Participation (%)	50.8%	64.9%	4.46**
Less Than High School Education (%)	16.3%	12.4%	-1.38
Renters (%)	59.6%	17.9%	-8.91**
Housing Condition - Major Repairs (%)	9.9%	3.4%	-2.63*

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN LANGLEY

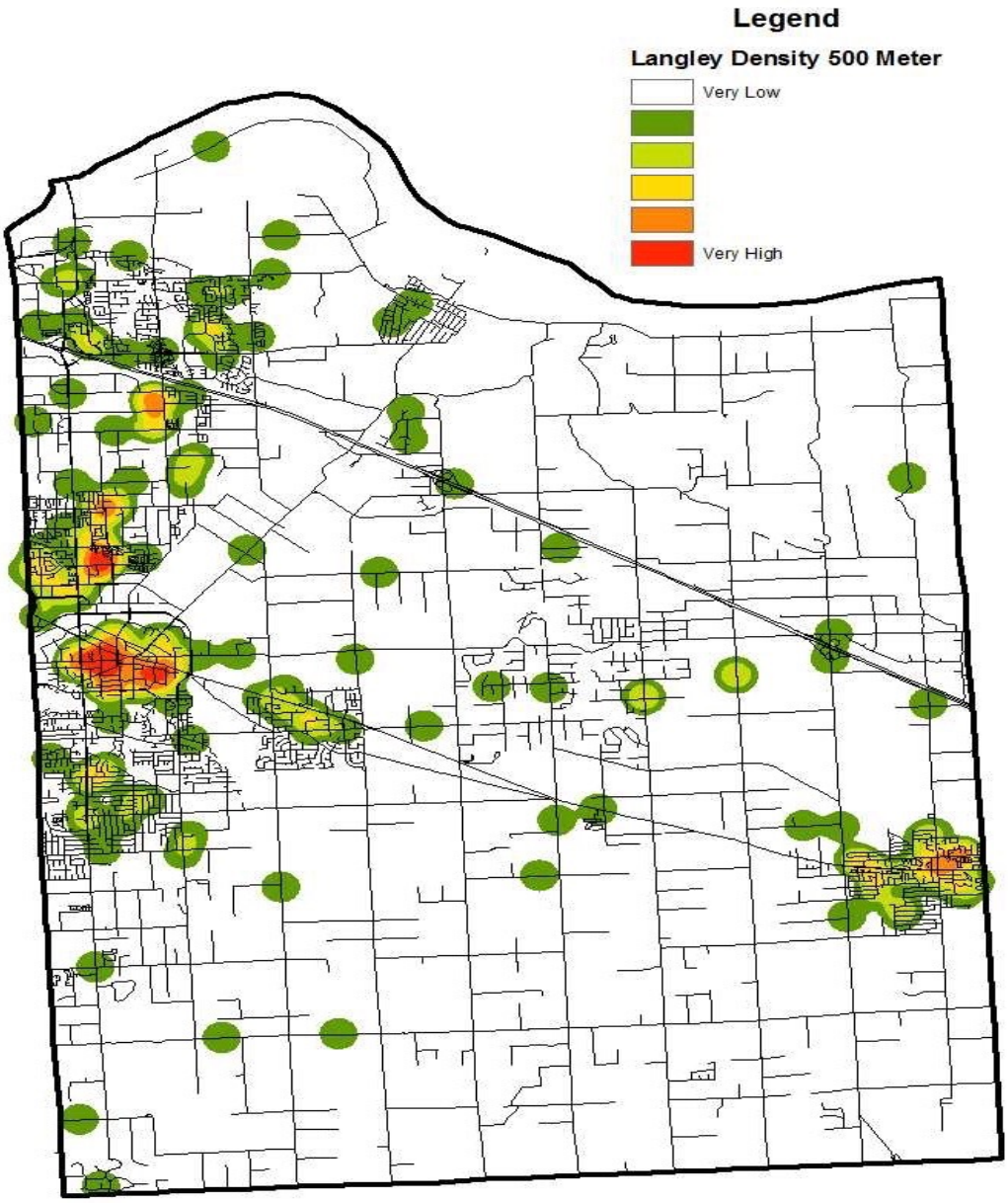
There were 182 founded IPV files reported to the Langley RCMP Detachment in 2016. This accounted for, on average, 15.2 files each month or approximately one file every two days. The IPV reporting patterns in Langley differed from many other municipalities in that there was not a clear trend towards weekend reporting. Interestingly, Friday, Saturday, and Sunday accounted for just 40.7% of all intimate partner violence files, and the most common day for reporting was Monday (17.6 per cent). In terms of the time of day, a majority (54.4 per cent) of files were reported to the Langley RCMP between 06:00 and 18:00.

Over two-thirds (69.8 per cent) of the founded IPV files in Langley involved a common assault. There was also a comparatively high percentage of assault with a weapon or assault causing bodily harm (13.2 per cent). Conversely, there were few harassment related files (9.3 per cent). Specifically, 4.4% of files were considered uttering threats against a person, 2.7% were considered criminal harassment, and 2.2% were considered harassing communications. A large percentage of the files reported in 2016 were cleared by charge (85.7 per cent either recommended or laid). One-tenth (9.3 per cent) were considered founded not cleared. A slightly higher percentage involved a complainant who would not lay a charge (2.7 per cent) as compared to files cleared by departmental discretion (2.2 per cent).

Compared to some of the other jurisdictions reviewed in the Lower Mainland, a smaller percentage of accused were female (15.2 per cent). Most of the accused in Langley were Caucasian (78.2 per cent). The rest of the accused were made up of small numbers of South Asian (6.1 per cent), Aboriginal (3.6 per cent), Black (3.6 per cent), Hispanic (2.4 per cent), Middle Eastern (2.4 per cent), or Asian (1.8 per cent) ethnicities. The accused ranged in age from 13 years old to 71 years old, and were, on average, 37 years old. Equal numbers of accused were involved in a current dating (40.1 per cent) or a marital (39 per cent) relationship with the victim, while another one-tenth (12.8 per cent) were formerly dating the victim. In total, 7% were involved in an "other" kind of relationship with the victim.

In terms of the intimate partner violence hotspots, as demonstrated by Figure 24, there were two main hotspots in Langley, both in the western part of the city that borders with Surrey. More specifically, there was a larger area with a large number of intimate partner violence files that comprised two distinct hotspots, but one larger area. This hotspot area was mainly south of Fraser Highway in the residential area between 200th Street and 208th Street to 53 Avenue in the south. To the north of this area, another hotspot was found between 65 Avenue and 68 Avenue and from 201 Street to 203 Street. To the north of this hotspot an emerging hotspot was found that spread out for a few blocks from Jericho Road and 202b Street, which is mainly a residential area with homes and condominiums.

FIGURE 24: INTIMATE PARTNER VIOLENCE HOTSPOTS IN LANGLEY



The findings for Langley, presented in Table 18, are generally the same as those found for the previous municipalities. However, because of the multiple test (Bonferroni) correction, several otherwise significant results were instead characterized as marginally significant. All of the "big 5" predictors of IPV hotspots, namely median household income, renters, population density, mobility, and unmarried persons, were confirmed in Langley. Compared with the other municipalities, the effect sizes for these factors might best be characterized as "middle of the road." In contrast, the effect of the remaining variable that was fully significant, young males, was quite large in Langley, second in size only to North Vancouver. Of note, as with all other municipalities, the direction of the effect for young males was contrary to what was posited by theory. Of the five other variables that were found to be marginally significant, namely immigration, unemployment, labour force participation, limited schooling, and housing condition, some of them, nonetheless, displayed notable differences. For example, proportionately, the 20% difference between immigration in hotspots versus non-hotspots in Langley was the highest of all the municipalities in the Lower Mainland. As well, unemployment was more than twice as high in hotspots compared to non-hotspots. Finally, there is a statistically anomalous finding in Langley that merits some comment. The disparity between population change in hotspot and non-hotspot areas was enormous. Specifically, at 25%, the rate of change in Langley hotspots far exceeded other municipalities, even those of Surrey, Richmond, and Burnaby, municipalities more commonly associated with massive population growth. Still, despite the large difference, the effect of population change was not significant. The reason for this has to do with the way t-tests are calculated. Suffice to say that this is an instance where "substantive effects" are probably more important than "statistical significance."

TABLE 18: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – LANGLEY

	Hotspots	Non-Hotspots	t value
Population Density	4,275	1,944	-4.03**
Population Change 2006-2011 (%)	25.2%	1.9%	-1.11
Young Males - Aged 15-24 (%)	5.5%	7.1%	4.87**
Unmarried (%)	48.2%	37.5%	-5.09**
Mobility - Last 5 Years (%)	56.1%	36.0%	-5.88**
Immigration (%)	20.4%	15.6%	-2.54*
Aboriginal Population (%)	3.9%	2.8%	-1.37
Median Household Income ($)	$59,575	$81,499	4.94**
Unemployment Rate	7.9%	3.8%	-2.98*
Labour Force Participation (%)	64.5%	70.6%	2.38*
Less Than High School Education (%)	11.7%	7.5%	-2.79*
Renters (%)	34.0%	12.6%	-5.10**
Housing Condition - Major Repairs (%)	3.7%	1.5%	-2.07*

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN MISSION

There were 145 founded IPV files in Mission in 2016. This translated to 12 files per month or 0.4 files per day. Again, similar to the pattern observed for Langley, file reporting was slightly less likely to occur over the weekend in Mission, as Friday, Saturday, and Sunday accounted for 40.7% of all intimate partner violence files. In fact, in Mission, the peak day of the week for reporting intimate

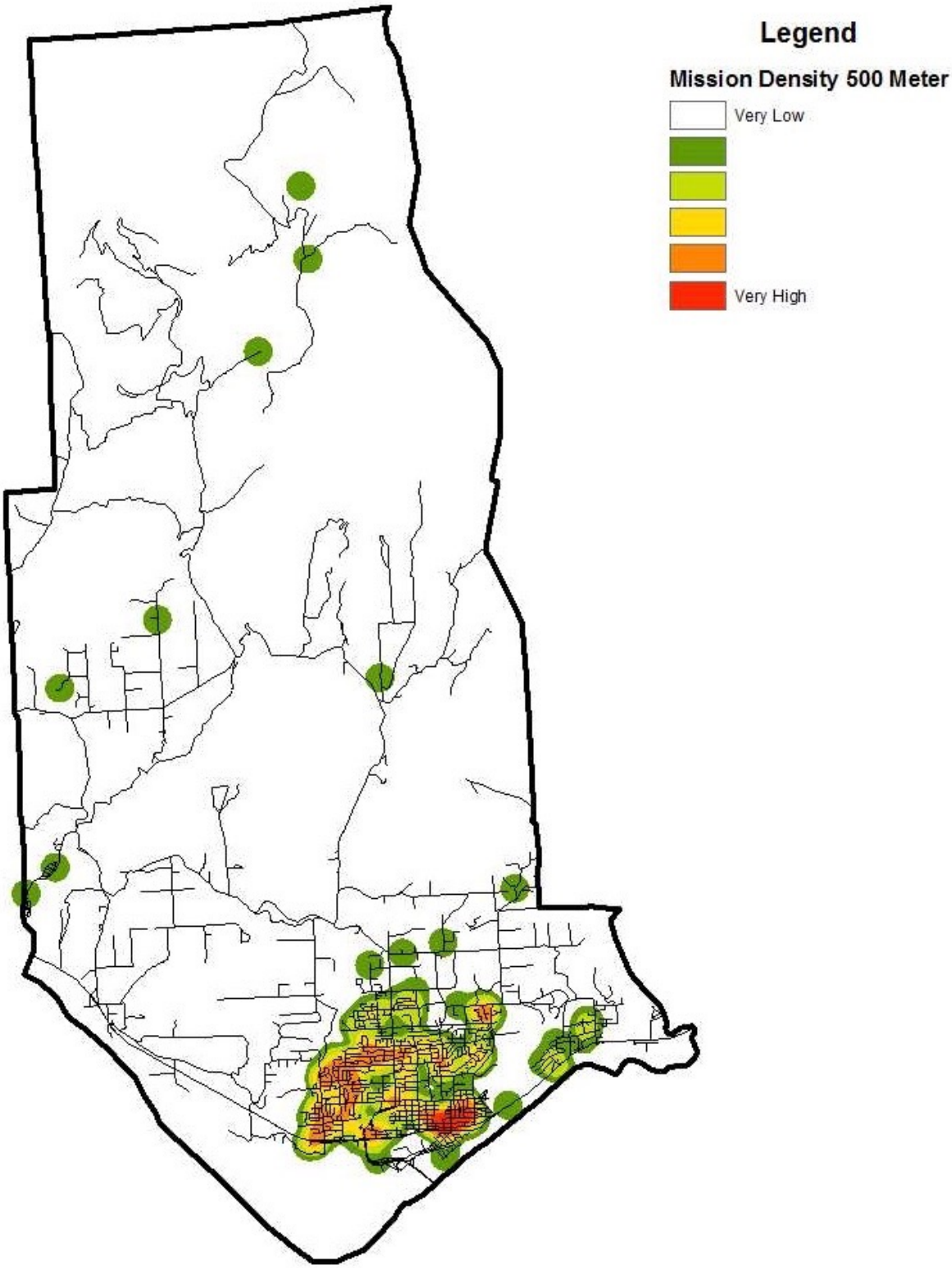
partner violence to the RCMP was Wednesday (17.9 per cent). The majority (54.5 per cent) of files were reported to the Mission RCMP during the evening hours between 18:00 and 06:00. The most common time for an IPV file to be reported in Mission was 23:00 hours (7.6 per cent) followed closely by the two-hour period between 20:00 and 21:59 (6.9 per cent for each hour).

Nearly three-quarters (71 per cent) of the files in Mission involved a common assault. Approximately one-in-ten (9.0 per cent) were classified as an assault with a weapon or an assault causing bodily harm. Approximately 15% of files were harassment related, with 7.6% of files scored as uttering threats against a person, 4.8% scored as criminal harassment, and 2.8% scored as harassing communications. Over four-fifths (84.1 per cent) of founded files in Mission resulted in a charge being recommended or laid against the accused. Less than one-tenth (7.6 per cent) were cleared through departmental discretion, while 5.5% were considered founded not cleared. In only 4 cases (2.8%), the file did not proceed due to the complainant not wanting to lay charges.

Over three-quarters (78.6 per cent) of the files in Mission involved a male offender, and the vast majority (85.4 per cent) involved a Caucasian accused. A similar percentage of files involved an Aboriginal (5.8 per cent) or South Asian (5.1 per cent) accused. Very few files involved an accused that was Asian (1.5 per cent), or Black, Middle Eastern, or Other (0.7 per cent each). The accused ranged in age from 12 years old to 98 years old, with an average age of 38.3 years old. The most common relationship status was a current dating relationship (35.9 per cent), followed by a current marital relationships (29.8 per cent). Another one-fifth of the accused were the former partner of the victim: 13.7% of files involved a former dating relationship, while 8.4% involved a former marital relationship.

As demonstrated in Figure 25, there was one main hotspot in Mission in 2016; however, this hotspot stretched from Timberlake Street in the south to just south of 7 Avenue in the north. The hotspot also extended from James Street in the west to Stave Lake Street in the east. This area was surrounded on all sides by a small area of high volume for intimate partner violence files and there was another large high volume area from Best Avenue in the north to Lougheed Highway in the south between the area west of Wren Street to just west of Hyde Street in the east. This part of the city is a mix of both residential areas and commercial businesses.

FIGURE 25: INTIMATE PARTNER VIOLENCE HOTSPOTS IN MISSION



The results for Mission stand in contrast to those of the other Lower Mainland municipalities. Only two variables, population density and unmarried person, were fully significant predictors of IPV hotspots (see Table 19). The difference between median household incomes between hotspot and non-hotspot neighborhoods, although marginally significant, was proportionately the smallest difference among the Lower Mainland sample. The same result was found for renters in that the effect of this factor was marginally significant, but only Burnaby showed a smaller difference between hotspots and non-hotspots than Mission. Moreover, Mission was also the only municipality where mobility failed to produce a significant result. At the other end of the spectrum, there were three variables that revealed comparatively large distinctions between hotpot and non-hotspot areas in Mission, but because of the nature of the statistical procedures, the variables were found to be only marginally significant. The most obvious example of this is with regard to housing condition. The proportion of housing needing major repairs was more than five times higher in hotspots in Mission, by far the largest discrepancy (Chilliwack, with the next largest difference, was only a factor of two). Another example was Aboriginal population, which was more than twice as large in Mission hotspots compared to non-hotspot areas. Again, this figure was the largest in the Lower Mainland sample. Similarly, the difference in unemployment rates in hotspots versus non-hotspots, which was also greater than 100%, was second only to Chilliwack.

TABLE 19: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – MISSION

	Hotspots	Non-Hotspots	t value
Population Density	2,473	1,261	-4.17**
Population Change 2006-2011 (%)	0.3%	10.8%	1.41
Young Males - Aged 15-24 (%)	7.0%	7.3%	0.61
Unmarried (%)	45.9%	38.2%	-4.16**
Mobility - Last 5 Years (%)	40.1%	35.4%	-1.31
Immigration (%)	11.0%	14.2%	1.48
Aboriginal Population (%)	7.9%	3.6%	-2.38*
Median Household Income ($)	$63,306	$76,649	2.65*
Unemployment Rate	5.8%	2.8%	-2.28*
Labour Force Participation (%)	65.3%	69.2%	1.65
Less Than High School Education (%)	13.9%	14.0%	0.05
Renters (%)	21.5%	11.6%	-2.33*
Housing Condition - Major Repairs (%)	5.1%	0.7%	-2.35*

* p < .05; ** p < .004

FOUNDED IPV FILES IN 2016 IN PORT COQUITLAM

In total, there were 113 IPV files were reported to the Port Coquitlam RCMP in 2016, which resulted in an average of 9.4 files reported each month or one file every third day. Consistent with the previous two municipalities, the largest proportion of files were reported to the Port Coquitlam RCMP during the week, as 42.3% of files were reported to the RCMP on Friday, Saturday, or Sunday. Still, the largest proportion of files were reported on Tuesdays (19.5 per cent) followed by Sundays (17.7 per cent). Moreover, file reporting of IPV in Port Coquitlam was equally divided between 06:00 to 18:00 (49.6 per cent) and 18:00 to 06:00 (50.4 per cent). There were two main time peaks

of reporting, with the highest overall number of files reported between 19:00 and 19:59 (11.5 per cent) and between 12:00 and 12:59 (8.8 per cent).

The majority (58.4 per cent) of files in Port Coquitlam were scored as a common assault. Another one-tenth (9.7 per cent) were classified as an assault with a weapon or an assault causing bodily harm. Over one-fifth of files involved harassment. Specifically, one-tenth of files were scored as harassing communications (10.6 per cent) or uttering threats against a person (10.6 per cent), while an additional 2.7% were considered criminal harassment. A small number (3.5 per cent, n = 4) involved forcible confinement. Overall, two-thirds (67.3 per cent) resulted in a charge being recommended or laid against the accused. Conversely, a large proportion of files, nearly one-third (31 per cent), were scored as founded not cleared.

Four-fifths (85.9 per cent) of the accused in Port Coquitlam were male, and two-thirds (68.8 per cent) were Caucasian. One-in-ten (11.7 per cent) accused were Aboriginal, while 6.5% were Middle Eastern, and 5.2% were South Asian. A small number of accused were of Asian (2.6 per cent), Black (2.6 per cent), or Hispanic (1.3 per cent) ethnicity. The accused ranged in age from 17 years old to 74 years old with an average age of 37.3 years old. Most commonly, the accused were in a dating relationship (37 per cent), followed by a current martial relationship (33.7 per cent) with the victim. Another one-fifth (19.6 per cent) of cases involved a formerly dating pair; however, very few (3.3 per cent) involved a couple who was previously married.

As demonstrated by Figure 26, there were three main hotspots for intimate partner violence files in Port Coquitlam in 2016, all of which were in predominately residential areas. Starting from the northern most hotspot, the center of this hotspot was the intersection of Salisbury Avenue and Wellington Street and extended out for several blocks in all directions. The second hotspot was to the southwest of the first one and its epicenter was the intersection of Cambridge Street and Coquitlam Avenue; again spreading out for several blocks in all directions. The final hotspot was to the southwest of the second one and was much larger. This hotspot extended from McAllister Avenue in the north to just north of Lobb Avenue in the south, and from Reeve Street in the west to Shaughnessy Street at the southern part of the hotspot and extending out to just east of Donald Street for the eastern border of the hotspot.

FIGURE 26: INTIMATE PARTNER VIOLENCE HOTSPOTS IN PORT COQUITLAM

The results for Port Coquitlam are dominated by the "big 5" predictors. Consistent with the overall findings for the Lower Mainland, median household income, renters, unmarried persons, and mobility were all statistically significant (see Table 20). In fact, the difference of almost 60% in mobility between hotspot and non-hotspot neighborhoods was the largest in the Lower Mainland sample. The finding for population density was less definitive, as the difference between hotspots

and non-hotspots was only marginally significant, and was the smallest in the sample of municipalities. Outside of these five variables, only two others managed to obtain even marginal significance; that being young males and immigration. One surprising result was related to unemployment. Port Coquitlam was the only city where unemployment was not even a marginally significant predictor of IPV hotspots. Otherwise, none of the other variable, which generally demonstrated "mixed" results across the sample of Lower Mainland municipalities, were significant.

TABLE 20: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – PORT COQUITLAM

	Hotspots	Non-Hotspots	t value
Population Density	4,795	3,327	-2.10*
Population Change 2006-2011 (%)	15.7%	3.2%	-1.73
Young Males - Aged 15-24 (%)	6.9%	8.2%	2.84*
Unmarried (%)	47.8%	37.3%	-8.66**
Mobility - Last 5 Years (%)	46.4%	29.2%	-5.60**
Immigration (%)	30.6%	25.3%	-2.23*
Aboriginal Population (%)	3.6%	2.6%	-1.06
Median Household Income ($)	$63,537	$89,021	6.16**
Unemployment Rate	4.6%	4.7%	0.10
Labour Force Participation (%)	70.1%	70.9%	0.44
Less Than High School Education (%)	8.7%	6.2%	-1.73
Renters (%)	31.7%	11.8%	-5.67**
Housing Condition - Major Repairs (%)	5.9%	3.0%	-1.97

* $p < .05$; ** $p < .004$

COMPARING FOUNDED IPV FILES IN 2016 IN THE TOP 10 MUNICIPALITIES IN THE LOWER MAINLAND

As there appeared to be some key differences between the file characteristics of founded IPV calls occurring in the top 10 Lower Mainland municipalities, some statistical comparisons were conducted between these locations to identify meaningful differences. The statistical comparisons were run using SPSS and generally included chi square analyses to compare differences in proportions, or t-tests and ANOVAs to compare differences in averages. All analyses used a cut-level of .05 to determine whether the findings were statistically significant and therefore unlikely to occur simply due to chance.

There was not a statistically significant difference in the days of the week that the files were reported across the top 10 Lower Mainland municipalities, x2 (54) = 46.14, p > .05, or the hour of day that they were reported, x^2 (207) = 223.4, p > .05.

However, when it came to the specific offence characteristics, there were some interesting differences. For instance, the main UCR categories did significantly differ, x^2 (63) = 192.2, p < .001. Across the 10 municipalities, two-thirds (66.3 per cent) of all founded IPV files were scored as a common assault. However, founded IPV files were less likely to be scored this way in Coquitlam (57.1 per cent), Port Coquitlam (58.4 per cent), Maple Ridge (59.2 per cent), and Richmond (60 per cent). Interestingly, files in these same four municipalities were substantially more likely to be

scored as Harassing Communications compared to the other six municipalities. Over the 10 municipalities, an average of 4% of files were scored Harassing Communications; however, this UCR category composed 12% of Coquitlam's files, as well as 10.6% of the files in Port Coquitlam, 10.2% of the files in Maple Ridge, and 9.6% of the files in Richmond.

Similar patterns occurred with the Criminal Harassment and Uttering Threats UCRs. Therefore, these three UCR codes were combined into one and compared across the 10 municipalities. Again, there was a clear trend towards scoring files as related to some form of harassing or threatening behavior in these four municipalities. Whereas between 9.3% (Langley) and 15.2% (Mission) of files in the remaining six municipalities were scored as related to harassing or threatening behavior, 26% of the files in Maple Ridge, 24% of the files in Coquitlam, 23.9% of the files in Port Coquitlam, and 22% of the files in Richmond were scored this way. Thus, there appeared to be more of a trend in Coquitlam, Port Coquitlam, Maple Ridge, and Richmond to score files as harassing communications than as common assault. According to Dawson and Hotton, "one of the violations included in the harassment category – threatening and harassing phone calls – is a new *Criminal Code* offence introduced in 2008" and that "When a new offence category is added to the UCR, it takes some jurisdictions longer than others to introduce the change in practice" (p. 674). Without examining the synopsis of the specific occurrence files, it is difficult to assess whether this pattern was due to different scoring interpretations, training on what constitutes harassment, or a real difference in the type of intimate partner violence patterns occurring in these jurisdictions. Still, given that fewer files were being scored as common assault in these four municipalities, it appears that there may be different interpretations of certain types of suspect behavior, for instance, when the suspect makes a threat to harm the victim. Thus, 'E' Division may want to consider undertaking a quality control review to explore why there appears to be a trend towards using the harassment and threatening related UCR codes in these four municipalities, whereas the other municipalities may still be scoring these files using the more standard common assault code, as this may have implications for further training.

The top 10 Lower Mainland municipalities also differed according to the CCJS status categories. These categories reflected the case outcome. While most cases involved a suspect who was charged or had charges recommended, some jurisdictions were significantly less likely to have cases resulting in a charge, and significantly more likely to have cases considered founded not cleared, or cleared through departmental discretion, x^2 (36) = 639.2, $p < .001$. Table 21 demonstrates the differences in three common categories of case outcome; charges laid or recommended, files cleared through departmental discretion, or files considered founded not cleared. When considering just these three types of file outcomes, IPV files in Richmond, Maple Ridge, and Port Coquitlam were less likely to be cleared through a charge. In contrast, files in Richmond were much more likely to be cleared through departmental discretion, while the files in Maple Ridge and Port Coquitlam were much more likely to be considered founded but not cleared. Although the difference was not as substantial, files in Maple Ridge were also somewhat more likely to be cleared through departmental discretion. A fairly high proportion of files in Coquitlam were also considered founded but not cleared.

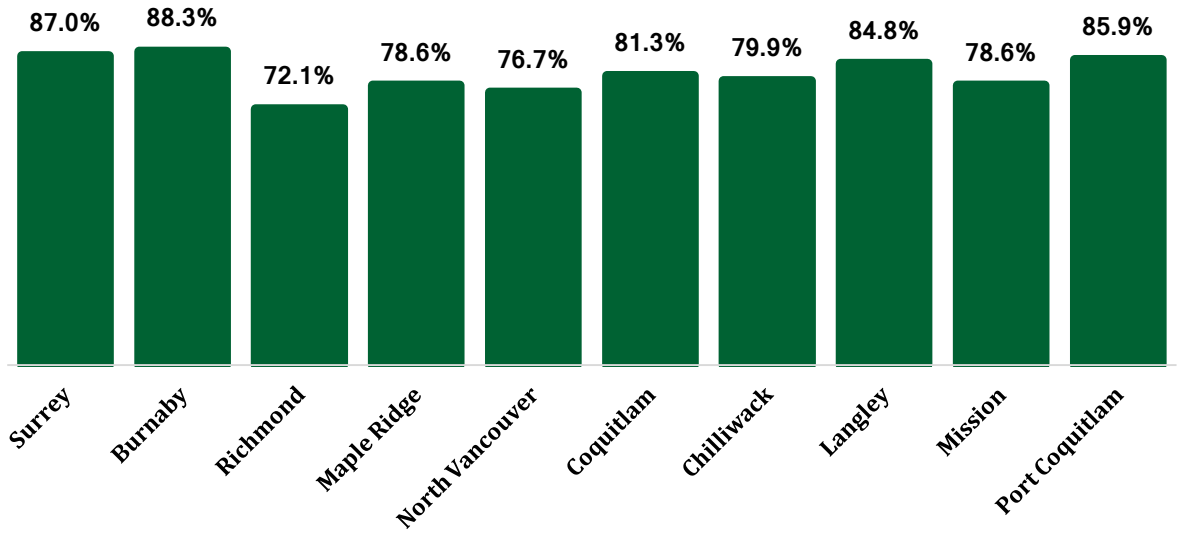
TABLE 21: COMPARING THREE FILE OUTCOME CATEGORIES IN THE TOP 10 LMD DETACHMENTS

	% Charged	% Departmental Discretion	% Founded not Cleared
Surrey	86.1%	4.3%	9.7%
Burnaby	76.1%	0.6%	23.2%
Richmond	43.6%	35.2%	21.2%
Maple Ridge	59.2%	12.3%	28.5%
North Vancouver	86.3%	4.7%	8.9%
Coquitlam	72.1%	0.5%	27.4%
Chilliwack	87.5%	4.3%	8.2%
Langley	88.1%	2.3%	9.6%
Mission	86.5%	7.8%	5.7%
Port Coquitlam	67.9%	0.9%	31.3%
Totals	78.4%, N = 2,310	6.7%, N = 198	14.8%, N = 437

One thing that might affect the outcome of an IPV file is the nature of who is involved, such as the age or gender of the accused, or whether the relationship is a current or former one. The relationship data was recoded to reflect whether the accused was a current partner (dating or spouse) or a former partner (ex-boyfriend/ex-girlfriend, or divorced/separated). These patterns differed by municipality, x^2 (9) = 33.8, p < .001. For instance, files in Maple Ridge were much more likely to involve a former relationship (35.7 per cent), particularly compared to files in either North Vancouver (14.9 per cent) or Langley (15 per cent). There was also a significant, though weaker, relationship between whether the relationship involved a couple who were currently or previously dating, or a couple who were currently or previously married, x^2 (9) = 17.8, p < .05. In this case, IPV files in Richmond were significantly less likely to involve a currently or formerly dating couple (45.7 per cent) and more likely to involve a currently or formerly married couple (54.3 per cent) compared to the other jurisdictions, where typically around 45% of files involved a currently or formerly married couple, and 55% involved a currently or formerly dating couple.

The proportion of male accused also varied significantly according to where the file was held, x^2 (9) = 46.5, p < .001. Overall, 83% of files occurring in these ten municipalities involved a male accused. However, the files in Richmond were much less likely to involve a male accused (see Figure 27). In addition to Richmond, there was also a higher proportion of female accused in North Vancouver, Mission, and Chilliwack, though these differences were not as apparent.

FIGURE 27: PROPORTION OF MALE ACCUSED IN TOP 10 LMD DETACHMENTS



The ethnicity of the accused also varied significantly by municipality, x^2 (63) = 953.8, p < .001. Over the 10 municipalities compared in the Lower Mainland, 54% of the accused were of Caucasian ethnicity, 16.3% were of South Asian ethnicity, 8.2% were of Aboriginal ethnicity, and 8.1% were of Asian ethnicity. As shown in Table 22, the accused in Maple Ridge and Mission were much more likely to be Caucasian, particularly when compared to the accused in Richmond where, comparatively speaking, an extremely high proportion of accused were of Asian ethnicity. Burnaby also had a larger proportion of Asian accused than the other municipalities. In contrast, a much higher proportion of the accused in Surrey were of South Asian ethnicity, while the accused in Chilliwack and North Vancouver were much more likely to be of Aboriginal ethnicity.

TABLE 22: ETHNICITY OF THE ACCUSED IN THE TOP 10 LMD DETACHMENTS

	Caucasian	South Asian	Aboriginal	Asian
Surrey	45.1%	30.5%	6.0%	4.9%
Burnaby	42.3%	9.5%	9.9%	17.8%
Richmond	29.6%	10.1%	4.8%	41.8%
Maple Ridge	86.1%	2.8%	4.9%	1.4%
North Vancouver	55.2%	1.7%	18.0%	4.7%
Coquitlam	58.2%	4.5%	4.5%	8.2%
Chilliwack	71.1%	1.7%	23.7%	0%
Langley	79.1%	6.1%	3.7%	1.8%
Mission	85.4%	5.1%	5.8%	1.5%
Port Coquitlam	69.7%	5.3%	11.8%	2.6%
Totals	54.2%, n = 1,378	16.3%, n = 415	8.2%, n = 208	8.1%, n = 206

The last demographic factor considered was the age of the accused. There was not a statistically significant difference when looking at the average age of the accused across the 10 LMD

municipalities, F_{Welch} (9, 599.4) = 1.1, p > .05. The age variable was recoded into adult versus youth accused. Although there was a slightly higher proportion of youth accused in Mission (4.3 per cent) compared to the other municipalities (range of 0.6 per cent youth to 2.4 per cent youth), this difference was not statistically significant, x2 (9) = 14.2, p > .05.

Overall then, IPV files in the top 10 municipalities in the Lower Mainland differed from each other in terms of the gender and ethnicity of the accused, the proportion of common assault versus harassment related files, and the outcome of the file.

In the Lower Mainland district, 78.4% (n = 2,310) of files resulted in a recommended charge. Together, the 11 predictors produced a statistically significant model [x^2 (10) = 170.05, p < .001] explaining nearly one-fifth of the variance in charges (Nagelkerke R^2 = .164), and correctly classifying 92.5% of the cases. There were four statistically significant predictors of a recommended charge. Asian suspects had a 78% lower likelihood of being charged than did non-Asian suspects (Odds Ratio = 0.22). Whereas files scored as harassment/threats were 59% less likely to result in a recommended charge (Odds Ratio = 0.41), files scored as an assault with a weapon or an assault causing bodily harm were 2.4 times as likely to result in a recommended charge. Still, overall, the largest effect on whether a suspect had a charge recommended against them was if the suspect was male (Odds Ratio = 6.2) (see Table 23).

TABLE 23: LOGISTIC REGRESSION MODELS PREDICTING FILE OUTCOMES IN THE LOWER MAINLAND

Predictors	Model = Charges				Model = Discretion			
	B	S.E.	Wald	Exp (B)	B	S.E.	Wald	Exp (B)
Constant	1.80	0.40	20.79	6.05	-2.15	0.44	23.74	.117***
Caucasian	-0.16	0.27	0.37	0.85	0.27	0.30	0.83	1.32
Aboriginal	0.07	0.39	0.03	1.07	-0.23	0.45	0.26	0.79
South Asian	-0.04	0.33	0.02	0.96	0.02	0.39	0.00	1.02
Asian	-1.52	0.30	25.98	0.22***	1.72	0.33	26.99	5.57***
Age	-0.00	0.01	0.26	1.0	0.01	0.01	0.46	1.01
Current Relationship	-0.17	0.22	0.58	0.84	0.32	0.25	1.66	1.38
Spouse	-0.28	0.19	2.22	0.76	0.18	0.21	0.72	0.40
Male	1.83	0.18	101.76	6.22***	-2.04	0.20	105.8	0.13***
Assault Wpn/CBH	0.87	0.28	9.40	2.38**	-1.00	0.32	9.78	0.37**
Harass/Threats	-0.90	0.27	11.79	0.40**	1.23	0.28	19.05	3.41***

* $p < .05$ ** $p < .01$ *** $p < .001$

Only 6.7% (n = 198) of founded IPV cases in the Lower Mainland district were cleared by departmental discretion. Still, the 10 predictors worked together to produce a statistically significant model [x^2 (10) = 182.15, p < .001] that explained one-fifth of the variance in discretion outcomes (Nagelkerke R^2 = 0.194), and which correctly classified 93.7% of the cases (see Table 23). The same four variables that predicted whether a suspect would be charged were relevant in the model predicting cleared by discretion, although the direction of effect was different. Asian suspects were nearly six times as likely to be involved in a file cleared through departmental discretion. Harassment/threat related files were also 3.4 times more likely to be cleared through departmental discretion. Files involving males or involving more serious forms of assault were less likely to be cleared through departmental discretion.

The summary of socio-economic and socio-demographic effects presented in Table 24 reveals several interesting patterns. First, every municipality in the Lower Mainland had at least two variables that were significant predictors of IPV hotspots. Second, there is clear variability in the overall strength of structural factors across municipalities. Moreover, this variation seems, at least in part, to be driven by IPV levels. The municipalities in Table 24 are arrayed from most (Surrey) to least (Port Coquitlam) founded IPV files. In general, the areas with the highest IPV levels showed the greater number of statistically significant effects. As the prevalence of IPV dropped, so too did the predictive power of the structural variables. In Port Coquitlam and Mission, only four and two variables were fully significant, respectively. In very broad terms, this finding hints at the possibility that the effects of structural variables are more readily apparent in neighborhoods where IPV is more common.

Table 24 similarly highlights notable variability across the various demographic and socio-economic factors, which may be sorted into three more or less distinct categories. First, there were the “big 5” variables that were significant in all or nearly all municipalities; population density, unmarried persons, mobility, median household income, and renters. These factors were consistent predictors of IPV hotspots in the Lower Mainland. Second, there were another set of variables that might best be classified as showing “mixed” effects. These variables were significant or marginally significant in some municipalities, but not others; young males, immigration, unemployment rate, limited education, and poor housing conditions. Finally, three variables, namely population change, Aboriginal population, and labour force participation, proved essentially ineffective as predictors of IPV hotpots in this district.

TABLE 24: SUMMARY OF SIGNIFICANT T VALUES ACROSS MUNICIPALITIES – LOWER MAINLAND

	Surrey	Burnaby	Richmond	Maple Ridge	North Vancouver	Coquitlam	Chilliwack	Langley	Mission	Port Coquitlam
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 < .05; ** p < .004

Founded IPV Files in 2016 in the Southeast District

There were 1,807 founded IPV files that occurred in the Southeast District in 2016. Given the large number of jurisdictions with comparatively small numbers of files, the subsequent analyses focused on the municipalities reporting at least 50 founded IPV files in 2016 (as highlighted in Table 25). Of note, there were 124 additional municipalities in the Southeast District with at least one, but less than 10, IPV files reported in 2016 and which are subsequently not presented in Table 25. The seven highlighted municipalities in the Southeast District had more than 50 founded IPV files each in 2016 and will be analysed further.

TABLE 25: FOUNDED IPV FILES IN THE SOUTHEAST DISTRICT 2016 (N = 1,807)

	Number	Per Cent of Southeast
Kelowna	289	16.0%
Kamloops	270	14.9%
Vernon	147	8.1%
Cranbrook	101	5.6%
West Kelowna	99	5.5%
Penticton	94	5.2%
Merritt	64	3.5%
Lake Country	37	2.0%
Trail	37	2.0%
Salmon Arm	33	1.8%
Lillooet	27	1.5%
Enderby	26	1.4%
Creston	25	1.4%
Oliver	22	1.2%
Osoyoos	21	1.2%
Armstrong	17	0.9%
Castlegar	17	0.9%
Lumby	17	0.9%
Summerland	17	0.9%
Grand Forks	15	0.8%
Keremeos	15	0.8%
Lytton	15	0.8%
Peachland	15	0.8%
Revelstoke	15	0.8%
Golden	14	0.8%
Princeton	14	0.8%
Coldstream	13	0.7%
Kimberley	12	0.7%
Chase	10	0.6%
Fernie	10	0.6%
Unknown	12	0.7%

FOUNDED IPV FILES IN 2016 IN KELOWNA

IPV files in Kelowna accounted for the largest proportion (16 per cent) of files in the Southeast District. In 2016, Kelowna had 289 IPV files or, on average, 24 files per month. In total, 45% of all files occurred on a Friday, Saturday, or Sunday; however, unlike the municipalities from the Lower Mainland, in Kelowna, Sundays were the second lowest day of the week for reporting intimate partner violence to the RCMP. Still, Saturdays (17.0 per cent) and Fridays (16.6 per cent) were the most common days for reporting. Reporting was also slightly more likely to occur between 18:00 and 06:00 (52.9 per cent) than between 06:00 and 18:00 (47.1 per cent).

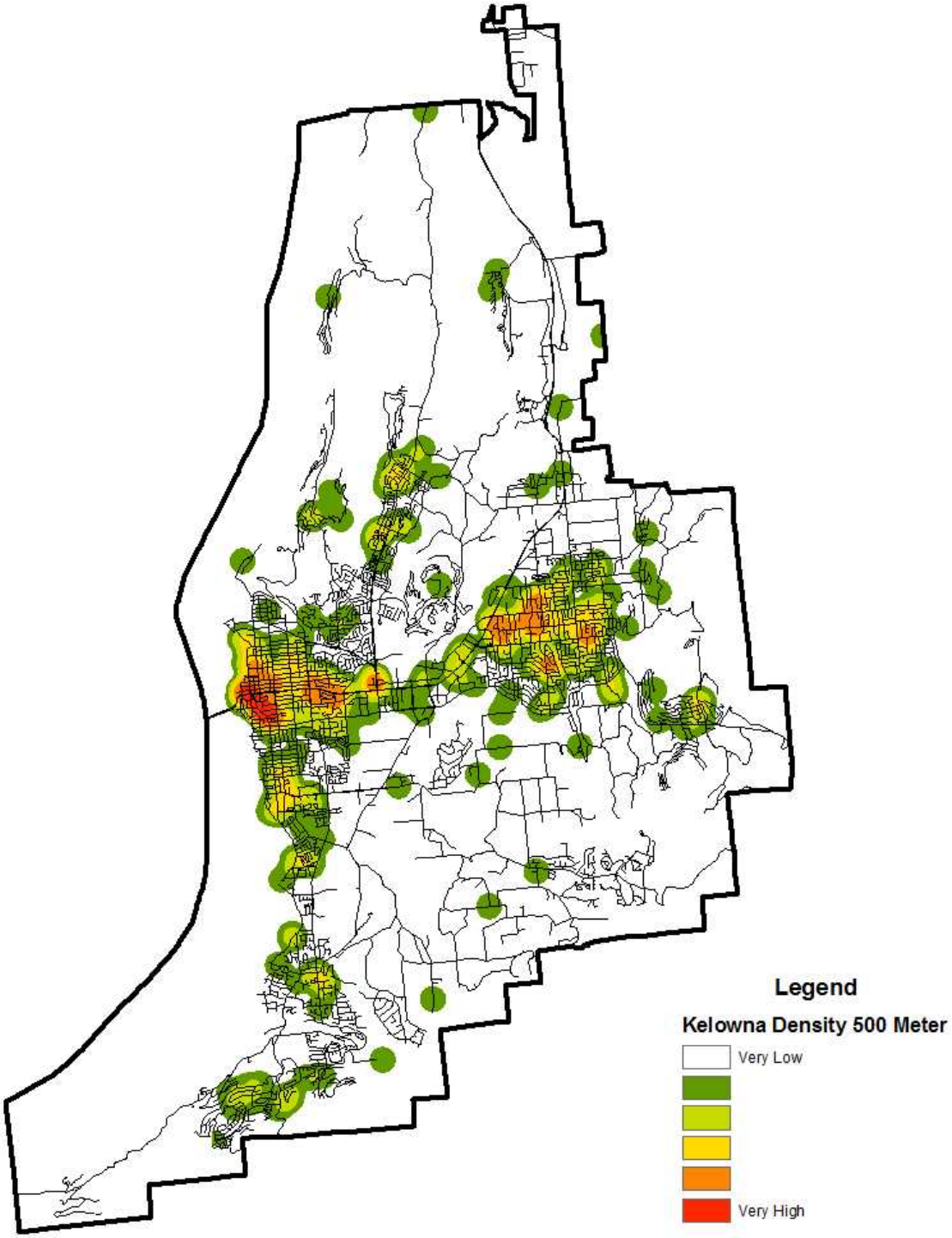
The most common UCR code assigned to founded IPV files in Kelowna was a common assault (68.9 per cent), followed by an assault with a weapon or an assault causing bodily harm (11.4 per cent). No other UCR category composed 10% of the remaining files individually, although 7.3% of files were scored as uttering threats against a person, 4.2% were scored as harassing communications, and 2.1% were scored as criminal harassment. In other words, when combining the harassing and threatening related UCR codes, these types of IPV files were the second most common type of IPV file in Kelowna (13.6 per cent). Two-thirds (66.1 per cent) of all founded IPV files in Kelowna

resulted in a charge being laid or recommended against an accused. An additional 15.6% of the files were considered founded but not cleared, while 13.5% were cleared through departmental discretion.

The accused in Kelowna were between 15 years old and 74 years old, with an average age of 37.1 years old. Three-quarters (75.8 per cent) were male, and four-fifths (80.4 per cent) were Caucasian. Aboriginal accused composed another one-tenth (9.8 per cent), while South Asian accused composed 4.9%. Most commonly, the IPV occurred in a current dating relationship (41.5 per cent), followed by a current marital relationship (34.5 per cent). Another one-fifth of relationships involved a former couple; most commonly this was a former dating relationship (17.8 per cent) as opposed to a former marital relationship (1.8 per cent).

As demonstrated by Figure 28, there were several emerging hotspots, but one main hotspot at the mid-western part of the city. More specifically, the hotspot was somewhat oval-shaped and was found in the residential area from Lawrence Avenue in the north to Cadder Avenue in the south, and from Abbott Street in the west to approximately Richter Street in the east. Again, the main hotspot was surrounded by an area of high volume for intimate partner violence files in all directions for several more blocks.

FIGURE 28: INTIMATE PARTNER VIOLENCE HOTSPOTS IN KELOWNA



In contrast to the other six municipalities of the Southeast, a majority of the structural variables were significantly associated with IPV hotspots in Kelowna. As shown in Table 26 the most important predictor was median household income, followed by unmarried persons. IPV hotspots demonstrated significantly lower household income (with a discrepancy of almost $25,000, on average) and a significantly higher percentage (35%) of unmarried persons. The proportion of unmarried persons stood out as the only indicator which was consistently found to be at least marginally significant across the municipalities in the Southeast, with one exception (West Kelowna). Additionally, the proportion of renters, population density, residential mobility, limited education, unemployment rate, and Aboriginal population were all higher in IPV hotspots and all reached statistical significance in Kelowna. Notably, the percentage of renters was more than twice as high in hotspot neighbourhoods in comparison to other areas of the city. Of the remaining variables, only housing condition demonstrated marginal significance, with a larger percentage of homes in hotspot areas requiring major repairs (2.3 times greater). Population change, proportion of young males, immigration, and labour force participation were all insignificant. Contrary to both theoretical expectations and the findings in the Lower Mainland, the proportion of young males did not achieve even marginal significance in any of the municipalities in the region. Similarly, although immigration was significantly related to IPV in some parts of the Lower Mainland, as will be discussed below, no such relationship is evident in the Southeast. This may be due to the relatively low proportion of immigrants in the region; the percentage of immigrants never surpassed 15% in either hotspot or non-hotspot neighbourhoods.

TABLE 26: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – KELOWNA

	Hotspots	Non-Hotspots	t value
Population Density	3,622	1,767	-5.22**
Population Change 2006-2011 (%)	3.8%	8.2%	1.33
Young Males - Aged 15-24 (%)	6.8%	6.9%	0.29
Unmarried (%)	55.1%	40.9%	-7.93**
Mobility - Last 5 Years (%)	54.8%	44.6%	-4.05**
Immigration (%)	11.9%	13.9%	1.62
Aboriginal Population (%)	6.6%	3.2%	-3.19**
Median Household Income ($)	$45,399	$70,336	8.21**
Unemployment Rate	10.0%	6.4%	-3.29**
Labour Force Participation (%)	66.9%	66.1%	-0.32
Less Than High School Education (%)	11.7%	6.6%	-3.30**
Renters (%)	45.4%	20.1%	-6.09**
Housing Condition - Major Repairs (%)	4.2%	1.8%	-2.61*

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN KAMLOOPS

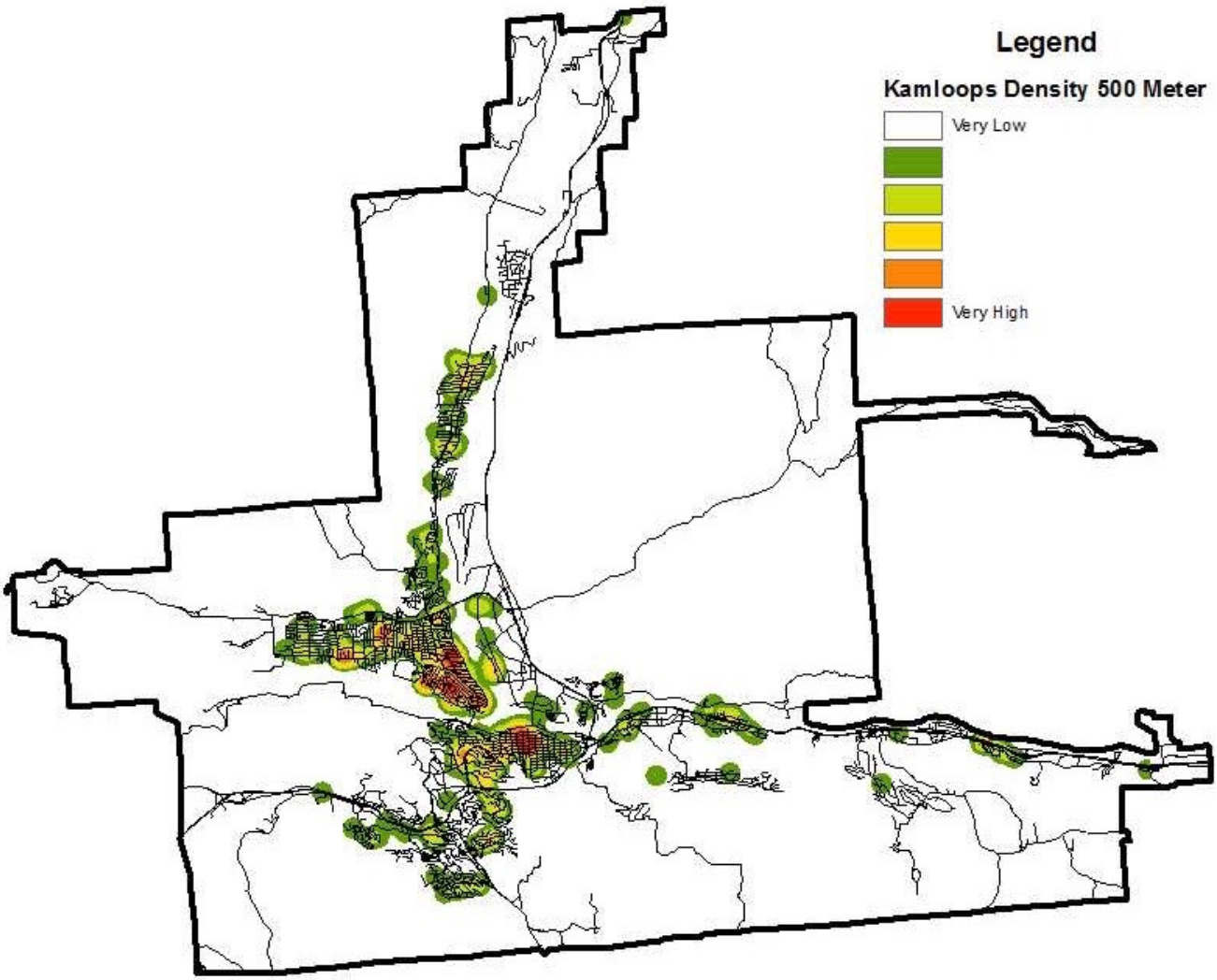
A total of 270 founded IPV files were reported in Kamloops in 2016 or 22.5 files per month. In Kamloops, 48.1% of files were generated on a Friday, Saturday, or Sunday, with Fridays being the most common day (18.5 per cent). IPV file reporting was essentially equally divided between 06:00 to 18:00 (48.1 per cent) and 18:00 to 06:00 (51.9 per cent). Over two-thirds (70.4 per cent) of founded IPV files in Kamloops were scored as a common assault, while 8.1% were scored as an

assault with a weapon or an assault causing bodily harm. Again, when examining the harassment and threatening files separately, there was a small proportion of each type of file (6.3 per cent harassing communications, 4.4 per cent uttering threats, and 3.7 per cent criminal harassment). Once combined, these three types of files composed 14.4% of all founded IPV files in Kamloops.

Two-thirds (68.1 per cent) of founded IPV files in Kamloops resulted in the accused being charged or having charges recommended. A comparatively high number of files were considered founded not cleared (21.5 per cent), while less than one-in-ten (6.7 per cent) were cleared through departmental discretion, and only 10 (3.7 per cent) involved the complainant refusing to lay charges. The accused in Kamloops ranged in age from 16 years old to 68 years old, with an average of 35.6 years old. One-fifth (20.6 per cent) of the accused were female, and one-quarter (25.6 per cent) were Aboriginal. Another two-thirds (67.8 per cent) of the accused were Caucasian. Nearly half (46.2 per cent) of files involved a current dating relationship, while nearly another third (31.2 per cent) involved a currently married couple. 16.2% of the accused were the former girlfriend or boyfriend of the victim, and only 1.7% were separated or divorced from the victim.

As demonstrated in Figure 29, there were three main hotspots for IPV files in Kamloops in 2016. The largest one was the mixed residential and commercial area between Lansdowne Street and Columbia Street between 4th Avenue and 7th Avenue. The second and third hotspots were to the north west of this hotspot, and were part of a large area of higher volume for intimate partner violence files. The northern most hotspot was concentrated in the residential area between Brandon Avenue and Holly Avenue, and to the west of 7th Street all the way to Jasper Avenue. The third hotspot was just to the south of the aforementioned hotspot and stretched from McGowan Avenue to Campbell Avenue between Oak Road and Yew Street to the north and Knox Street and Clapperton Road to the south.

FIGURE 29: INTIMATE PARTNER VIOLENCE HOTSPOTS IN KAMLOOPS



The findings from Kamloops, shown in Table 27 to a large extent echo those from Kelowna. The proportion of unmarried persons, almost 37% higher in IPV hotspots, emerged again as the strongest predictor. Areas that experienced higher levels of IPV also had a higher proportion of renters (about 2.5 times higher) and lower median household income (33 per cent lower). Residential mobility, Aboriginal population, and housing condition were all found to be significantly higher in hotspot neighbourhoods. In fact, the percentage of housing requiring major repairs was almost six times greater in hotspot areas; the only other city in the Southeast to have such a stark discrepancy in housing condition was Cranbrook, although the effect was not statistically significant in that city. Population density was more than 1.3 times higher in Kamloops hotspot neighbourhoods, a distinction which only reached marginal significance. Change in population, the proportion of young males, and immigration all had no significant effect on IPV. The results found in Kamloops differed from those in Kelowna most notably with regards to education and employment

related indicators. Though a positive, significant relationship with IPV was found with unemployment rate and limited education in Kelowna, both indicators failed to reach significance in Kamloops. Yet, labour force participation, which was insignificant in Kelowna, was almost 10% lower in hotspot neighbourhoods, a finding that did reach marginal significance. Kamloops was the only city in the region to note even a slightly significant relationship between labour force participation and IPV; no other municipality in the Southeast had a similar finding.

TABLE 27: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – KAMLOOPS

	Hotspots	Non-Hotspots	t value
Population Density	2,618	1,918	-2.82*
Population Change 2006-2011 (%)	1.1%	4.8%	1.16
Young Males - Aged 15-24 (%)	7.3%	7.2%	-0.20
Unmarried (%)	54.1%	39.5%	-7.80**
Mobility - Last 5 Years (%)	51.8%	40.3%	-4.10**
Immigration (%)	9.5%	8.8%	-0.68
Aboriginal Population (%)	12.5%	5.5%	-3.50**
Median Household Income ($)	$47,289	$71,166	5.63**
Unemployment Rate	8.5%	6.9%	-1.10
Labour Force Participation (%)	61.3%	67.3%	2.77*
Less Than High School Education (%)	11.5%	8.4%	-1.70
Renters (%)	44.2%	17.8%	-6.82**
Housing Condition - Major Repairs (%)	9.0%	1.6%	-4.46**

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN VERNON

In 2016, there was a total of 147 founded IPV files were reported in Vernon or 12.3 files per month. There was a clear trend towards a greater number of IPV files being reported during the day in Vernon, as 57.8% were reported between 06:00 and 18:00. Unlike most of the other jurisdictions analysed thus far, only 39.5% of all IPV files were generated on a Friday, Saturday, or Sunday in Vernon. More specifically, the most common day was Mondays (18.4 per cent), and IPV files were least likely to be reported on Sundays (10.9 per cent).

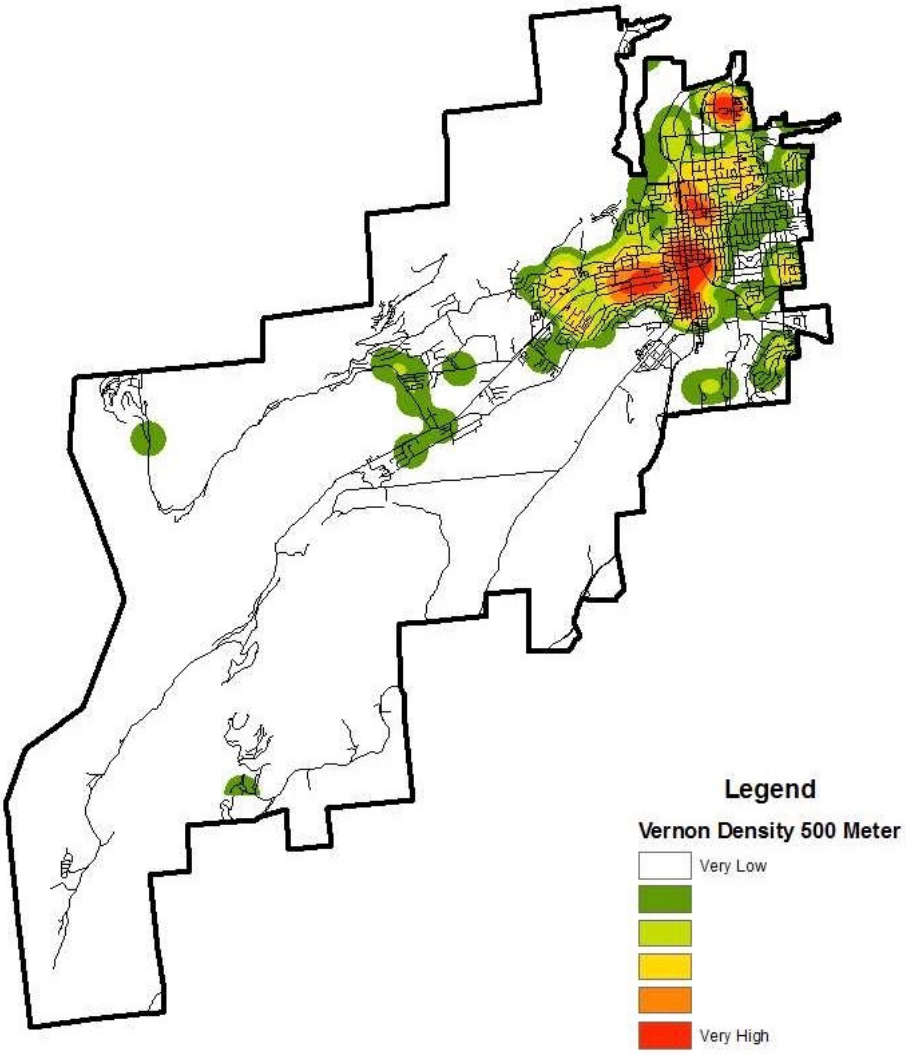
IPV files in Vernon were most likely to be scored as a common assault (59.2 per cent), though a large proportion were scored as harassing communications (15 per cent). Overall, when combining the threats and harassment related charges together, over a quarter (27.9 per cent) of all files in Vernon met these categories (harassing communications 15 per cent, uttering threats 8.8 per cent, and criminal harassment 4.1 per cent). In addition, assault with a weapon or assault causing bodily harm constituted 7.5% of all founded IPV files in Vernon. Nearly three-quarters (72.8 per cent) of accused were charged or had a charge recommended. However, over one-fifth (22.4 per cent) of files were considered founded not cleared. A small minority (4.1 per cent) were cleared through departmental discretion.

The accused in Vernon were most likely to be male (81.6 per cent) Caucasians (87.7 per cent). Less than one-tenth (8.5 per cent) were Aboriginal, and very few were of other ethnicities (South Asian 1.9 per cent, Asian 0.9 per cent, Black 0.9 per cent). The age of accused ran from 16 through 84,

while the average age of the accused was 36.4 years old. Nearly half (40.2 per cent) of the IPV files involved a currently dating couple, while another quarter (26.2 per cent) involved a formerly dating couple. Slightly less than a quarter (23.8 per cent) involved current spouses, and very few files (4.9 per cent) involved former spouses.

As demonstrated in Figure 30, Vernon has four distinct hotspots for intimate partner violence files in 2016. Starting in the north of the city, the first hotspot was focused on the residential area along 53 Avenue between 24th Street and 20th Street, including the neighbourhood just to the east of 20th Street. The second hotspot was centered around the apartment complexes between 39 Avenue and 37 Avenue along 28a Street and stretched a few blocks to the north and the east. The third hotspot encompassed the area between 27 Avenue and Okanagan Avenue between 39th Street and 34a Street. Finally, the fourth and largest hotspot included the commercial area along 28th Avenue from 28th Street to 34th Street, stretched to the north just beyond 31st Avenue, and continued to the south to include the residential area to 17 Avenue between 34th Street and 31a Street.

FIGURE 30: INTIMATE PARTNER VIOLENCE HOTSPOTS IN VERNON



Vernon diverged from Kelowna or Kamloops in that only four variables had a statistically significant effect on IPV; unmarried persons, residential mobility, median household income, and the percentage of renters (see Table 28). The proportion of unmarried persons was almost 1.5 times higher in hotspot compared to non-hotspot areas; this was once again the strongest finding. The percentage of renters and residential mobility were both greater (2.6 times and 1.2 times higher, respectively) in IPV hotspots. These findings were true for a majority of municipalities in the Southeast region, although they were certainly not ubiquitous. The discrepancy between median household income in IPV hotspots and non-hotspots was comparable to both Kelowna and Kamloops (about 37 per cent lower in hotspots). However, median income was slightly lower in Vernon in both hotspot and non-hotspot neighbourhoods; no other municipality had a median income level below $40,000. Unemployment rate and the percentage of residents with less than a high school education achieved marginal significance, with IPV hotspots having a higher unemployment rate and a higher proportion of residents with limited education. Whereas housing condition and Aboriginal population were at least slightly significant in the previous two municipalities, neither had a significant relationship with IPV in Vernon. The other five indicators, namely population density, population change, proportion of young males, immigration, and labour force participation, did not reach statistical significance.

TABLE 28: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – VERNON

	Hotspots	Non-Hotspots	t value
Population Density	2,236	1,874	-1.12
Population Change 2006-2011 (%)	0.8%	8.2%	1.30
Young Males - Aged 15-24 (%)	5.7%	6.1%	0.86
Unmarried (%)	57.6%	40.2%	-6.75**
Mobility - Last 5 Years (%)	52.8%	42.8%	-3.05**
Immigration (%)	9.4%	10.8%	0.82
Aboriginal Population (%)	8.0%	6.0%	-1.06
Median Household Income ($)	$39,729	$63,207	5.18**
Unemployment Rate	11.3%	6.8%	-2.15*
Labour Force Participation (%)	58.9%	61.5%	0.69
Less Than High School Education (%)	15.6%	8.6%	-2.77*
Renters (%)	46.4%	17.9%	-5.32**
Housing Condition - Major Repairs (%)	5.4%	2.0%	-1.69

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN CRANBROOK

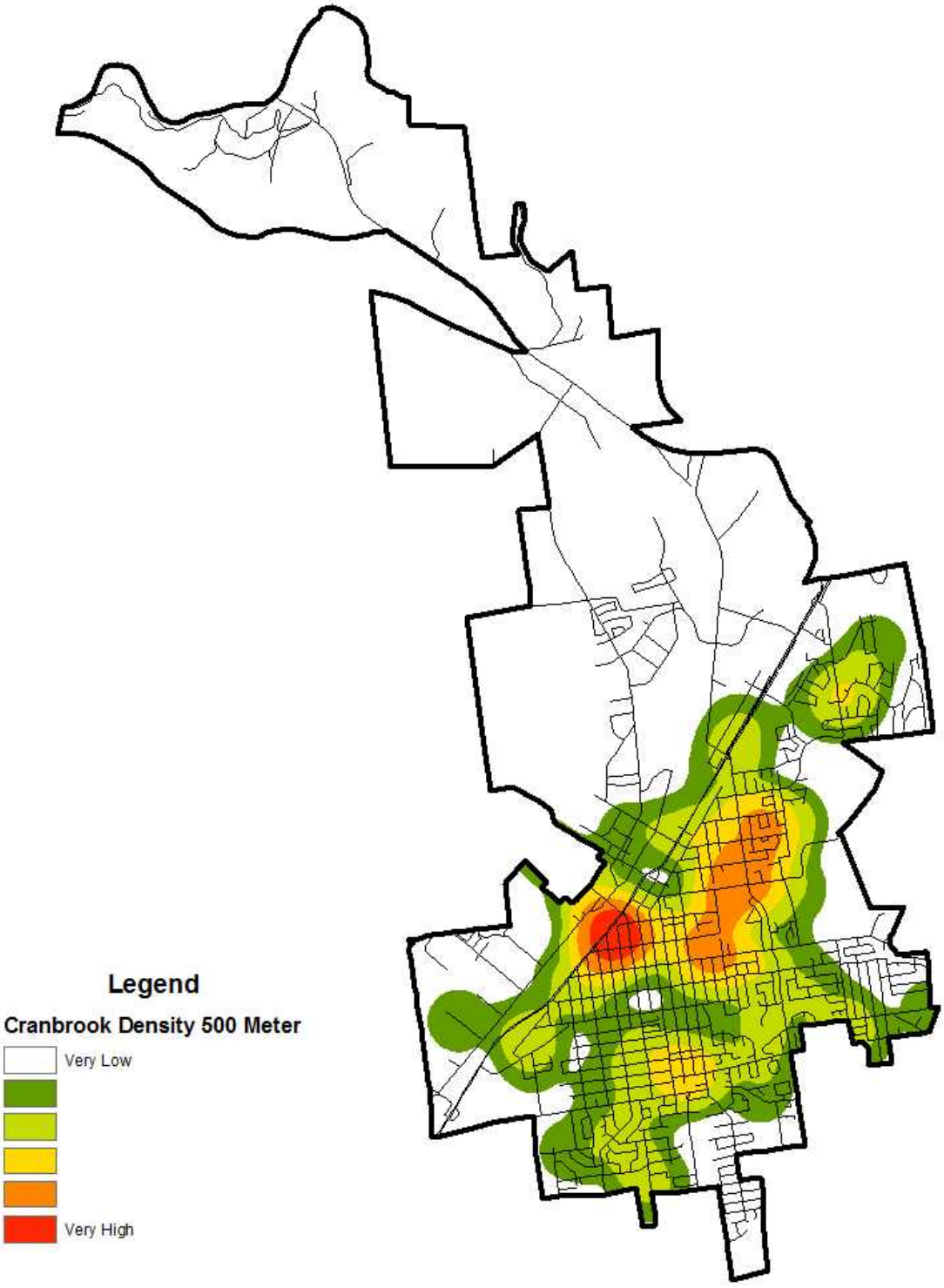
In total, 101 founded IPV files were reported to the Cranbrook RCMP in 2016. This accounted for 8.4 IPV files per month or 0.28 files per day. In terms of the day of the week for reporting, 48.5% of files occurred on a Friday, Saturday, or Sunday. The most common day of the week for reporting intimate partner violence to the RCMP was Saturday (23.8 per cent) followed by Thursday (18.8 per cent). Overall, a slightly larger proportion of files were reported between 18:00 and 06:00 (56.4 per cent).

Nearly two-thirds (63.4 per cent) of founded IPV files in Cranbrook were scored as a common assault. Similar to Vernon, combining the threat and harassment related codes resulted in a fairly high proportion of files (18.8 per cent). However, unlike in Vernon, where the highest proportion of these files related to harassing communications, only 3% of files in Cranbrook were scored this way, while 4% were scored as criminal harassment. In contrast, 11.9% of files in Cranbrook were scored as uttering threats. The other relatively common UCR code assigned to founded IPV files in Cranbrook was an assault with a weapon or an assault causing bodily harm, which comprised 9.9% of all 2016 founded IPV files. Three-quarters (76.2 per cent) of the accused had charges laid or recommended against them. Slightly less than one-fifth (17.8 per cent) were considered founded, but not cleared. A small minority were cleared through departmental discretion (4.0 per cent), while in 2% (n = 2) of files, the complainant did not agree to charges.

The accused in Cranbrook ranged in age from 13 years old to 65 years old, with an average age of 37 years old. Three-quarters (75.9 per cent) were male, two-thirds (65.8 per cent) were Caucasian, while another quarter (25.3 per cent) were Aboriginal. A small number were Black (5.1 per cent, n = 4), Asian (2.5 per cent, n = 2), or Middle Eastern (1.3%, n = 1). In contrast to Vernon, where the vast majority of IPV occurred between currently or formerly dating partners, nearly half of the IPV files in Cranbrook involved current spouses (41.1 per cent). Slightly more than one-quarter (27.8 per cent) involved current dating partners, and one-tenth (11.1 per cent) involved formerly dating partners. Another 6.7% occurred between former spouses, and 13% occurred in "other" relationship types.

As demonstrated by Figure 31, there was one main hotspot in Cranbrook in 2016 for intimate partner violence files. This hotspot includes a mix of residential and business areas and emanates out for several blocks in all directions from the parking lot located between Van Horne Street South and Louis Street between Hanson Avenue and 7th Avenue South.

FIGURE 31: INTIMATE PARTNER VIOLENCE HOTSPOTS IN CRANBROOK



The findings for Cranbrook, presented in Table 29, revealed only four variables that achieved at least marginal significance; proportion of unmarried persons, proportion of renters, percentage of Aboriginal population, and median household income. The largest recorded effect was the proportion of unmarried persons, which was 43% higher in IPV hotspots than non-hotspots. This was followed by the effect of renters, which was the only other finding that retained statistical significance after the application of the Bonferroni correction. The proportion of renters in hotspot neighbourhoods was 5.5 times higher than in other parts of the city. Results showed that Aboriginal population had a marginally significant effect. Whereas Vernon had a very similar proportion of Aboriginal residents in hotspot and non-hotspot areas, Cranbrook, Kamloops, and Kelowna all had at least twice as many Aboriginal residents in hotspot neighbourhoods. Despite the consistently significant performance of median household income in this region thus far, that indicator reached only marginal significance. Hotspot areas had a median income 27% lower than non-hotspots, a slightly smaller discrepancy than has been seen thus far. Contrary to the previously examined municipalities, although residential mobility was higher (20 per cent) in IPV hotspots, as expected, the effect was insignificant. Housing condition was similarly notably poorer in that the proportion of housing needing major repairs was over five times higher in hotspot areas, but this variable too was not significant. Indeed, the bulk of the variables used were unrelated to levels of IPV; population density, population change, proportion of young males, immigration, and housing condition all had no effect.

TABLE 29: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – CRANBROOK

	Hotspots	Non-Hotspots	t value
Population Density	1,932	1,808	-0.31
Population Change 2006-2011 (%)	6.8%	8.1%	0.17
Young Males - Aged 15-24 (%)	6.3%	6.1%	-0.53
Unmarried (%)	50.5%	35.3%	-5.39**
Mobility - Last 5 Years (%)	46.6%	38.6%	-1.57
Immigration (%)	5.2%	6.4%	0.81
Aboriginal Population (%)	9.9%	4.1%	-2.16*
Median Household Income ($)	$51,598	$71,010	2.68*
Unemployment Rate	6.6%	4.4%	-0.88
Labour Force Participation (%)	61.1%	65.7%	0.98
Less Than High School Education (%)	18.1%	8.2%	-1.93
Renters (%)	40.1%	7.2%	-4.22**
Housing Condition - Major Repairs (%)	11.5%	2.1%	-2.07

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN WEST KELOWNA

In total, in 2016, there were 99 founded IPV files were reported to the West Kelowna RCMP. Over the 12 months, an average of 8.5 files were reported each month. A majority of files (52.5 per cent) were received on a Friday, Saturday, or Sunday. In fact, more than twice as many files were reported on Sundays (22.2 per cent) than on either Mondays (9.1 per cent) or Thursdays (9.1 per cent). File reporting was nearly equally divided in West Kelowna between 06:00 and 18:00 (50.5 per cent) and 18:00 to 06:00 (49.5 per cent).

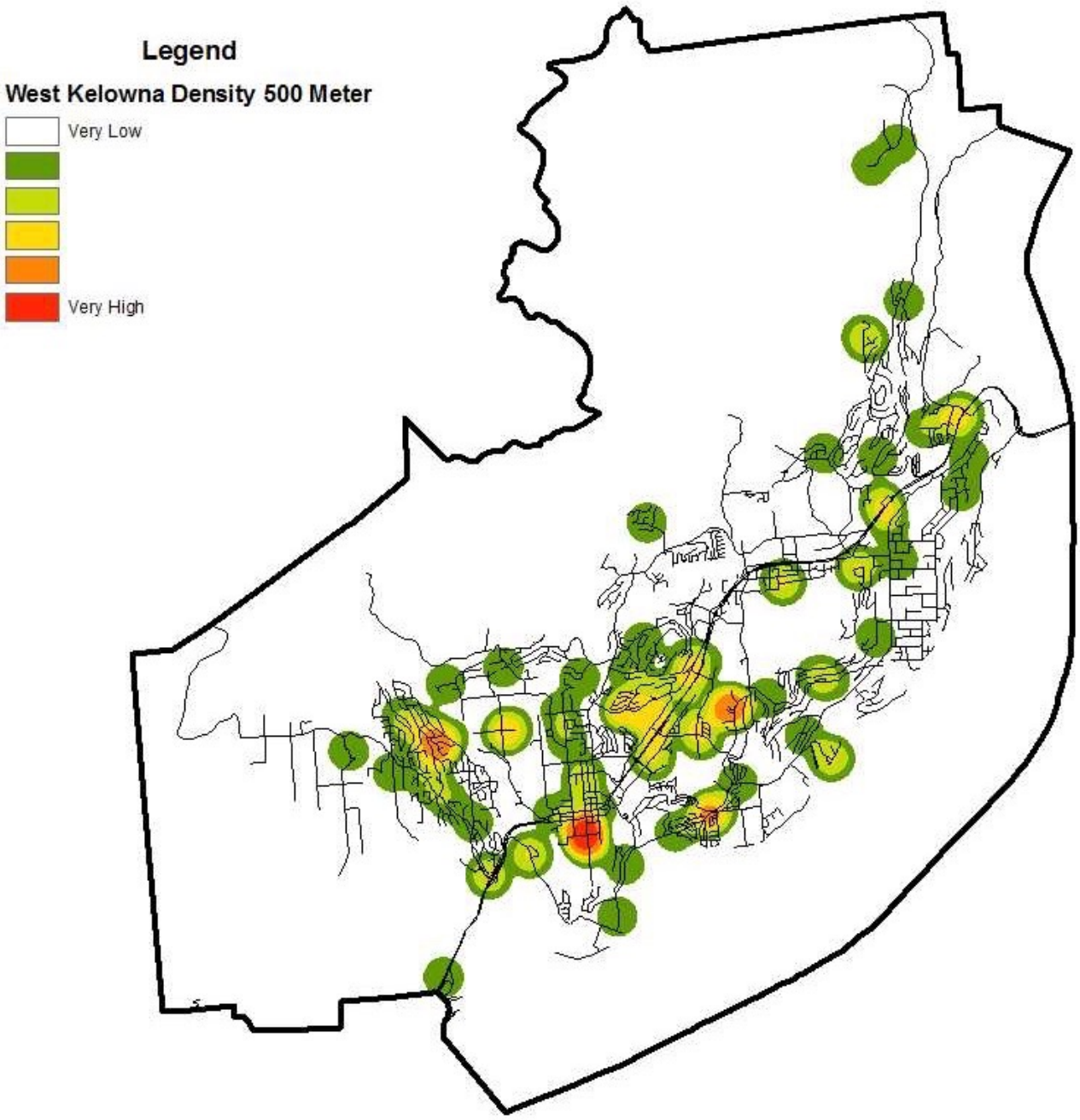
Over two-thirds (70.7 per cent) of the founded IPV files in West Kelowna in 2016 were scored as a common assault. Consistent with Cranbrook, West Kelowna also scored a comparatively large proportion of files as uttering threats (13.1 per cent). Yet, altogether, the threats and harassment files composed 16.2% of the founded IPV files, meaning that very few files were scored as criminal harassment (2 per cent) or harassing communications (1 per cent). Instead, the third most common UCR category was an assault with a weapon or an assault causing bodily harm, which comprised nearly one-in-ten files (9.1 per cent).

Slightly more than two-thirds (69.7 per cent) of the accused were charged or had charges recommended. Less than one-fifth were scored as founded not cleared (16.2 per cent). However, a slightly higher proportion of files in West Kelowna compared to other Southeast District detachments were cleared through departmental discretion (9.1 per cent). In four additional cases, the complainant did not agree to charges.

The accused in West Kelowna had a much smaller age range than in other municipalities, and, of note, none of the accused were youth. Specifically, the accused ranged in age from 19 years old to 67 years old, with an average age of 38 years old. Four-fifths of the accused were male (80.7 per cent), and Caucasian (81.7 per cent). The next most common ethnicity of the accused was Aboriginal (13.4 per cent), and only a small number were Black (3.7 per cent, n = 3) or Middle Eastern (1.2 per cent, n = 1). Consistent with the pattern in Cranbrook, the most common relationship status of couples involved in a founded IPV file in West Kelowna was a current marital relationship (42.6 per cent), while the next most common was a current dating relationship (27.7 per cent). Another 13.8% were involved in a former dating relationship, while 9.6% were formerly married.

As demonstrated in Figure 32, while there were three small emerging hotspots, there was one main hotspot in West Kelowna in 2016 with its center at the intersection of Ingram Road and Brown Road, a mainly residential area with a strip mall. This hotspot extended for approximately one city block in all directions from the epicenter.

FIGURE 32: INTIMATE PARTNER VIOLENCE HOTSPOTS IN WEST KELOWNA



The findings for West Kelowna, shown in Table 30, were anomalous in the Southeast in comparison to the previous municipalities. Not a single indicator achieved actual statistical significance, and only one obtained marginal significance. Despite the strength of variables, such as proportion of unmarried persons, percentage of renters, or median household income in other cities of this region, the only slightly significant predictor in West Kelowna was unemployment rate (over twice as high in IPV hotspots). This indicator typically showed at least a marginally significant relationship with IPV in the Lower Mainland, but has been far less consistent in the Southeast. The

dearth of significant findings in this municipality was likely due to the striking similarities in some key aspects of hotspot and non-hotspot neighbourhoods. For instance, the proportion of unmarried residents was 34% in non-hotspots and 37.8% in hotspots, an anomalous increase of only 11%. Similarly, median household income evidenced a discrepancy of less than $2,000 between IPV hotspots and other areas of the city. The median income in hotspot areas was unusually high ($67,410); it was only 2% lower than in non-hotspots. Conversely, all other cities in the Southeast found that hotspot neighbourhoods had a median income at least 20% lower than non-hotspot neighbourhoods, and no other IPV hotspot recorded a median household income greater than $56,000.

TABLE 30: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – WEST KELOWNA

	Hotspots	Non-Hotspots	t value
Population Density	1,211	863	-1.19
Population Change 2006-2011 (%)	4.1%	11.5%	0.62
Young Males - Aged 15-24 (%)	6.5%	6.2%	-0.38
Unmarried (%)	37.8%	34.0%	-0.75
Mobility - Last 5 Years (%)	39.4%	42.8%	0.51
Immigration (%)	13.3%	14.3%	0.36
Aboriginal Population (%)	7.4%	4.3%	-1.55
Median Household Income ($)	$67,410	$69,073	0.21
Unemployment Rate	14.6%	6.5%	-2.30*
Labour Force Participation (%)	64.4%	66.5%	0.25
Less Than High School Education (%)	7.5%	6.2%	-0.52
Renters (%)	22.2%	12.2%	-1.73
Housing Condition - Major Repairs (%)	1.1%	1.9%	0.45

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN PENTICTON

There was a total of 94 founded IPV files reported in Penticton in 2016, which was an average of 7.8 files each month. In terms of the days of the week, only 43.6% of the files were received on a Friday, Saturday, or Sunday. There were two days of the week where IPV files were more likely to be reported in Penticton. Specifically, 18.1% of files were reported on Sundays and Wednesdays, respectively. The smallest number of files were reported on Saturdays (10.6 per cent) followed by Mondays (11.7 per cent). There was also a slight tendency for files to be reported at night, as 57.4% of files were reported between 18:00 and 0600.

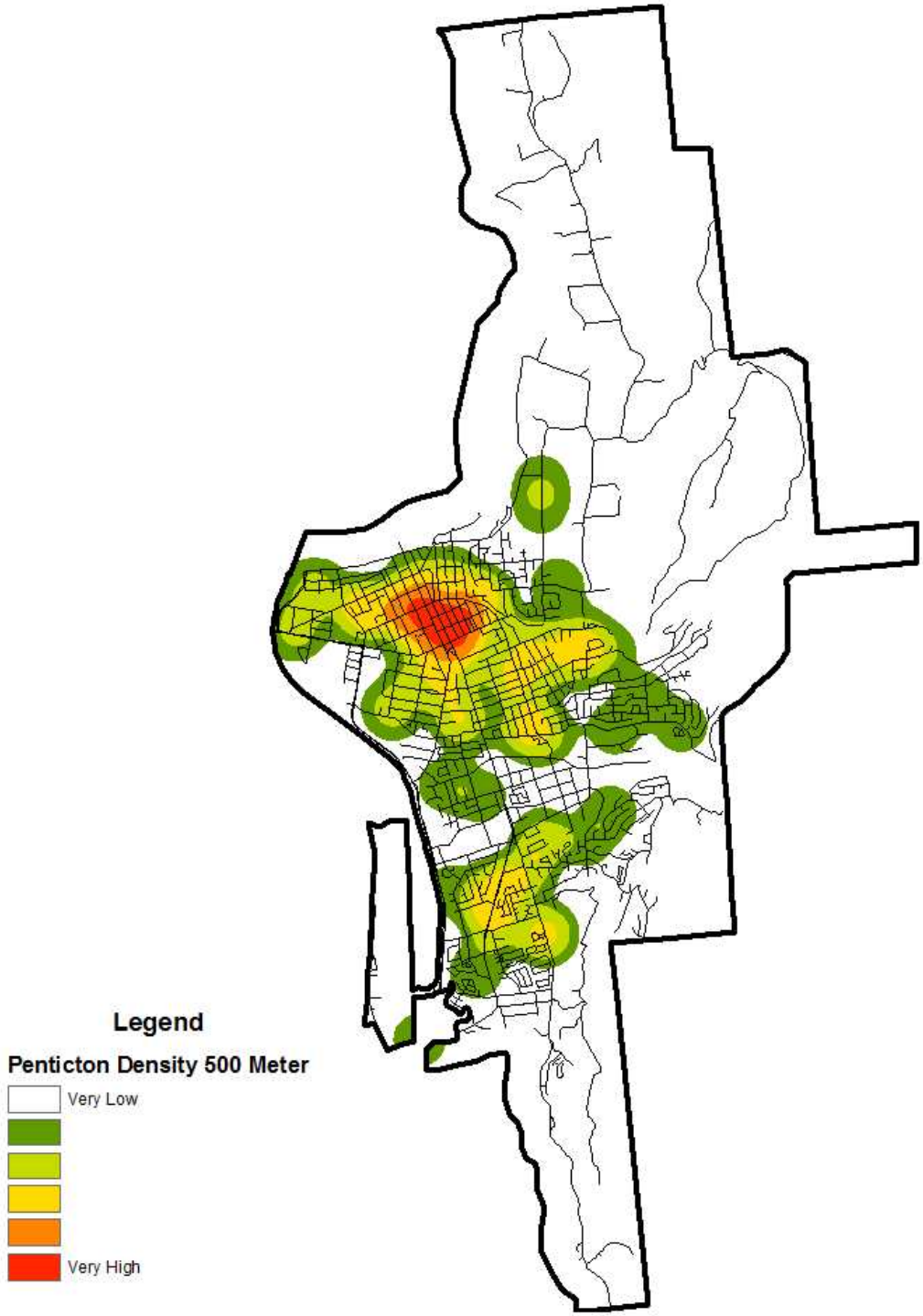
Over two-thirds (70.2 per cent) of founded IPV files in Penticton were scored as a common assault. The second most common UCR category was an assault with a weapon or an assault causing bodily harm (8.5 per cent). Uttering threats was the third most common UCR category (6.4 per cent); when combining the threats and harassment related UCR categories, these offences composed 13.8% of all files in Penticton (4.3 per cent were criminal harassment and 3.2 per cent were harassing communications). Three-quarters (75.5 per cent) of founded IPV files resulted in a charge being laid or recommended against the accused. Slightly more than one-in-ten files was cleared

through departmental discretion, while 7.4% were considered founded not cleared. In four cases, the complainant would not agree to charges.

Similar to West Kelowna, there were no youth accused in Penticton. Instead, the ages of the accused ranged from 20 years old to 93, with the average age of the accused being 37.3 years old. Nine out of ten accused were men (90.8 per cent), and were Caucasian (90.0 per cent). Less than one-tenth of the accused were Aboriginal (7.5 per cent), and only one accused was Hispanic and one accused was South Asian. The relationship status was generally equally divided between current spouses (34.8 per cent) and current dating partners (32.6 per cent). Another one-fifth (18 per cent) were in a former dating relationship, while 7.9% were formerly married.

As demonstrated in Figure 33, for the most part, in Penticton in 2016, intimate partner violence was concentrated in just one area of the city. This was an area made up of residential sections and small businesses and commercial blocks. The hotspot ranged from just north or Wade Avenue in the north to just south of Eckhardt Avenue E in the south and between Winnipeg Street in the west to Papineau Street in the east.

FIGURE 33: INTIMATE PARTNER VIOLENCE HOTSPOTS IN PENTICTON



The pattern of results for Penticton was somewhat more closely aligned to the first four municipalities of the Southeast. As shown in Table 31, the most important predictor of variations in the IPV hotspot compared to non-hotspot areas was not marital status, but renters. In Penticton, the proportion of renters in hotspot neighbourhoods was about 2.5 times that of non-hotspots. The proportion of unmarried persons was also a significant indicator, with the percentage in hotspots 43% higher than in non-hotspots. Population density and residential mobility, variables of mixed importance in the Southeast, but which were consistently impactful in the Lower Mainland, were significantly higher in IPV hotspot neighbourhoods by 88% and 37%, respectively. Despite median household income being 22% lower in hotspot neighbourhoods, a disparity which was noted in every municipality to some extent, that finding did not reach even marginal statistical significance. There was little substantive variation in hotspot and non-hotspot areas for the remainder of the variables, and no statistically significant differences were found.

TABLE 31: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – PENTICTON

	Hotspots	Non-Hotspots	t value
Population Density	**3,679**	**1,949**	**-4.34****
Population Change 2006-2011 (%)	**9.0%**	**1.6%**	**-1.77**
Young Males - Aged 15-24 (%)	**5.7%**	**5.5%**	**-0.42**
Unmarried (%)	**57.9%**	**42.8%**	**-4.81****
Mobility - Last 5 Years (%)	**59.4%**	**43.3%**	**-3.66****
Immigration (%)	**11.0%**	**13.2%**	**1.00**
Aboriginal Population (%)	**3.8%**	**5.3%**	**0.54**
Median Household Income ($)	**$40,735**	**$52,334**	**1.86**
Unemployment Rate	**5.2%**	**5.9%**	**0.30**
Labour Force Participation (%)	**58.2%**	**58.2%**	**0.00**
Less Than High School Education (%)	**10.8%**	**9.5%**	**-0.37**
Renters (%)	**61.9%**	**25.0%**	**-5.53****
Housing Condition - Major Repairs (%)	**3.6%**	**4.2%**	**0.25**

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN MERRITT

After Penticton, where 94 founded IPV files occurred in 2016, there was a large drop in the number of files reported in 2016 in the next most common municipality of Merritt, where 64 founded IPV files were reported, or an average of 5.3 each month. However, in Merritt, in 2016, 57.8% of files were reported to the police on a Friday, Saturday, or Sunday, with the most common day of the week being Saturdays (19.1 per cent). Moreover, a majority (57.8 per cent) of intimate partner violence files were generated between 18:00 and 06:00.

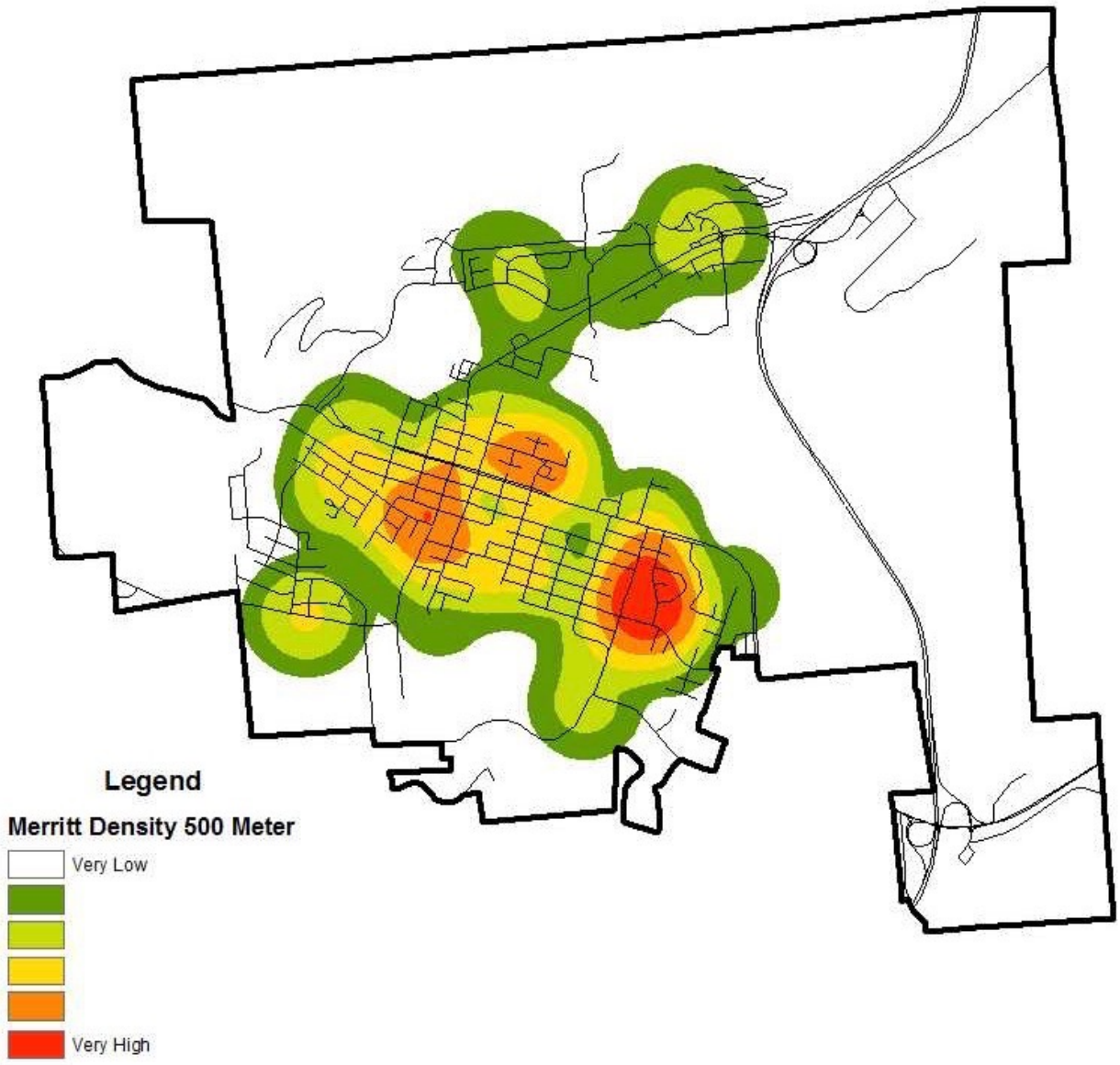
Consistent with many of the other municipalities in the Southeast, slightly more than two-thirds of the founded IPV files in 2016 were scored as a common assault (70.3 per cent). However, a slightly higher proportion of files in Merritt were scored as an assault with a weapon or an assault causing bodily harm (12.5 per cent). In contrast, only one-in-ten (9.4 per cent) files related to threatening or harassing behaviours. Specifically, 7.8% were scored as uttering threats, while one file was scored as criminal harassment. No files were scored as harassing communications. Over four-fifths (85.9

per cent) of the accused in Merritt had a charge laid or recommended against them. Very few files were cleared through departmental discretion (6.3 per cent) or were coded as the complainant not agreeing to charges (4.7 per cent), and only 3.1% were considered founded not cleared.

There were two youth accused in Merritt, so the age range of accused was between 15 years old to 59 years old. The average age of the accused was lower than in many other Southeast District municipalities, at 34.5 years of age. Unlike many of the other municipalities reviewed so far, there was a very high proportion of female accused, as they composed one-third (32.3 per cent) of the accused in Merritt. Similarly, the ethnicity of the accused varied substantially from the other municipalities, in that over half (56.7 per cent) of the accused were Aboriginal, whereas only one-third (38.3 per cent) were Caucasian. There were only two (3.3 per cent) South Asian accused and one (1.7 per cent) Hispanic accused. The vast majority of accused were in a relationship at the time with the victim. Specifically, 42.9% were in a dating relationship, while 34.9% were in a marital relationship. Another one-fifth were in a former relationship; most of this was composed of former dating partners (14.4 per cent of all files) as compared to former spouses (4.8 per cent of all files).

As demonstrated in Figure 34, with the small number of intimate partner violence files, it was not surprising that there was one main hotspot. While there were two other areas of high concentration of intimate partner violence files in Merritt in 2016, the main hotspot was a residential neighbourhood in the central-south portion of the city. More specifically, the hotspot was just south of Quilchena Avenue and Granite Place to the north and continuing for about one block south of Clapperton Avenue in the south. In terms of the east and west boundaries of the hotspot, it went from approximately Cranna Crescent and Duncan Street in the east to just west of Douglas Street in the west. Of note, there was also a very small hotspot centered on the Home Hardware Building Centre on at the corner of Coldwater Avenue and Voght Street, which was surrounded by an area of high volume for intimate partner violence files that stretched for several blocks in all directions.

FIGURE 34: INTIMATE PARTNER VIOLENCE HOTSPOTS IN MERRITT



By and large, the results for Merritt followed those of West Kelowna, where not a single predictor retained statistical significance once the Bonferroni correction was applied. As demonstrated in Table 32, the only variable that reached marginal significance was the proportion of unmarried persons. Consistent with previous municipalities, IPV hotspots had a higher percentage of unmarried residents (by 30 per cent) than other areas of the city. Despite hotspot areas having lower median income (20 per cent), and a higher proportion of renters (112 per cent), neither of these indicators were significant. Merritt was the only municipality alongside West Kelowna that had a less residential mobility in hotspot areas (9 per cent lower), a notable, but insignificant difference. This municipality also showed the starkest discrepancy in education in that IPV hotspots

had a limited education proportion that was four times that of non-hotspots. However, neither educational attainment, nor any of the remaining indicators, were effective predictors of IPV.

TABLE 32: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – MERRITT

	Hotspots	Non-Hotspots	t value
Population Density	1,453	607	-1.23
Population Change 2006-2011 (%)	9.3%	2.9%	-0.34
Young Males - Aged 15-24 (%)	6.9%	5.4%	-1.19
Unmarried (%)	46.4%	35.6%	-2.54*
Mobility - Last 5 Years (%)	45.3%	49.9%	0.33
Immigration (%)	9.2%	7.5%	-0.40
Aboriginal Population (%)	10.5%	11.0%	0.11
Median Household Income ($)	$55,755	$69,738	1.41
Unemployment Rate	10.5%	2.8%	-0.85
Labour Force Participation (%)	57.0%	57.5%	0.05
Less Than High School Education (%)	22.2%	5.4%	-1.59
Renters (%)	29.4%	13.9%	-1.43
Housing Condition - Major Repairs (%)	5.7%	4.8%	-0.18

* $p < .05$; ** $p < .004$

COMPARING FOUNDED IPV FILES IN 2016 IN THE TOP SEVEN MUNICIPALITIES IN THE SOUTHEAST DISTRICT

Once again, some statistical comparisons were conducted between the top seven municipalities in the Southeast District to identify meaningful differences. There was no statistically significant difference in the number of founded IPV files reported by month, x^2 (66) = 81.8, $p > .05$, or day of the week, x^2 (36) = 42.5, $p > .05$, nor did the accused in each municipality differ significantly by average age, F (6, 880) = 0.92, $p > .05$. Similarly, the proportion of youth versus adult accused did not differ significantly, x^2 (6) = 8.0, $p > .05$.

However, the top seven municipalities for founded IPV calls in the Southeast District did differ significantly on several other variables. First, the assigned UCR score differed by municipality, x^2 (42) = 58.6, $p < .05$. Consistent with the Lower Mainland district, this difference was mainly concentrated in the proportion of files scored as a common assault and the proportion scored as either harassing communications or uttering threats. As shown in Table 33, approximately two-thirds of founded IPV files in the Southeast District were scored as common assault. However, this scoring was significantly less likely to be used in Vernon, where files were three times as likely to be scored as harassing communications when compared to the typical proportion of files. Of note, the average of 5.5% is highly skewed based on the inclusion of Vernon – without this municipality, the average proportion of files scored as harassing communications dropped to 3%, suggesting that files in Vernon were five times as likely to be scored as harassing communications compared to the IPV files occurring in other municipalities. Although not as distinct, there was also a difference when examining the proportion of files scored as uttering threats. The average proportion of files scored with this UCR was 7.7%; however, files in West Kelowna and Cranbrook were more likely to use this UCR code than other municipalities, in particular, when compared to Kamloops, where the uttering threats UCR code was used in less than 5% of files. Again, this data suggests that the RCMP

may want to undertake a file review study whereby they examine the use of harassment and threats related UCR scores to ensure they are being used accurately and consistently in all jurisdictions.

TABLE 33: USE OF COMMON ASSAULT VERSUS HARASSMENT/THREATS UCR CODES IN THE TOP 7 SOUTHEAST DETACHMENTS

	% Common Assault	% Harassing Communications	% Uttering Threats
Kelowna	68.9%	4.2%	7.3%
Kamloops	70.4%	6.3%	4.4%
Vernon	59.2%	15.0%	8.8%
Cranbrook	63.4%	3.0%	11.9%
West Kelowna	70.7%	1.0%	13.1%
Penticton	70.2%	3.2%	6.4%
Merritt	70.3%	0.0%	7.8%
Totals	67.8%, N = 721	5.5%, N = 58	7.7%, N = 82

The CCJS status of founded IPV files also differed significantly by municipality, x^2 (24) = 55.1, p < .001. While overall approximately 70% of founded IPV files in the Southeast Distract were cleared by charge, a much higher proportion of files were cleared by charge in Merritt compared to the other detachments (see Table 34). Conversely, Merritt was significantly less likely to code files as founded not cleared, particularly when compared to Vernon and Kamloops. Less than 5% of files in Merritt were considered founded not cleared, compared to over one-fifth of files in these other two detachments. Regarding the proportion of files cleared by departmental discretion, the differences were not as substantial, the Kelowna and Penticton detachments were more likely to clear files through departmental discretion, particularly when compared to Vernon and Cranbrook.

TABLE 34: COMPARING THREE FILE OUTCOME CATEGORIES IN THE TOP 7 SOUTHEAST DETACHMENTS

	% Charged	% Departmental Discretion	% Founded Not Cleared
Kelowna	66.1%	13.5%	15.6%
Kamloops	68.1%	6.7%	21.5%
Vernon	72.8%	4.1%	22.4%
Cranbrook	76.2%	4.0%	17.8%
West Kelowna	69.7%	9.1%	16.2%
Penticton	75.5%	12.8%	7.4%
Merritt	85.9%	6.3%	3.1%
Totals	70.9%, N = 754	8.6%, N = 92	16.8%, N = 179

Relationship status also differed significantly by municipality, x^2 (24) = 57.1, p < .001. Specifically, files in Cranbrook and West Kelowna were less likely to involve a currently dating couple, while files in West Kelowna were more likely to involve former spouses (see Table 35). In addition, files in Vernon were more likely to involve a formerly dating couple, but less likely to involve a currently married couple. When comparing the proportion of marital versus dating relationships, regardless of whether they were current or former relationships, there was a significant difference in the relationship patterns between the seven municipalities in the Southeast District, x^2 (6) = 25.4, p < .001. Overall, 59.8% of accused were in a current or former dating relationship with the victim; however, a higher proportion of accused in Vernon (69.8 per cent) were in this relationship type,

while only a minority of accused in both West Kelowna (44.3 per cent) and Cranbrook (44.9 per cent) were in a current or former dating relationship with the victim. When considering whether the accused was in a current or former relationship with the victim, regardless of relationship type, there was not a significant difference, x^2 (6) = 11.3, p > .05. Overall, 77.3% of accused in these seven municipalities of the Southeast District were in a current relationship with the victim (either as a spouse or boyfriend/girlfriend), while 22.3% were in a former relationship, and this did not differ substantially by municipality.

TABLE 35: COMPARING THE MARITAL STATUS OF ACCUSED IN THE TOP 7 SOUTHEAST DETACHMENTS

	Dating		Marital	
	Current	*Former*	*Current*	*Former*
Kelowna	41.5%	17.8%	34.5%	1.8%
Kamloops	46.2%	16.2%	31.2%	1.7%
Vernon	40.2%	26.2%	23.8%	4.9%
Cranbrook	27.8%	11.1%	41.1%	6.7%
West Kelowna	27.7%	13.8%	42.6%	9.6%
Penticton	32.6%	18.0%	34.8%	7.9%
Merritt	42.9%	14.3%	34.9%	4.8%
Totals	39.1%, N = 378	17.3%, N = 167	33.8%, N = 327	4.1%, N = 40

Generally, slightly more than three-quarters (78.8 per cent) of files involved a male accused. However, this differed significantly as well, x^2 (6) = 14.5, p < .05. Specifically, files in Penticton were significantly more likely to involve a male accused (90.8 per cent), whereas files in Merritt were significantly less likely to involve a male accused (67.7 per cent).

The ethnicity of the accused also varied by municipality in the Southeast District, x^2 (12) = 103.5, p < .001. Given that there were a large number of ethnic codes, but only a small number of accused who were identified as an ethnicity other than Caucasian or Aboriginal, the ethnic groups of Asian, Black, Hispanic, Middle Eastern, or South Asian were combined into the "Other" category. These three groups were then compared across the seven municipalities in the Southeast District. Generally, 75% of accused in the Southeast District were Caucasian. However, a higher proportion of accused in Penticton (90 per cent) and Vernon (87.7 per cent) were Caucasian. Merritt was significantly less likely to have Caucasian accused (38.3 per cent). Kamloops and Cranbrook were also less likely to have Caucasian accused, but the difference was not as substantial (67.8 per cent and 65.8 per cent, respectively). In contrast, the accused in Merritt were significantly more likely to be Aboriginal (56.7 per cent) when compared to the typical Southeast municipalities (18.4 per cent overall). Again, Kamloops and Cranbrook had a higher proportion of Aboriginal accused (25.6 per cent and 25.3 per cent, respectively) than the other municipalities, but this difference was again not substantial. Regarding the "other" ethnic group, 6.6% of accused overall were considered an "other" ethnicity; the proportions were slightly higher in Kelowna (9.8 per cent) and Cranbrook (8.9 per cent), and slightly lower in Penticton (2.5 per cent) and Vernon (3.8 per cent).

Nearly three-quarters (73.6 per cent, n = 754) of files in the Southeast District resulted in a charge being recommended. Again, the ten predictors produced a significant model [x^2 (10) = 33.5, p < .001]. Although the amount of variance explained was only 9% (Nagelkerke R^2 = 0.09), 90.3% of

files were correctly classified by the model. Of the ten predictors, three were significant predictors of a charge being laid (see Table 36). Interestingly, in the Southeast District, a UCR relating to assault with a weapon or an assault causing bodily harm was not significantly predictive of charges being recommended. However, consistent with the previous results, a harassment or threats related UCR was less likely to result in charges being recommended. Males were again 3.5 times more likely to be charged than females. However, the strongest predictor of being charged in the Southeast District was being Aboriginal. Aboriginal suspects were four times as likely to have a charge recommended against them.

TABLE 36: LOGISTIC REGRESSION MODELS PREDICTING FILE OUTCOMES IN THE SOUTHEAST DISTRICT

Predictors	Model = Charges				Model = Discretion			
	B	S.E.	Wald	Exp (B)	B	S.E.	Wald	Exp (B)
Constant	0.75	0.62	1.48	2.12	-0.69	0.62	1.22	0.50
Caucasian	0.29	0.40	0.53	1.34	-0.36	0.40	0.79	0.70
Aboriginal	1.44	0.57	6.39	4.21*	-1.44	0.57	6.40	0.24*
South Asian	0.08	0.87	0.01	1.09	-0.10	0.88	0.01	0.91
Asian	0.20	0.86	0.05	1.22	-0.21	0.86	0.06	0.81
Age	0.01	0.01	0.82	1.01	-0.01	0.01	0.70	0.99
Current Relationship	-0.20	0.33	0.38	0.82	0.14	0.33	0.18	1.15
Spouse	0.03	0.28	0.01	1.03	-0.02	0.28	0.01	0.98
Male	1.25	0.28	20.69	3.49***	-1.33	0.28	22.81	0.26***
Assault Wpn/CBH	0.62	0.49	1.61	1.87	-0.58	0.49	1.38	0.56
Harass/Threats	-0.96	0.38	6.25	0.39*	1.02	0.39	6.91	2.76**

* $p < .05$ ** $p < .01$ *** $p < .001$

Again, a small number of cases (9.0 per cent, n = 92) in the Southeast District resulted in a file being cleared through departmental discretion. Still, the model was significant, x^2 (10) =35.11, p < .001. The predictors explained approximately one-tenth of the variance in files being cleared through departmental discretion (Nagelkerke R^2 = 0.096), and 90.7% of cases were correctly classified. Having a file scored as harassment or threat related increased the odds that it would be cleared through departmental discretion nearly threefold. In contrast, male and Aboriginal suspects were less likely to have their files cleared through departmental discretion.

The first thing that stands out of the summary of socio-economic and demographic effects for the Southeast district of the province provided in Table 37 is that there are considerably fewer fully significant effects. The structural factors did a solid job of predicting IPV hotpots for Kelowna, and

performed adequately in Kamloops, Vernon, and perhaps Penticton. The utility of the variables in the other municipalities would best be described as minimal. Consistent with the pattern revealed for the Lower Mainland, there was a rough correspondence between IPV levels and the strength of effects. Again, those municipalities that experienced the highest IPV levels tended to have a greater number of significant effects, while those areas at the lower end of the IPV spectrum tended to show far fewer. This would seem to confirm our previous conclusion, that the effects of structural variables are more readily apparent in neighborhoods where IPV is more common.

The pattern of variables effects displayed in Table 37 is, compared to the effects in the Lower Mainland, muddier and less amenable to categorization. Some of the "big 5" variables identified for the Lower Mainland showed the strongest overall effects, particularly unmarried persons, renters, and mobility. But, median household income was significant in fewer than half the areas, and population density only in two. Conversely, several variables showed no or virtually no substantive effects; population change, young males, and labour force participations. Were it not for the findings in Kelowna and Kamloops, immigration, Aboriginal population, lower education and poor housing conditions would similarly have had no significant effects.

TABLE 37: SUMMARY OF SIGNIFICANT T VALUES ACROSS MUNICIPALITIES – SOUTHEAST

	Kelowna	Kamloops	Vernon	Cranbrook	West Kelowna	Penticton	Merritt
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 < .05; ** p < .004

Founded IPV Files in 2016 in the North District

There were 1,640 founded IPV files in the North District in 2016. Again, given the large number of jurisdictions with comparatively small numbers of files, the subsequent analyses focused on the municipalities reporting at least 50 founded IPV files in 2016 (as highlighted in Table 38). Of note, there were 102 additional municipalities in the North District with at least one, but less than 10 IPV

files reported in 2016 that are subsequently not identified in Table 38. Given all this, the eight highlighted municipalities in the North District that had more than 50 founded IPV files each in 2016 and will be analysed further.

TABLE 38: FOUNDED IPV FILES IN THE NORTH DISTRICT 2016 (N = 1,640)

	Number	Per Cent of Southeast
Prince George	314	19.1%
Fort St. John	126	7.7%
Prince Rupert	108	6.6%
Terrace	88	5.4%
Quesnel	82	5.0%
Williams Lake	80	4.9%
Fort St. James	57	3.5%
Dawson Creek	56	3.4%
Mackenzie	40	2.4%
Vanderhoof	39	2.4%
Smithers	36	2.2%
Fort Nelson	34	2.1%
Kitimat	31	1.9%
Burns Lake	30	1.8%
Chetwynd	27	1.6%
Thornhill	21	1.3%
Bella Bella	20	1.2%
Houston	19	1.2%
Bella Coola	17	1.0%
Kispiox	15	0.9%
Klemtu	14	0.9%
Masset	13	0.8%
Fort Nelson IR	12	0.7%
Fraser Lake	12	0.7%
Tachie	11	0.7%
Anahim Lake	10	0.6%
Moricetown	10	0.6%
Tumbler Ridge	10	0.6%
Remaining Municipalities	286	17.4%
Unknown Municipalities	22	1.6%

FOUNDED IPV FILES IN 2016 IN PRINCE GEORGE

In 2016, 314 IPV files were reported to the Prince George RCMP or, on average, 26.2 files per month. Similar to other municipalities, half (50.8 per cent) of all files were reported to the Prince George RCMP between Fridays and Sundays, with the most common day being Saturday (18.8 per cent). A slightly higher proportion of IPV-related reports were made between 18:00 and 06:00 in Prince George (51.3 per cent). There was a slight peak between 21:00 and 21:59 (7.6 per cent) followed by between 22:00 and 22:59 (6.7 per cent).

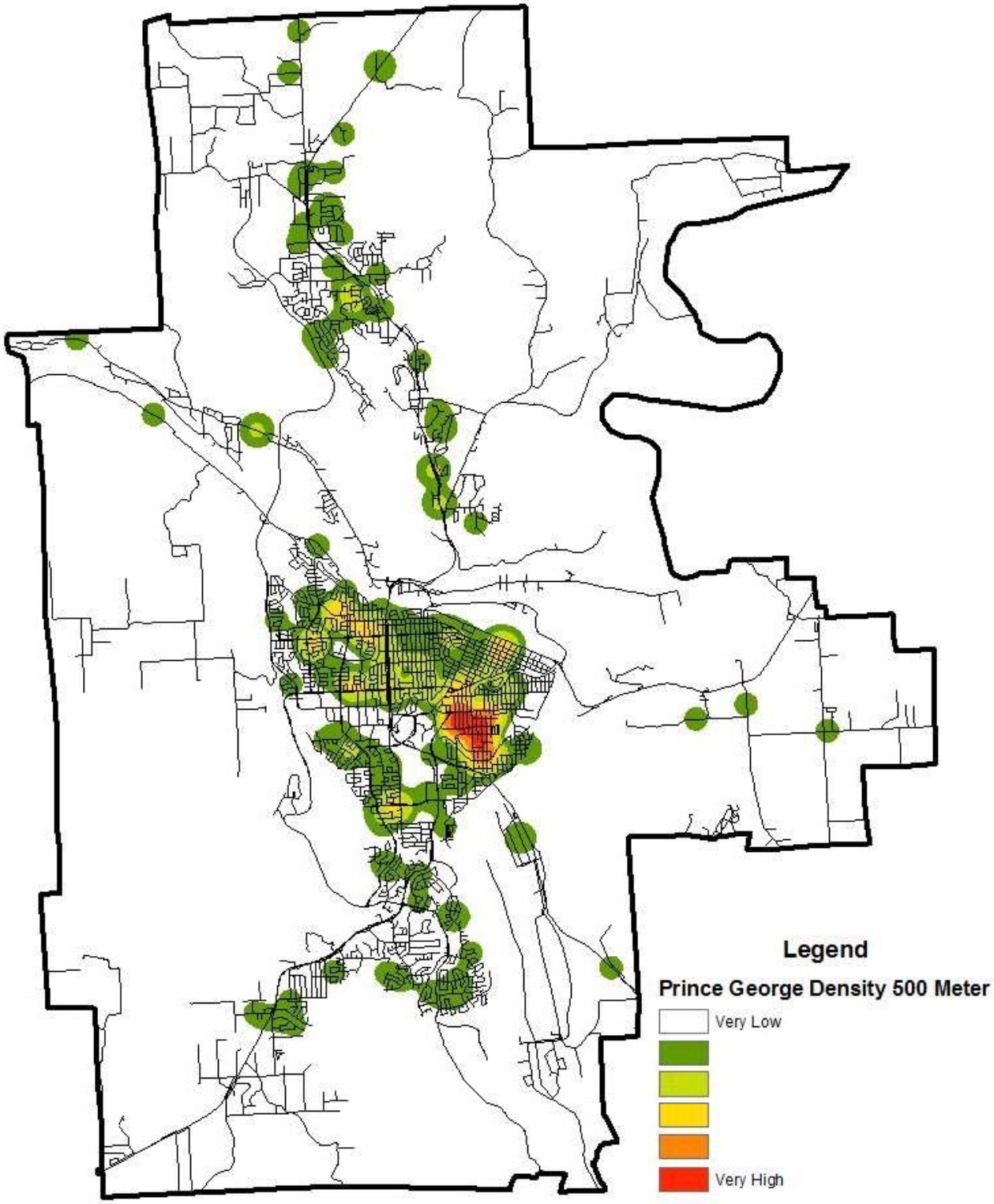
Two-thirds (66.2 per cent) of files in Prince George were scored as a common assault, while 14% were scored as an assault with a weapon or an assault causing bodily harm. One-tenth of files (10.5 per cent) related to harassment or threats; specifically, 3.8% of files were coded as criminal harassment, 3.8% as uttering threats, and 2.9% as harassing communications. Slightly more than three-quarters (76.8 per cent) of the accused had charges laid or recommended against them.

Compared to the previous municipalities reviewed, a higher proportion of cases in Prince George involved a complainant who did not want to lay charges (9.9%, n = 31). This CCJS status was more common in Prince George than were the CCJS statuses of considering a file founded, but not cleared (7.0 per cent), or cleared through departmental discretion (6.1 per cent).

The age of accused in Prince George ranged between 13 years old and 71 years old, with the average age being 35.6 years. Slightly less than one-quarter (23.1 per cent) of accused were female, and a slight majority (51.7 per cent) were Caucasian, while another 44.9% were Aboriginal. At the time the file was reported, slightly more than one-third (38.3 per cent) of accused were in a dating relationship with the victim, while slightly fewer (34.3 per cent) were in a marital relationship. In total, 15.8% were an ex-dating partner of the victim, while 5% were separated or divorced from the victim.

As demonstrated in Figure 35, There was one main hotspot for intimate partner violence files in Prince George in 2016 that covered several blocks of a residential area. The hotspot stretched from 20th Avenue at the northern end of the hotspot to Diefenbaker Avenue in the south and from just east of Upland Street at the western border of the hotspot to just west of Norwood Street to the east.

FIGURE 35: INTIMATE PARTNER VIOLENCE HOTSPOTS IN PRINCE GEORGE



Prince George was unique among the municipalities of the North in that most of the indicators proved to be, at least marginally, significant predictors of IPV (see Table 39). The variables unmarried persons, median household income, and renters were notable for their consistency. In the North, all three were at least marginally, if not fully, significant more often than not. In Prince George the largest effect was that of marital status, where the proportion of unmarried persons was 36% larger in hotspot areas. Similarly, the proportion of renters was more than twice as large in IPV hotspots compared to non-hotspots. The discrepancy in income was also notable, in that hotspot neighbourhoods had a median household income just over 40% lower than other areas of the city, the largest difference of all the municipalities in the North. The percentage of Aboriginal residents was significantly higher in hotspot areas by 209%; however, Aboriginal population was not significant in any other city, save for Terrace. Residential mobility was almost one-and-a-half times higher in hotspot neighbourhoods, but this indicator was only significant in Prince George. Moreover, Prince George was also unusual in terms of immigration, as the variable achieved marginal significance, but hotspot areas showed slightly lower levels of immigration than non-hotspots. Immigration was not a significant predictor of IPV in any other city in the North or the Southeast, and this was likely due to the relatively low levels of immigration in these regions. Labour force participation, the proportion of those with less than a high school education, and housing condition were marginally significant. Population change, although not significant, was notable in that hotspot areas had a slight decrease in population between 2006 and 2011, whereas there was a very minor increase in non-hotspot areas. For the remaining indicators, the differences between hotspot and non-hotspot neighbourhoods were not statistically significant. Of those, population density and population change never achieved even marginal significance in any city in the region.

TABLE 39: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – PRINCE GEORGE

	Hotspots	Non-Hotspots	t value
Population Density	2,339	1,679	-1.86
Population Change 2006-2011 (%)	-4.3%	1.5%	1.38
Young Males - Aged 15-24 (%)	7.9%	7.7%	-0.37
Unmarried (%)	59.8%	43.9%	-5.05**
Mobility - Last 5 Years (%)	61.0%	43.0%	-4.49**
Immigration (%)	5.6%	9.6%	2.06*
Aboriginal Population (%)	34.9%	11.3%	-3.92**
Median Household Income ($)	$40,992	$68,643	3.85**
Unemployment Rate	12.2%	8.5%	-1.18
Labour Force Participation (%)	56.8%	69.7%	3.00*
Less Than High School Education (%)	24.5%	11.8%	-2.71*
Renters (%)	57.0%	26.9%	-4.15**
Housing Condition - Major Repairs (%)	10.9%	5.0%	-2.26*

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN FORT ST. JOHN

In 2016, a total of 126 IPV files were reported to the Fort St. John RCMP. On average, this resulted in 10.5 files reported each month. A majority of files (54.8 per cent) were received by the Fort St. John

RCMP on a Friday, Saturday, or Sunday, with Sunday being the most frequent day of the week (21.4 per cent). Overall, 53.3% of all founded IPV files in Fort St. John were reported between 18:00 and 06:00. Surprisingly, the peak time for reporting a founded IPV incident in Fort St. John was between 02:00 and 02:59 (9.5 per cent). This is inconsistent with the other municipalities reviewed so far, as typically file reporting declined after midnight through until late-morning.

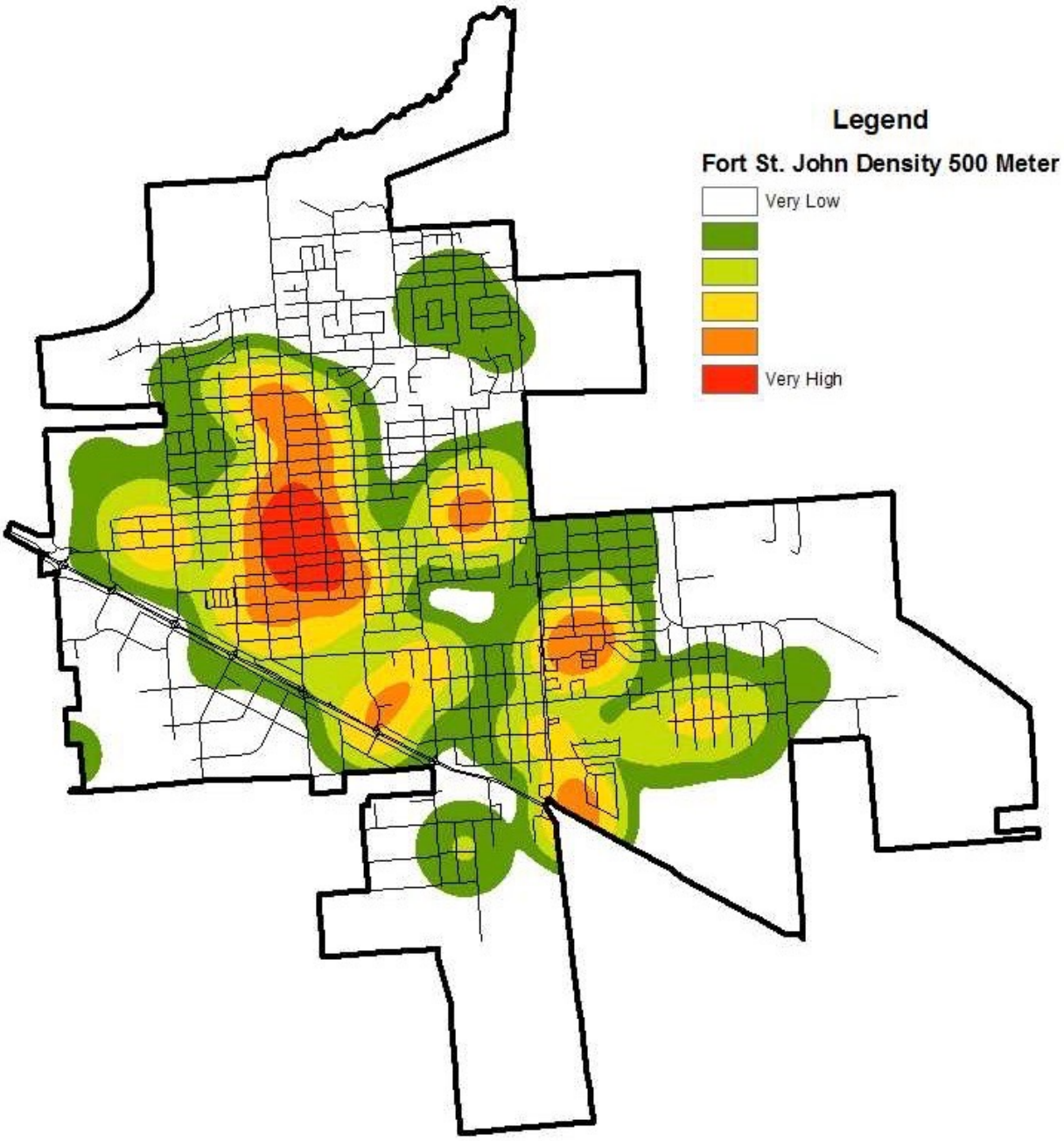
Compared to Prince George, a much higher proportion of founded IPV files in Fort St. John were scored as a common assault (74.6 per cent), while half as many were scored as an assault with a weapon or an assault causing bodily harm (4.8 per cent). The use of harassment and threatening related UCR codes was also low in Fort St. John, with 6.3% of files being scored as uttering threats, 1.6% as harassing communications, and 0.8% as criminal harassment. Interestingly, the third most common UCR utilized in Fort St. John was forcible confinement (5.6 per cent), which was not a code commonly used in the other municipalities.

Also, unlike the other municipalities, a very high percentage (92.1 per cent) of founded IPV files in Fort St. John resulted in a charge being laid or recommended against the accused. In total, 5.6% of files were considered founded not cleared, and 2.4% of files involved a complainant who did not agree to file any charges. No files were cleared through departmental discretion.

The accused in Fort St. John were, on average, younger than in the other municipalities, with an average age of 31.9 years old. The age range was from 15 years old to 69 years old. One-third of founded IPV police files involved a female accused, which was a higher percentage than many other municipalities. Two-thirds (67.3 per cent) of the accused were Caucasian, while a little over one-quarter (28.8 per cent) were Aboriginal. At the time the file was reported, nearly half (45.9 per cent) of the accused were in a dating relationship with the victim, while nearly one-third (31.1 per cent) were in a marital relationship. Slightly more than one-tenth (13.1 per cent) were in a former dating relationship, while 3.3% were separated or divorced from the victim.

With respect to hotspots for intimate partner violence in Fort St. John in 2016, as demonstrated in Figure 36, there was one main hotspot. The center of the hotspot was near the intersection of 100 Avenue and 100 Street, which is a small commercial area. However, the hotspot extended to include a few blocks of homes surrounding this commerical area. More specifically, the hotspot stretched from 96 Avenue at its south end to just past 103 Avenue at its northern most point. At its western most point, the hotspot ended at 102 Street and continued through to 97 Street at its eastern border.

FIGURE 36: INTIMATE PARTNER VIOLENCE HOTSPOTS IN FORT ST. JOHN



The findings from Fort St. John differ somewhat from those of Prince George, as only four indicators achieved even marginal significance (see Table 40). Hotspot neighbourhoods were characterized by significantly higher residential mobility (22 per cent) and the proportion of renters (105 per cent), indicators that were consistently significant in the North. Median household income was 30% lower in IPV hotspots, a discrepancy that was only marginally significant in Fort St. John, as well as most other municipalities in this region. Median income was unusually high in both hotspots and non-

hotspots in Fort St. John, with hotspot areas having a median household income of over $62,000. A somewhat anomalous finding was related to the proportion of young males. In Fort St. John, hotspots had a slightly higher proportion of males between the ages of 15 to 24. This finding differs from the rest of the North and the Southeast, where this indicator did not achieve significance at all, as well as the Lower Mainland, where the proportion of young males was frequently significantly lower in hotspot areas. Similar to Prince George, hotspot areas were notable for having a decrease in population, while the population of non-hotspots did increase somewhat; however, this was not a significant finding. There was little discrepancy among hotspot and non-hotspot neighbourhoods as to Aboriginal population, immigration, and residential mobility, and none of those indicators achieved statistical significance. No other variables were found to be significant predictors of IPV in Fort St. John.

TABLE 40: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – FORT ST. JOHN

	Hotspots	Non-Hotspots	t value
Population Density	1,992	1,843	-0.28
Population Change 2006-2011 (%)	-3.3%	4.5%	0.59
Young Males - Aged 15-24 (%)	10.5%	7.6%	-3.02*
Unmarried (%)	53.9%	40.4%	-3.27**
Mobility - Last 5 Years (%)	64.8%	53.0%	-1.80
Immigration (%)	5.6%	4.5%	-0.58
Aboriginal Population (%)	15.2%	11.2%	-1.23
Median Household Income ($)	$62,605	$89,711	2.22*
Unemployment Rate	5.8%	2.8%	-1.59
Labour Force Participation (%)	76.1%	79.2%	0.82
Less Than High School Education (%)	12.7%	16.6%	1.03
Renters (%)	65.1%	31.7%	-3.19**
Housing Condition - Major Repairs (%)	3.8%	4.7%	0.30

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN PRINCE RUPERT

In total, 108 IPV files were reported to the Prince Rupert RCMP in 2016, which resulted in an average of nine files reported each month. Reporting of IPV followed a clear pattern in Prince Rupert. One-quarter (24.1 per cent) of all founded IPV files in Prince Rupert were reported on a Saturday. This was more than 1.5 times as many files as the next closest days, which were Mondays (13.9 per cent) and Tuesdays (13.9 per cent). The majority (56.5 per cent) of founded IPV files were reported in Prince Rupert between 06:00 and 18:00. Again, consistent with the pattern in Fort St. John, one of the peak in reporting times was late at night, between 02:00 and 02:59 (8.3 per cent).

Common assault was again the most common UCR code used, with four-fifths (81.5 per cent) of founded IPV files in Prince Rupert receiving this designation. Nearly another one-tenth (9.3 per cent) were scored as an assault with a weapon or an assault causing bodily harm. Uttering threats was the third most common UCR code (2.8 per cent). Overall, the number of threats and harassment related UCR files was low, with both criminal harassment and harassing communications each composing 0.9% of all files. In raw numbers, criminal harassment/harassing

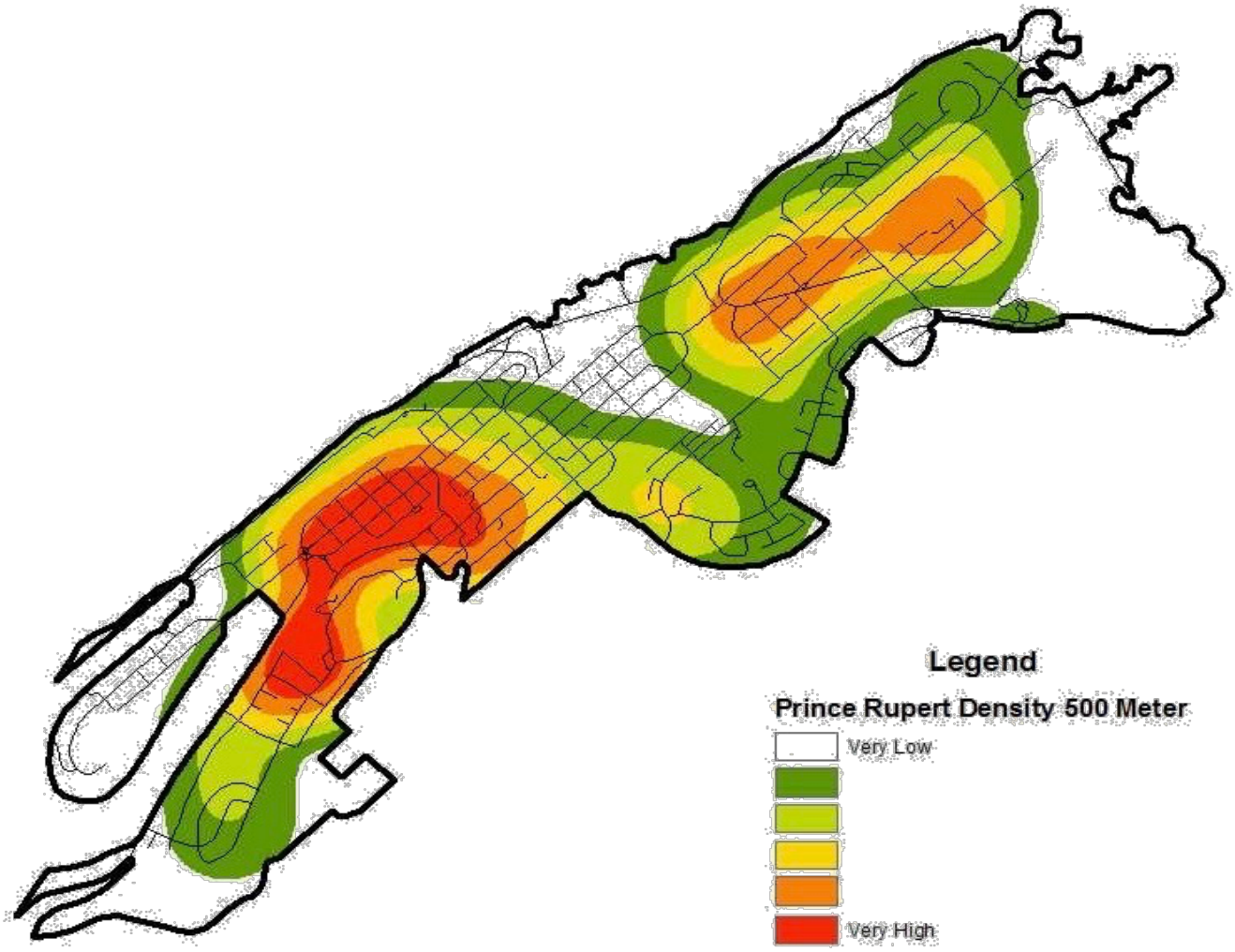
communications/uttering threats was only used in five files, whereas 88 were considered common assault.

Although not quite as high as Fort St. John, the vast majority (84.3 per cent) of all founded IPV files in Prince Rupert resulted in a laid or recommended charge against the accused. Again, no files were cleared through departmental discretion, although slightly more than one-tenth (13.0 per cent) were documented as founded not cleared.

There were no youth accused in Prince Rupert, as the ages of accused ranged from 18 years old to 66 years old, with an average age of 35 years old. Slightly more than three-quarters (76.6 per cent) of the accused were male, and 76.4% were Aboriginal. Another one-fifth (19.1 per cent) of accused were Caucasian. At the time the offence was reported, nearly half (45.3 per cent) of the accused were in a current marital relationship with the victim. Slightly less than one-third (31.1 per cent) were in a current dating relationship. Another 16% were in a former dating relationship, and only 4.7% were in a former marital relationship.

As demonstrated in Figure 37, there was one main hotspot for intimate partner violence reports to the RCMP in 2016 in Prince Rupert. This hotspot covered the residential area bounded by Park Avenue at the western border of the hotspot and followed along Summit Avenue, Borden Street, and 7th Avenue for its eastern border. Its northern border was around Tatlow Street, Agnew Place, and 4th Street, while the hotspot's southern boundary was just to the south of Ritchie Street.

FIGURE 37: INTIMATE PARTNER VIOLENCE HOTSPOTS IN PRINCE RUPERT



In Prince Rupert, only one indicator remained statistically significant following the application of the Bonferroni correction. As demonstrated in Table 41, only the proportion of renters was significantly different in IPV hotspots compared to non-hotspots, with hotspot areas having almost twice as many renters. Only two other variables reached marginal significance; unmarried persons and household income. Hotspot areas in Prince Rupert had a slightly higher proportion of unmarried residents (14 per cent). Of note, the discrepancy in marital status was typically closer to 30% in other municipalities in the North, save for one. This was possibly due to the unusually high level of unmarried residents in hotspots (greater than 40 per cent) in both Prince Rupert and Dawson Creek. Median household income was about 35% lower in hotspot areas in Prince Rupert, consistent with most findings in this region. No other differences were found to be statistically significant; IPV hotspots and non-hotspots were generally quite similar in terms of their characteristics.

TABLE 41: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – PRINCE RUPERT

	Hotspots	Non-Hotspots	t value
Population Density	2,743	2,033	-1.36
Population Change 2006-2011 (%)	-6.2%	-0.7%	1.57
Young Males - Aged 15-24 (%)	6.8%	7.7%	1.17
Unmarried (%)	49.1%	43.0%	-2.33*
Mobility - Last 5 Years (%)	33.5%	41.0%	1.40
Immigration (%)	11.1%	12.6%	0.58
Aboriginal Population (%)	44.2%	34.9%	-1.45
Median Household Income ($)	$41,014	$63,659	2.33*
Unemployment Rate	18.9%	12.2%	-1.78
Labour Force Participation (%)	59.7%	68.1%	1.87
Less Than High School Education (%)	23.0%	19.6%	-0.51
Renters (%)	58.3%	29.6%	-3.49**
Housing Condition - Major Repairs (%)	12.5%	12.4%	-0.04

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN TERRACE

In total, 88 IPV files were reported to the Terrace RCMP in 2016, an average of 7.3 files per month. There was a slight peak in IPV file reporting in Terrace on Saturdays (18.2 per cent). In contrast, the lowest number of files were reported on Fridays (11.4 per cent). Given this, it was not surprising that only 44.3% of all intimate partner violence reports were received by the Terrace RCMP on a Friday, Saturday, or Sunday. Moreover, a majority of files (60.2 per cent) reported to the Terrace RCMP occurred between 06:00 and 18:00. Contributing factors to this pattern may have been that, in 2016, there were no founded IPV files reported to the Terrace RCMP between 06:00 and 06:59 or between 08:00 and 08:59. Although there was a peak in file reporting between 15:00 and 15:59 (9.1 per cent), there was no clear and discernible pattern to file reporting in Terrace.

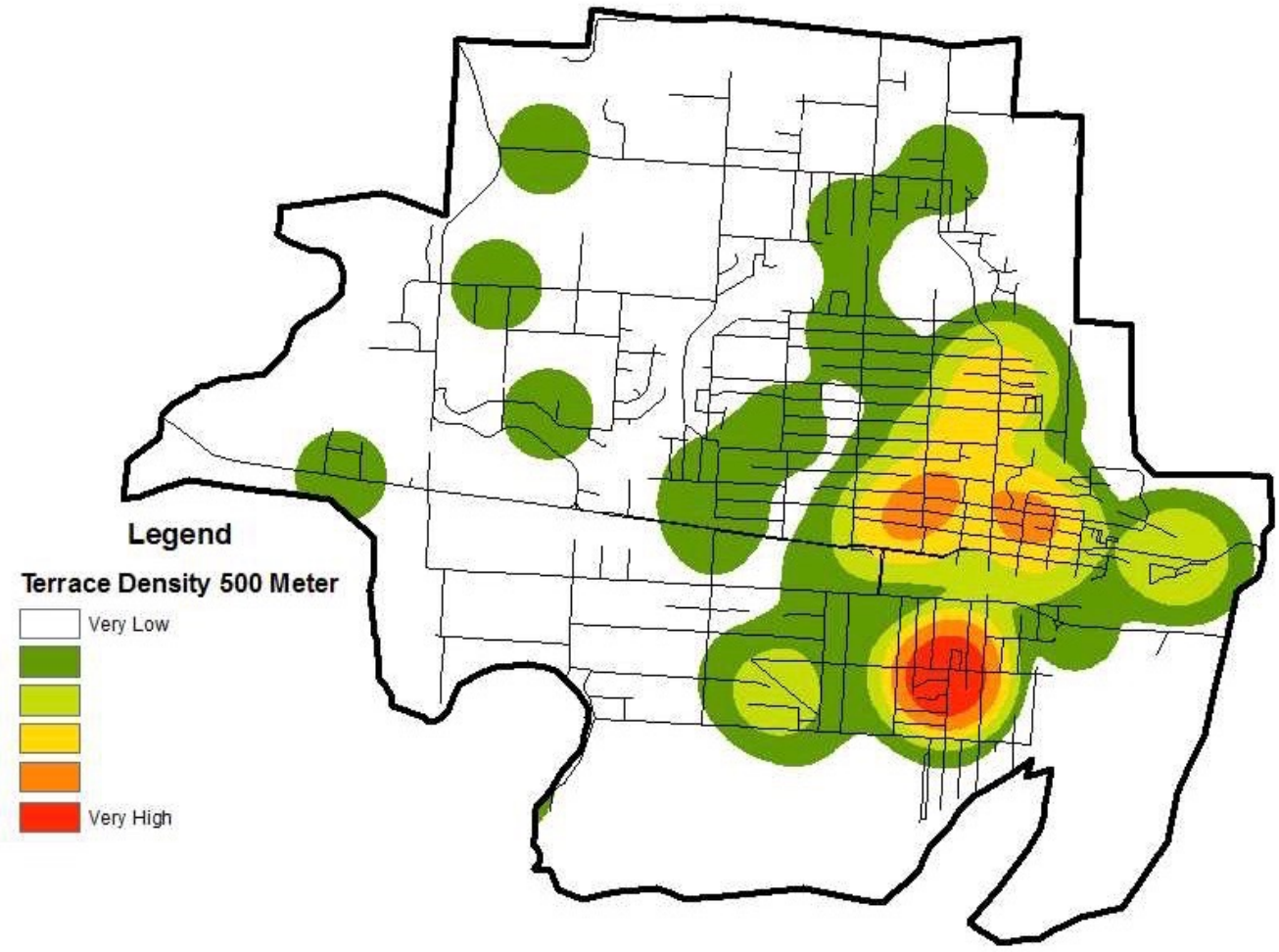
Again, the majority (78.4 per cent) of founded IPV files in Terrace were scored as a common assault. The second most common UCR code was for uttering threats (6.8 per cent). Overall, threats and harassment related UCR codes applied to slightly more than one-tenth (11.4 per cent) of the files in Terrace (3.4 per cent were harassing communications and 1.1 per cent were criminal harassment). The third most common UCR code was an assault with a weapon or an assault causing bodily harm (5.7 per cent). In terms of raw numbers, this code was only used in five of the files for 2016.

Like the other municipalities reviewed in the North District, a very high percentage of files resulted in a charge being laid or recommended against the accused (86.4 per cent). In total, 6.8 per cent of files (n = 6) were considered founded not cleared. Unlike the previous two municipalities reviewed, five files (5.7 per cent) in Terrace were concluded through departmental discretion.

Similar to Prince Rupert, there were no youth accused in Terrace. The average age of the accused was 32.1 years old, ranging from 18 years old to 60 years old. Slightly less than three-quarters (72.3 per cent) were male, and two-thirds (66.3 per cent) were Aboriginal, while the remaining 33.8% of accused were Caucasian. Relationship status was nearly equally divideed between a current dating (39 per cent) and marital (37.8 per cent) partnerships. Nearly one-fifth (18.3 per cent) were formerly dating the victim.

As demonstrated in Figure 38, there was one main hotspot with two other areas of high volume of intimate partner violence files in Terrance in 2016. The hotspot was a circle with its epicenter at the intersection of Haugland Avenue and Pear Street and stretches out for several blocks in all directions. This area is a residential area, as is the two high volume areas to the north of the main hotspot.

FIGURE 38: INTIMATE PARTNER VIOLENCE HOTSPOTS IN TERRACE



The findings from Terrace indicated few significant differences between IPV hotspot and non-hotspot neighbourhoods; the pattern of results, in some ways, followed those of Prince George. As presented in Table 42, the two strongest indicators were the proportion of renters followed by unmarried persons, which were almost 200% and 32% higher, respectively, in IPV hotspots. The discrepancy in renters was the highest in the region. The only other variable that was significant was labour force participation, which was 17% lower in hotspots. Labour force participation only achieved marginal significance in Prince George and was otherwise not an important predictor in the North. Similarly, limited education was marginally significant in that hotspot areas had almost

twice as many residents with less than a high school education than did non-hotspots in Terrace. Similar to the results found in Prince George, Aboriginal population was a significant predictor of IPV, if only marginally. Hotspot areas had twice as many Aboriginal residents; however, in other municipalities, Aboriginal population was not a notable discrepancy. The final marginally significant difference between hotspot and non-hotspot neighbourhoods related to income, as median household income was 38% lower in IPV hotspots. No other effects were significant.

TABLE 42: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – TERRACE

	Hotspots	Non-Hotspots	t value
Population Density	1,154	1,237	0.18
Population Change 2006-2011 (%)	3.2%	0.4%	-0.78
Young Males - Aged 15-24 (%)	7.6%	7.2%	-0.72
Unmarried (%)	51.9%	39.2%	-3.87**
Mobility - Last 5 Years (%)	46.9%	40.2%	-1.15
Immigration (%)	9.3%	11.6%	0.91
Aboriginal Population (%)	35.2%	17.0%	-2.56*
Median Household Income ($)	$43,201	$70,567	2.79*
Unemployment Rate	6.9%	5.8%	-0.29
Labour Force Participation (%)	56.5%	68.7%	3.21**
Less Than High School Education (%)	23.3%	11.9%	-2.18*
Renters (%)	50.8%	17.0%	-4.07*
Housing Condition - Major Repairs (%)	8.8%	6.4%	-0.65

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN QUESNEL

In 2016, there was a total of 82 IPV files reported to the Quesnel RCMP with an average of 6.8 files per month. The number of IPV files reported to the Quesnel RCMP over the week did not vary substantially. While file reporting peaked on Thursday (17.1 per cent), this was only by one more file than the second most common days, which were Monday, Wednesday, and Saturday. Given this, the portion of founded reports to the Quesnel RCMP on Fridays, Saturdays, and Sundays was 40.2%. A slight majority of file reporting of IPV in Quesnel occurred between 18:00 and 06:00 (54.9 per cent), but, generally, file reporting remained consistent hour per hour.

Nearly three-quarters (72 per cent) of founded IPV files in Quesnel in 2016 were scored as a common assault. The next most common UCR code was an assault with a weapon or an assault causing bodily harm, which composed 15.9% of files. Nearly one-tenth (9.8 per cent) of files related to harassing or threatening behaviour, as 4.9% of files were scored as criminal harassment, and another 4.9% were scored as uttering threats.

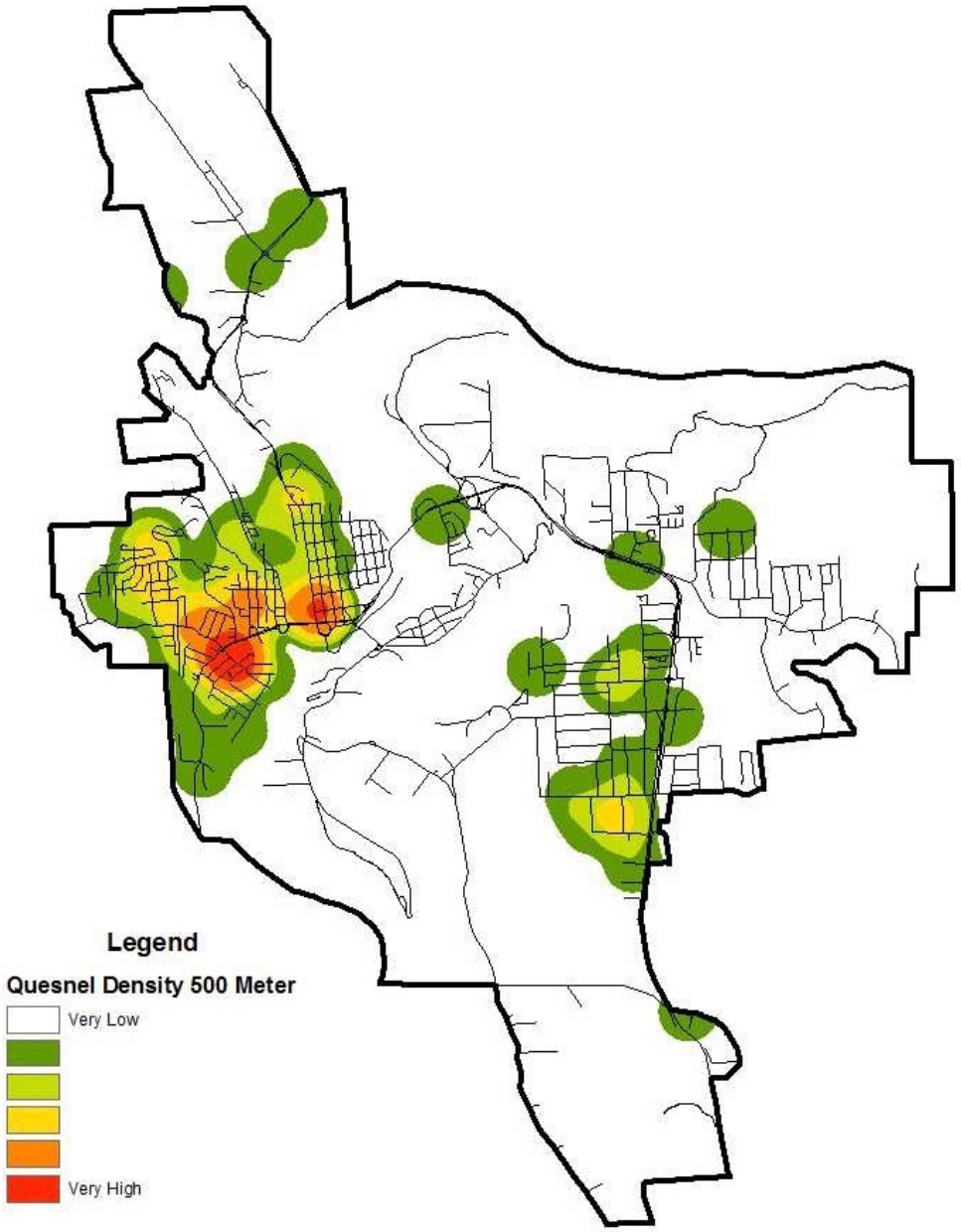
More than four-fifths (85.4 per cent) of accused had a charge laid or recommended against them. One-tenth (9.8 per cent) of files were founded not cleared, two (2.4 per cent) were cleared through departmental discretion, and two involved a complainant who did not want to lay charges.

There were three youth accused in Quesnel. As such, the age range of accused was between 17 years old to 59 years old. On average, accused in Quesnel were 34 years old. Slightly more than one-quarter (28.8 per cent) were female, and two-thirds (64.3 per cent) were Caucasian. The other

major ethnic category of the accused was Aboriginal (32.9 per cent). Nearly half (45 per cent) of the accused were in a current marital relationship with the victim, one-third (32.5 per cent) were in a current dating relationship, and one-fifth (21.3 per cent) were in a former dating relationship.

In terms of intimate partner violence hotspots in Quesnel in 2016, as demonstrated by Figure 39, there were two hotspots. The larger one was a residential area with the hotspot's epicenter at the intersection of Abbott Drive and Ritson Avenue and Willis Street. This hotspot spread for several blocks in all directions. The second hotspot was the commercial area just north of Marsh Drive along Carson Avenue to Front Street from McLean Street.

FIGURE 39: INTIMATE PARTNER VIOLENCE HOTSPOTS IN QUESNEL



The findings from Quesnel, presented in Table 43, generally followed in the footsteps of Terrace. The most important predictor related to education in that hotspot areas had 2½ times as many residents with a less than high school education than non-hotspot areas. The proportion of renters was also significantly higher in hotspots (almost 2½ times). No other variables were fully significant, although three were marginally so; household income, unmarried persons, and unemployment rate. Hotspot neighbourhoods had higher levels of unmarried persons (by 30 per cent) and unemployment (by 85 per cent). Furthermore, median household income in hotspots was the lowest in the region and lower by 40% than in non-hotspots, one of the highest discrepancies in the North. Only in Prince George was such a stark difference evident; it was also the only other municipality with a median income below $41,000. Hotspot areas did not have significantly different levels of residential mobility, immigration, Aboriginal population, young males, labour force participation, or housing condition. Population density and change were not significant indicators of IPV in Quesnel or any other municipality in the North.

TABLE 43: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – QUESNEL

	Hotspots	Non-Hotspots	t value
Population Density	901	771	-0.38
Population Change 2006-2011 (%)	12.9%	4.4%	-1.25
Young Males - Aged 15-24 (%)	6.4%	5.9%	-0.66
Unmarried (%)	51.3%	39.4%	-3.01*
Mobility - Last 5 Years (%)	51.3%	48.2%	-0.66
Immigration (%)	11.1%	9.4%	-0.58
Aboriginal Population (%)	14.5%	13.3%	-0.30
Median Household Income ($)	$40,841	$68,093	3.15*
Unemployment Rate	14.6%	7.9%	-2.09*
Labour Force Participation (%)	57.7%	61.6%	0.85
Less Than High School Education (%)	27.6%	10.6%	-3.97**
Renters (%)	48.3%	19.4%	-3.44**
Housing Condition - Major Repairs (%)	7.8%	6.4%	-0.40

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN WILLIAMS LAKE

In total, 80 IPV files were reported to the Williams Lake RCMP in 2016; on average, 6.7 files per month. IPV file reporting was more common between Saturday morning and Monday night than during the rest of the week. In effect, these three days accounted for 52.5% of all IPV file reporting in Williams Lake in 2016. Given this, 46.3% of all intimate partner violence reports were received by the Williams Lake RCMP on a Friday, Saturday, and Sunday. The majority (61.3 per cent) of IPV files were reported between 18:00 and 06:00 in Williams Lake. The largest proportion of files were reported between 21:00 and 21:59 (10.0 per cent)

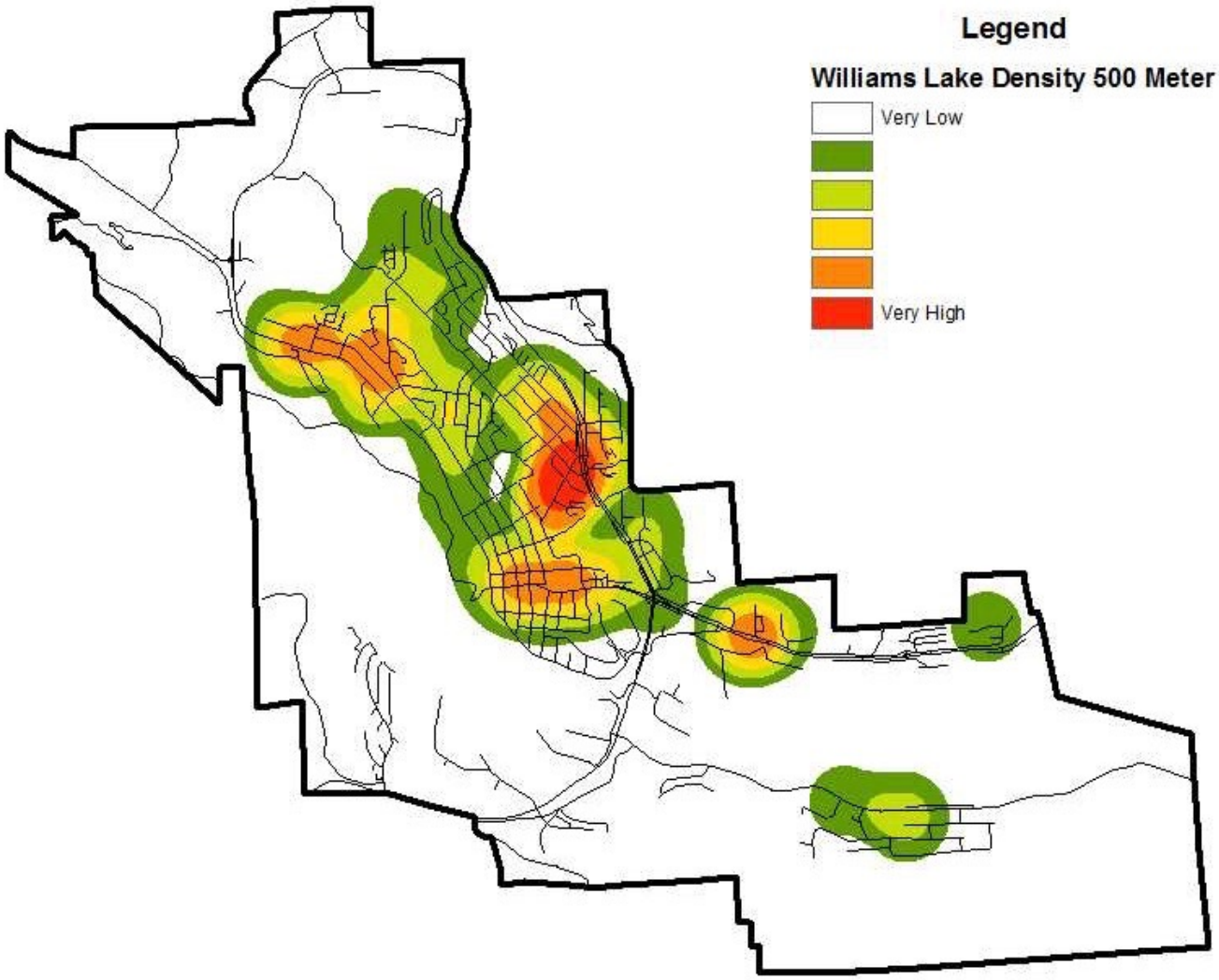
Again, three-quarters (76.3 per cent) of files were scored as a common assault in Williams Lake. The next most common UCR code was an assault with a weapon or an assault causing bodily harm (13.8 per cent). Unlike other municipalities, there were no files related to criminal harassment or harassing communications; however, the third most common UCR code in Williams Lake was

uttering threats (5.0 per cent). Virtually all founded IPV files (95 per cent) in Wiliams Lake resulted in a recommended or laid charge. Two additional files were cleared through departmental discretion, while two involved a complainant who would not lay charges.

The age of accused in Williams Lake ranged between 15 years old and 62 years old, with an average age of 36.1 years old. Four-fifths (81.3 per cent) of accused were male, and the majority (60.3 per cent) were Aboriginal, while slightly more than one-third (37 per cent) were Caucasian. Almost half (47.5 per cent) were in a current marital relationship, while over another third (37.5 per cent) were in a current dating relationship. Very few were in a former relationship, as 8.8% were in a former dating relationship with the victim, while 3.8% were previously married to the victim.

As demonstrated in Figure 40, there was one main hotspot for founded intimate partner violence files in Williams Lake in 2016 and three areas of high concentration for this type of file. The hotspot had its center in a mainly residential area at the intersection of Carson Drive and Clearview Crescent, spereading out for several blocks in all directions. The hotspot was surrounded by a small area of high volume. To the south of the main hotspot, there was an area of high volume for founded intimate partner violence files that was intersected by Oliver Street bounded by Roland Street to the north, 1st Avenue to the west, just to the north of Yorston Avenue to the south, and to the east of 7th Avenue to the east. This area is mainly commerical in nature. To the southeast was another high volume area along Cariboo Highway between Borland Road to the south and along Coleman Road to the north of Caribook Highway. This appears to be a more sparsely populated area with some homes and several hotels. The final high volume area was towards the northwest part of the city along Mackenzie Avenue North. This is a residential area, and the high volume zone extended from Boundary Street at the eastern point of the zone to approimately Moon Avenue, Larch Street, and Edwards Drive to the north.

FIGURE 40: INTIMATE PARTNER VIOLENCE HOTSPOTS IN WILLIAMS LAKE



Of the remaining municipalities, none reported effects that remained statistically significant after the application of the multiple test (Bonferroni) correction. As demonstrated in Table 44, Williams Lake had only three marginally significant effects; unmarried persons, household income, and unemployment. The strongest effect was that of income, which was 26% lower in IPV hotspot neighbourhoods. Although the median income was not as high as in Fort St. John, Williams Lake, alongside Fort St. James and Dawson Creek, had a slightly higher median household income in hotspot areas of over $50,000. The sharpest discrepancy in unemployment was found in this municipality, as hotspot areas had an unemployment rate almost 2½ times greater than other areas of the city. Only Fort St. John came close to having such a conspicuous difference, although the indicator was not even a slightly significant predictor of IPV. Consistent with previous results, hotspots had a greater proportion of unmarried persons (23 per cent). As in Quesnel, hotspot areas were generally similar to non-hotspot areas, and, as such, no other indicators were shown to have significant effects on IPV.

TABLE 44: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – WILLIAMS LAKE

	Hotspots	Non-Hotspots	t value
Population Density	1,258	1,190	-0.14
Population Change 2006-2011 (%)	-0.6%	2.4%	0.62
Young Males - Aged 15-24 (%)	6.7%	5.6%	-1.46
Unmarried (%)	47.4%	38.7%	-2.15*
Mobility - Last 5 Years (%)	48.0%	46.9%	-0.22
Immigration (%)	8.9%	9.5%	0.14
Aboriginal Population (%)	24.1%	16.9%	-1.19
Median Household Income ($)	$53,037	$72,593	2.63*
Unemployment Rate	11.8%	4.8%	-2.47*
Labour Force Participation (%)	63.4%	68.6%	1.20
Less Than High School Education (%)	15.9%	9.9%	-1.09
Renters (%)	40.7%	24.6%	-1.42
Housing Condition - Major Repairs (%)	7.8%	4.9%	-0.78

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN FORT ST. JAMES

In total , there were 57 IPV files reported to the Fort St. James RCMP in 2016 or 4.8 files per month. Regarding the day of the week when files were reported, 40% of IPV files in Fort St. James were reported over just two days, namely Fridays (19.3 per cent) and Saturdays (21.1 per cent). Sundays contributed an additional 12.3% of founded reported intimate partner violence files. IPV files were slightly more likely to be reported in Fort St. James in the daytime between 06:00 and 18:00 (52.6 per cent).

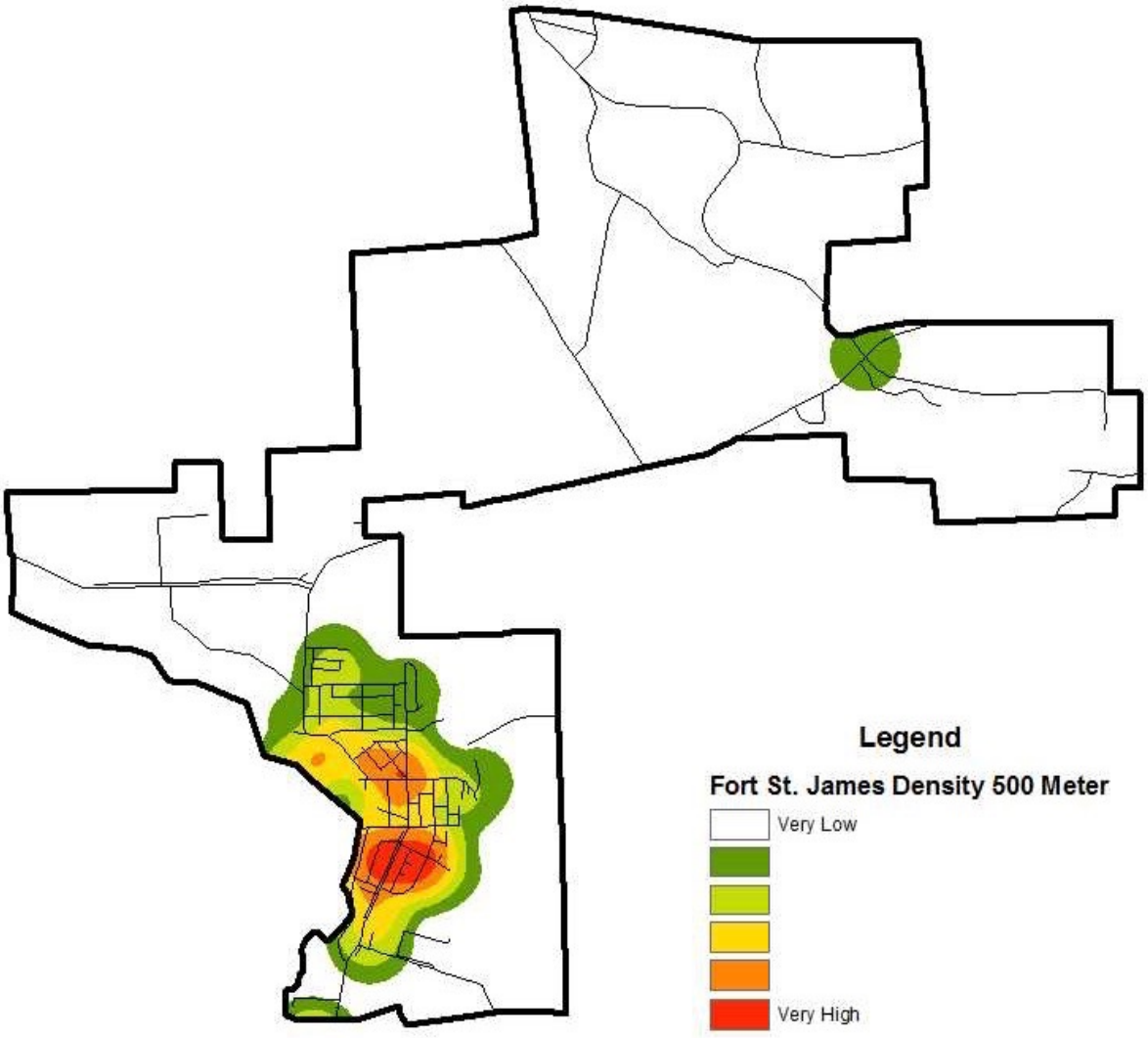
Two-thirds (63.2 per cent) of founded IPV files in Fort St. James were scored as common assault. Proportionally speaking, a comparatively high percent were scored as an assault with a weapon or an assault causing bodily harm (17.5 per cent); however, in raw numbers, this equated to ten files over the year. In total, 7% of files (n = 4) were scored as forcible confinement, while another 7% (n = 4) were scored as uttering threats. Of note, there were no criminal harassment or harassing communications related charges. Nearly all (96.5 per cent) of the 57 files resulted in a charge being laid or recommended against the accused. No files were considered founded, but not cleared, and no files were cleared through departmental discretion.

The accused in Fort St. James ranged in age from 13 years old to 64 years old, with an average age was 36 years old. The vast majority (86 per cent) of accused were male, and nearly three-quarters (71.9 per cent) were Aboriginal. The remaining 28.1% were Caucasian. At the time the report was filed with the Fort St. James RCMP, 42.1% of the accused were married to the victim, while 29.8% were in a dating relationship. Another 17.5% were the former dating partner of the victim, while 7% were separated or divorced from the victim.

As demonstrated by Figure 41, there was one main hotspot in Fort St. James for intimate partner violence files in 2016. This hotspot was in a residential area comprising a small number of homes. The hotspot extended from Middle Road at the western border of the hotspot to just east of Greenview Drive to the east. The hotspot's southern border was to the north of Hill Drive and ended south of Kwah Road to the north. A second, very small hotspot was focused at Simon Fraser Avenue

between Stuart Lake Highway and Douglas Avenue which has a recreation centre and a hardware store.

FIGURE 41: INTIMATE PARTNER VIOLENCE HOTSPOTS IN FORT ST. JAMES



The findings for Fort St. James stand in contrast to every other municipality in the sample. As demonstrated in Table 45, not one indicator had an even slightly significant effect on IPV. Despite this, there were a small number of notable discrepancies between IPV hotspots and other areas. Hotspots demonstrated a higher proportion of unmarried persons (27 per cent) and renters (168 per cent). In fact, the disparity in renters was one of the highest in the North, second only to Terrace. Moreover, immigration was 42% lower in hotspot areas, echoing the findings from Prince George, but countering those of the Lower Mainland. On the whole, hotspot areas were quite similar to other areas of the city. The lack of any significant results is likely due to the fact that Fort St. James has, by far, the smallest population of any municipality profiled thus far, with less than 2,000

residents as of 2016. As such, there is a relative lack of diversity in the structural variables, characteristics that were developed for use in larger areas.

TABLE 45: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – FORT ST. JAMES

	Hotspots	Non-Hotspots	t value
Population Density	177	435	0.56
Population Change 2006-2011 (%)	24.4%	25.4%	0.10
Young Males - Aged 15-24 (%)	7.3%	6.4%	-0.72
Unmarried (%)	47.8%	37.6%	-2.25
Mobility - Last 5 Years (%)	41.7%	43.3%	0.59
Immigration (%)	6.3%	12.2%	1.04
Aboriginal Population (%)	28.2%	25.8%	-0.17
Median Household Income ($)	$53,013	$61,462	0.80
Unemployment Rate	11.6%	6.5%	-0.78
Labour Force Participation (%)	63.1%	67.3%	0.33
Less Than High School Education (%)	24.1%	24.1%	0.00
Renters (%)	41.5%	15.5%	-1.59
Housing Condition - Major Repairs (%)	14.5%	21.4%	0.31

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN DAWSON CREEK

In 2016, there was a total of 56 founded IPV files reported to the Dawson Creek RCMP, or 4.7 files per month. In total, 57.1% of file reporting occurred on a Friday, Saturday, and Sunday. The most common day of the week was both Saturday and Sunday (23.2 per cent for each day). The least common day for files to be reported was Tuesdays (7.1 per cent). Consistent with Fort St. James, a larger proportion (55.4 per cent) of founded IPV files in Dawson Creek were reported during the day between 06:00 and 18:00. There was no clear peak time for IPV file reporting in Dawson Creek.

Over two-thirds (69.6 per cent) of the founded IPV files in Dawson Creek in 2016 were scored as common assault, while the next most common UCR code was an assault with a weapon or an assault causing bodily harm (10.7 per cent, n = 6). Forcible confinement and sexual assault were the third most common category (5.4 per cent, n = 3). Again, harassment and threat related UCR codes were uncommon in Dawson Creek, with only two files (3.6 per cent) scored as uttering threats, and one (1.8 per cent) scored as harassing communications.

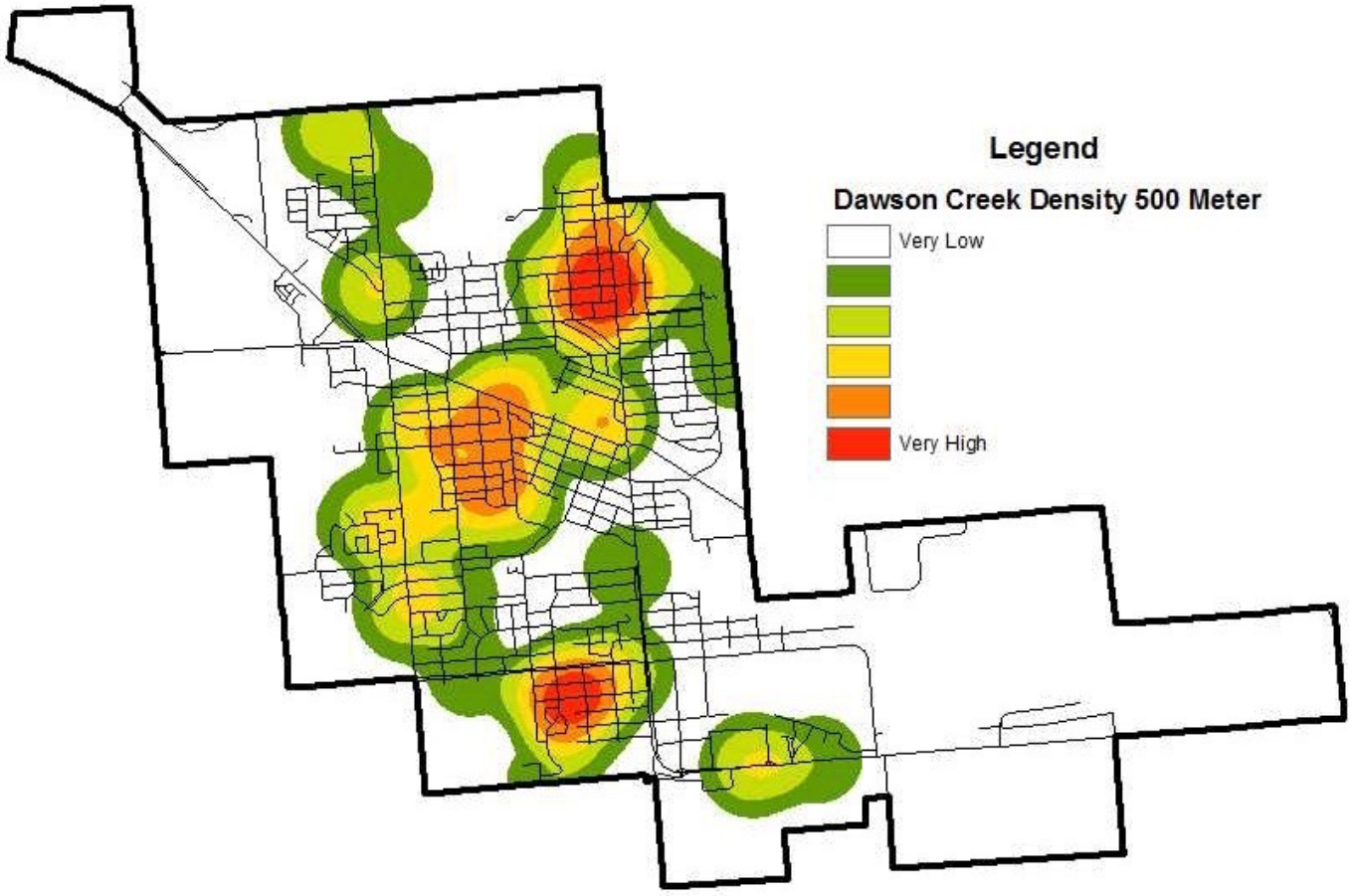
Again, in Dawson Creek, a very high percentage (89.3 per cent) of files resulted in a charge being laid or recommended against the accused. Inconsistent with the previous several municipalities, the other 10.7% of files were considered founded, but not cleared.

There were no youth accused in IPV files in Dawson Creek. As such, the age of accused ranged from 18 years old to 61 years old, with an average age of 33.5 years old. Over four-fifths (84.0 per cent) of the accused were male, and slightly more than half (54.8 per cent) were Caucasian. Another 41.9% were Aboriginal, and the remaining 3.2% were Asian. At the time the IPV report was made to the RCMP, two-thirds (68 per cent) of accused were in a current relationship with the victim. This was divided equally into a current marital relationship and a current dating relationship. Slightly

more than one-fifth were in a former relationship with the victim. More specifically, 13.5% were the former dating partner of the victim, while 7.5% were the former spouse.

As demonstrated in Figure 42, there were two main hotspots for founded intimate partner violence files in Dawson Creek in 2016. The first hotspot, in the northeastern part of the city, was in a residential area intersected by 94th Avenue and 8th Street and spreading out for several city blocks in all directions. The hotspot was bounded by 92th Avenue to the north, 96th Avenue to the south, 10th Street to the west, and 6th Street to the east. The second hotspot was near the southern boundary of the city in another residential neighbourhood. This hotspot extended from approximately 12th Street to the west, including a mobile home park, to near 10th Street to the east, and from 116th Avenue to the north to 120th Avenue to the south.

FIGURE 42: INTIMATE PARTNER VIOLENCE HOTSPOTS IN DAWSON CREEK



Only one notable distinction between hotspot neighbourhoods and other parts of the city was found in Dawson Creek; median household income (see Table 46). Hotspot areas had income levels that were 23% lower than non-hotspots; however, this disparity only reached marginal significance. There were a small number of other notable, though not statistically significant, findings. In IPV

hotspot neighbourhoods, the proportion of unmarried persons (13 per cent), renters (33 per cent), and mobility (17 per cent) were higher, whereas levels of immigration were slightly lower (35 per cent). These differences were some of the smallest in the region; overall, hotspots and non-hotspots generally resembled each other fairly closely. No other indicators proved to be significant predictors of IPV.

TABLE 46: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – DAWSON CREEK

	Hotspots	Non-Hotspots	t value
Population Density	1,086	1,463	1.05
Population Change 2006-2011 (%)	5.5%	5.6%	0.01
Young Males - Aged 15-24 (%)	7.7%	8.1%	0.60
Unmarried (%)	50.5%	44.5%	-1.59
Mobility - Last 5 Years (%)	49.7%	42.5%	-1.39
Immigration (%)	4.9%	7.4%	1.22
Aboriginal Population (%)	16.7%	12.2%	-1.89
Median Household Income ($)	$54,954	$72,087	2.27*
Unemployment Rate	2.2%	3.7%	0.78
Labour Force Participation (%)	72.5%	71.8%	-0.20
Less Than High School Education (%)	18.0%	13.6%	-1.08
Renters (%)	39.3%	29.4%	-1.11
Housing Condition - Major Repairs (%)	4.4%	7.1%	0.70

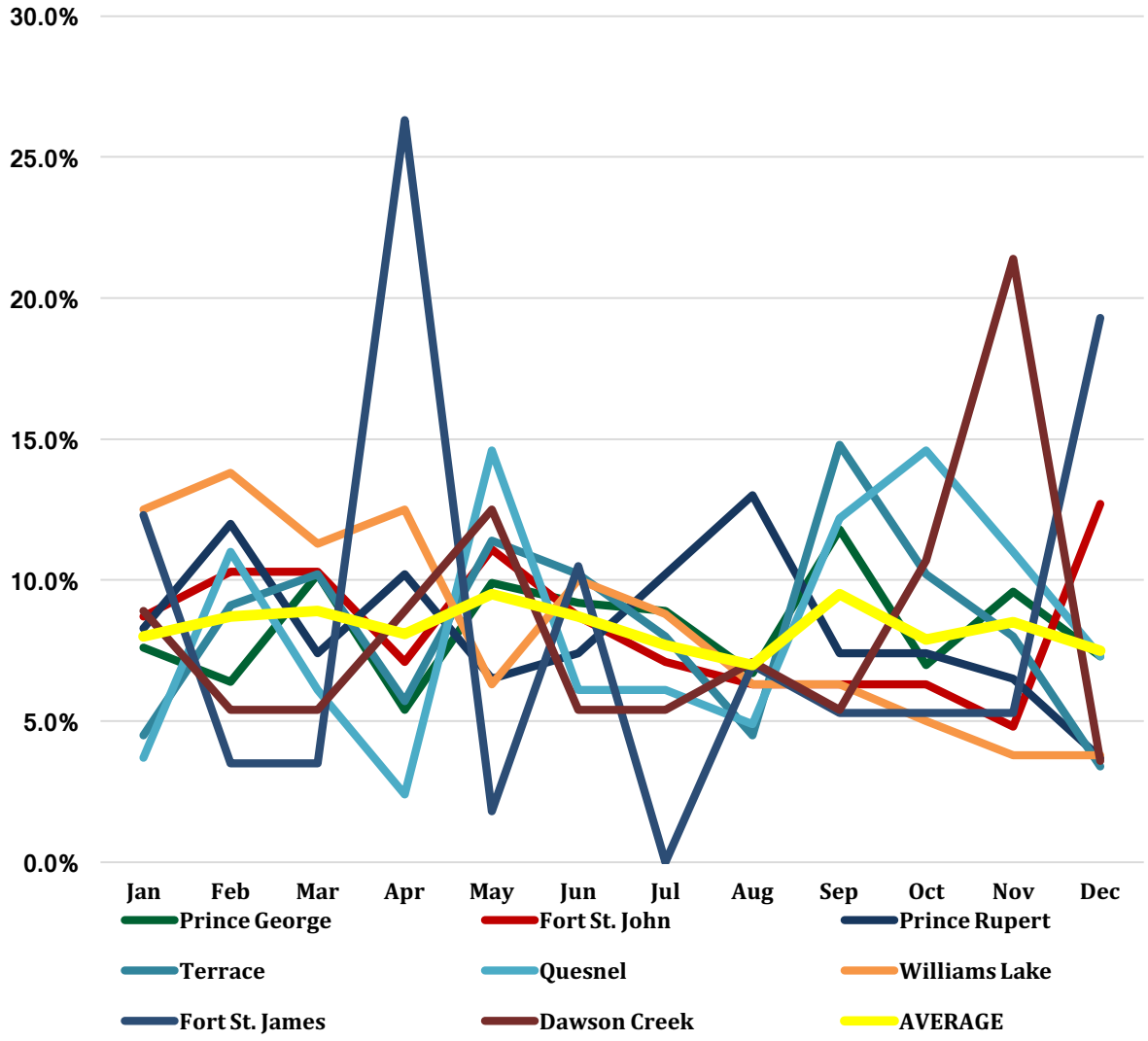
* $p < .05$; ** $p < .004$

COMPARING FOUNDED IPV FILES IN 2016 IN THE TOP EIGHT MUNICIPALITIES IN THE NORTH DISTRICT

A number of statistical comparisons were conducted between the top eight municipalities in the North District to identify meaningful differences. There was no statistically significant difference in the number of founded IPV files reported by day of the week, x^2 (42) = 38.8, $p > .05$, relationship status, x^2 (28) = 37.5, currency of the relationship, x^2 (7) = 5.2, $p > .05$, or gender of the accused, x^2 (7) = 12.8, $p > .05$.

The number of founded IPV files did differ by month, x^2 (77) = 135.7, $p < .001$. As shown in Figure 43, there were clear peaks in Fort St. James (April) and Dawson Creek (November) when the monthly number of files far exceeded the average. In particular, the data from Fort St. James seemed to vary substantially from the average trend, as, in addition to having a month with an unusually high proportion of files, there were also several months in Fort St. James when the number of files was far lower than the average (February, March, May, and July).

FIGURE 43: NUMBER OF FILES EACH MONTH IN THE TOP 8 NORTHERN MUNICIPALITIES



UCR status also varied across the top eight municipalities in the North, x^2 (35) = 54.5, p < .05. Given that most charges related to common assault, assault with a weapon or causing bodily harm, or one of the harassment/intimidation charges, Table 47 focuses on just these three types of files. Overall, 71.8% of files in the top eight municipalities in the North District were scored as a common assault. This was more likely to be the case with files in Prince Rupert, and less likely to occur in Fort St. James. Slightly more than one-tenth of files were scored as an assault with a weapon or an assault causing bodily harm; however, this proportion was lower in Fort St. John or Terrace. In contrast, 17.5% of files received this UCR scoring in Fort St. James. Lastly, 8.6% of all founded intimate partner violence files in the top eight municipalities in the North District were scored as either criminal harassment, harassing communications, or uttering threats; however, this was less likely to occur in Prince Rupert or Williams Lake, and more likely to occur in Terrace.

TABLE 47: USE OF ASSAULT VERSUS HARASSING OR THREATENING UCR CODES IN THE TOP 8 NORTH DETACHMENTS

	% Common Assault	% Assault w/Weapon or CBH	% Threats/Harassment
Prince George	66.2%	14.0%	10.5%
Fort St. John	74.6%	4.8%	8.7%
Prince Rupert	81.5%	9.3%	4.6%
Terrace	78.4%	5.7%	11.4%
Quesnel	72.0%	15.9%	9.8%
Williams Lake	76.3%	13.8%	5.0%
Fort St. James	63.2%	17.5%	7.0%
Dawson Creek	69.6%	10.7%	5.4%
Totals	71.8%, N = 654	11.5%, N = 105	8.6%, N = 78

The CCJS status also differed significantly by municipality, x^2 (28) = 80.0, p < .001; however, as there were very small numbers of files with the status that the complainant would not lay charges or cleared through other means, these two categories are not presented in Table 48. Still, it should be noted that 9.9% of the files in Prince George involved a complainant who did not want to lay charges, whereas this occurred in less than 3% of the files in all other seven Northern municipalities. Table 48 presents several other patterns of interest. Whereas 85.1% of all files in the eight municipalities reviewed in the North resulted in a laid or recommended charge, this was more likely to occur in Williams Lake and Fort St. James, and less likely to occur in Prince George. In contrast, Prince George had the highest percentage of files cleared through departmental discretion, followed by Terrace. Although the number of files cleared this way was relatively small, it is notable that four of the eight detachments did not clear any IPV files this way in 2016. Similarly, two detachments (Williams Lake and Fort St. James) did not code any files as founded not cleared, whereas twice as many files as typical were scored this way in Prince Rupert.

TABLE 48: COMPARING THREE FILE OUTCOME CATEGORIES IN THE TOP 8 NORTH DETACHMENTS

	% Charged	% Departmental Discretion	% Founded Not Cleared
Prince George	76.8%	6.1%	7.0%
Fort St. John	92.1%	0	5.6%
Prince Rupert	84.3%	0	13.0%
Terrace	86.4%	5.7%	6.8%
Quesnel	85.4%	2.4%	9.8%
Williams Lake	95.0%	2.5%	0
Fort St. James	96.5%	0	0
Dawson Creek	89.3%	0	10.7%
Totals	85.1%, N = 775	3.1%, N = 28	6.9%, N = 63

Given that in most of the eight Northern municipalities the accused were either Caucasian or Aboriginal, the proportion of accused belonging to either of these, or an "other" catch-all category was compared and found to be statistically significant, x^2 (14) = 83.3, p < .001. Across the eight municipalities, 50.6% of accused were Aboriginal. The accused in Prince Rupert (76.4 per cent), Fort St. James (71. 9 per cent), and Terrace (66.3 per cent) were much more likely to be Aboriginal,

whereas the accused in Fort St. John (28.8 per cent) and Quesnel (32.9 per cent) were much less likely to be Aboriginal. Conversely, while 46.5% of all accused in the eight Northern municipalities were Caucasian, this was much more likely to be true in Fort St. John (67.3 per cent) and Quesnel (64.3 per cent), and much less likely to be true in Prince Rupert (19.1 per cent), Fort St. James (28.1 per cent), or Williams Lake (37.0 per cent).

The last factor to vary by municipality in the North was the average age of the accused, F_{Welch} (7, 257.2) = 2.7, p < .05. Specifically, the accused in Prince George were significantly older (35.6 years on average) than the accused in Fort St. John (31.9 years on average). No other average age differed significantly by municipality.

As nearly all (89.5 per cent, n = 775) of the files in the North District resulted in a charge being recommended, there was too little variance in outcomes to produce a statistically significant model of either charge outcomes, x^2 (10) = 13.1, p > .05, or files being cleared through departmental discretion, x^2 (10) = 15.98, p > .05.

The pattern of socio-economic and demographic results summarized in Table 49 is even sparser than was the pattern for the Southeast region. Only Prince George, which had 2.5 times more founded IPV files than Fort St. John, had more than three significant effects. Not surprisingly, four of the five significant factors for Prince George were drawn from the "big 5". At the other end of the scale, municipalities with the lowest prevalence of IPV, such as Williams Lake, Fort St. James, and Dawson Creek, revealed no significant predictors. In general, the structural factors did not fare well in the North district. Only renters was significant in more than half the municipalities. If marginal significance is also considered, unmarried persons and median household income might be considered marginally useful variables. But, were it not for Prince George, six variables would have shown no fully significant results. Taken together with the results from the Southeast, the emerging conclusion is that structural factors are important predictors of IPV in larger cities and those with higher levels of IPV, but that their utility in predicting IPV hotspots is more limited in smaller cities and areas where IPV is less pronounced.

TABLE 49: SUMMARY OF SIGNIFICANT T VALUES ACROSS MUNICIPALITIES – NORTH

	Prince George	Fort St. John	Prince Rupert	Terrace	Quesnel	Williams Lake	Fort St. James	Dawson Creek
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 < .05; ** p < .004

Founded IPV Files in 2016 in the Island District

There were 1,663 founded IPV files that occurred in the Island District in 2016. Given the large number of jurisdictions with comparatively small numbers of files, the subsequent analyses focused on the municipalities reporting at least 50 founded IPV files in 2016 (as highlighted in Table 50). There were 43 additional municipalities in the Island District with at least one, but less than ten IPV files reported in 2016, which are subsequently not identified in Table 50. The eight highlighted municipalities in the Island District had more than 50 founded IPV files each in 2016 and will be analysed further.

TABLE 50: FOUNDED IPV FILES IN THE ISLAND DISTRICT 2016 (N = 1,663)

	Number	Per Cent of Southeast
Nanaimo	308	18.5%
Duncan	213	12.8%
Port Alberni	145	8.7%
Campbell River	138	8.3%
Courtenay	129	7.8%
Port Hardy	72	4.3%
Langford	71	4.3%
Powell River	51	3.1%
Comox	38	2.3%
Sooke	36	2.2%
Ladysmith	33	2.0%
Lake Cowichan	30	1.8%
Parksville	29	1.7%
View Royal	28	1.7%
Ahousaht	26	1.6%
Colwood	25	1.5%
Port McNeill	19	1.1%
Sidney	18	1.1%
Qualicum Beach	17	1.0%
Crofton	16	1.0%
Salt Spring Island	16	1.0%
North Saanich	14	0.8%
Tofino	14	0.8%
Chemainus	13	0.8%
Black Creek	12	0.7%
Sayward	12	0.7%
Shawnigan Lake	10	0.6%
Remaining Municipalities (43)	126	7.6%
Unknown Municipalities	4	0.2%

FOUNDED IPV FILES IN 2016 IN NANAIMO

In total, there were 308 IPV files reported to the Nanaimo RCMP in 2016. This accounted for, on average, 25.7 files reported each month or nearly one file per day. The peak day for reporting of founded IPV files in Nanaimo was Sunday (18.2 per cent), while 44.2% of all Nanaimo's IPV files were reported to the RCMP on a Friday, Saturday, and Sunday. Over half (56.8 per cent) of files were reported to the Nanaimo RCMP during the evening and overnight hours between 18:00 and 06:00. There was a peak in IPV reporting between 20:00 and 20:59 (7.1 per cent).

Three-quarters (73.1 per cent) of the founded IPV files in Nanaimo in 2016 were scored as a common assault. The next most common category accounting for a little over one-tenth (11 per cent) of the files was an assault with a weapon or an assault causing bodily harm. The third most common UCR code was uttering threats, accounting on its own for 7.5% of all files. When combined with the two harassment related codes of criminal harassment (1.9 per cent) and harassing communications (3.2 per cent), these three UCR codes accounted for 12.7% of all files.

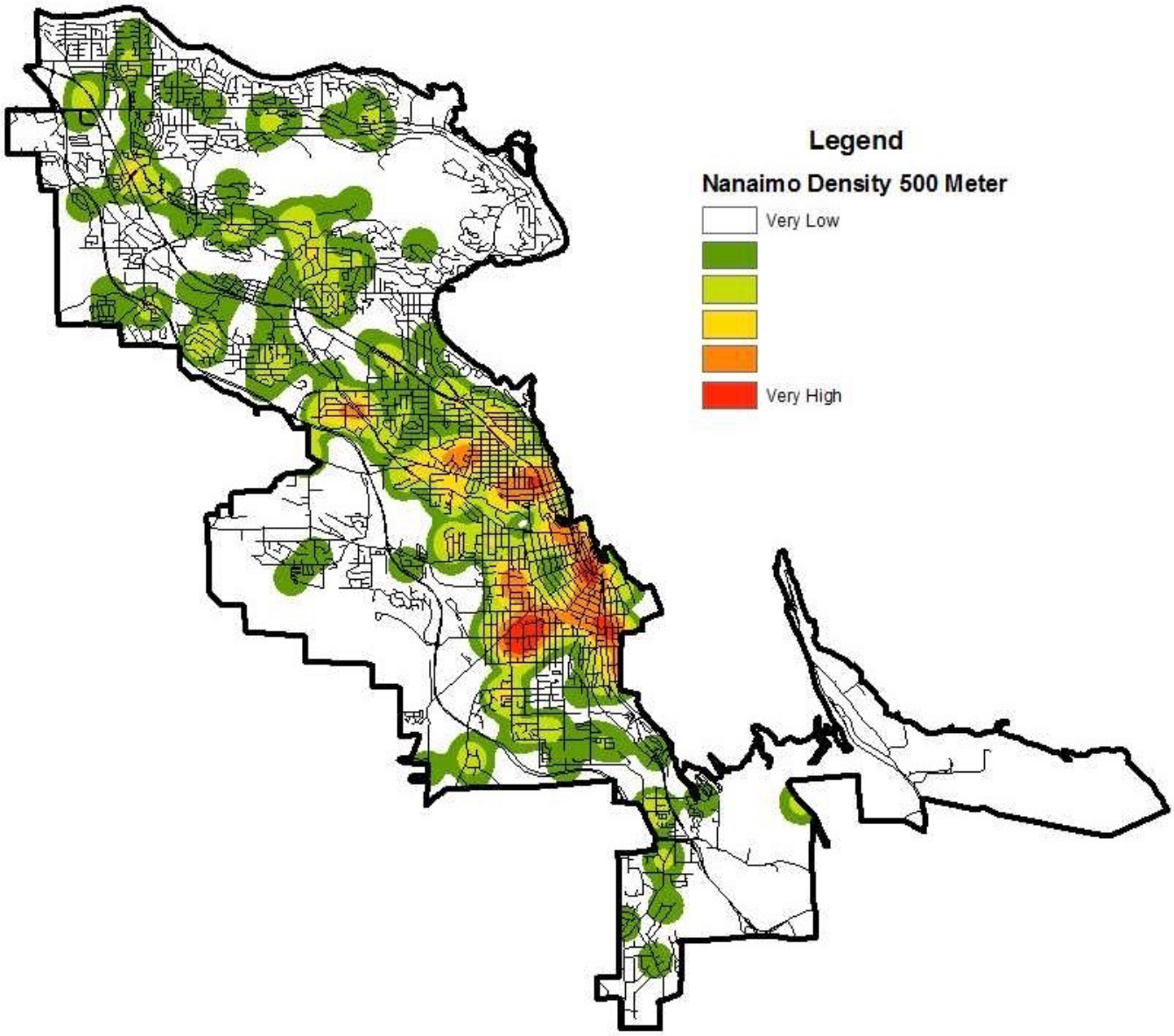
More than three-quarters (78.2 per cent) of the founded IPV files in Nanaimo resulted in a charge being laid or recommended against the accused. In 25 cases (8.1 per cent), the complainant did not

want to lay charges. Another 7.1% of cases were cleared through departmental discretion, and 6.2% were considered founded not cleared.

There were several youth accused in Nanaimo (n = 6). While the ages of the accused ranged between 14 years old to 80 years of age, the average age of an accused was 36.1 years old. One-fifth (20.4 per cent) of the accused were female, and over two-thirds (68.9 per cent) were Caucasian. Another one-quarter (26.1 per cent) were Aboriginal, while 5.1% of the accused were from another ethnic background. At the time of the incident, nearly half (44.9 per cent) of the accused were in a dating relationship with the victim, while slightly more than one-quarter (27.2 per cent) were in a marital relationship. One-fifth were in a former relationship with the victim. More specifically, 15.3% were the ex-dating partner, while 6.6% were the ex-spouse.

As demonstrated in Figure 44, there were four main hotspots for intimate partner violence files in Nanaimo in 2016. The largest hotspot was in a residential area extending for several blocks in all directions from its epicenter at the intersection of Georgia Avenue and Fifth Street. A second hotspot was to the east of the previous one and was in the residential neighbourhood near the water. The center of this hotspot was Nicol Street and Farquhar Street and extended from Irwin Street to the east to just west of Victoria Road to the west. The hotspot's northern boundary was Milton Street, while its southern boundary was just north of Needham Street. A third hotspot was to the north of the second hotspot and is a commercial area near the city's wharf. The center of this hotspot was the intersection of Victoria Crescent and Albert Street. The final hotspot was in a residential area bounded by Townsite Road to the south, Aldorann Avenue to the west, Island Highway to the east, and the homes to the east of Eberts Street to the north.

FIGURE 44: INTIMATE PARTNER VIOLENCE HOTSPOTS IN NANAIMO



As demonstrated by Table 51, a majority of the structural variables were found to be significant predictors of IPV in Nanaimo. The strongest effect was that of marital status in that hotspot areas had a much higher proportion of unmarried persons (42 per cent) compared to non-hotspot areas. This was followed by the proportion of renters (136 per cent higher in hotspots), median household income (39 per cent lower in hotspots), and population density (63 per cent higher in hotspots). Similar to the previous three regions, marital status, median household income, and renters remained some of the more consistent predictors for Vancouver Island; population density, which was largely unimportant in the Southeast and North, also reached at least marginal significance more often than not. In addition to the four strongest indicators, IPV hotspots were also characterized by more residential mobility (26 per cent) and higher unemployment (111 per cent).

As in Fort St. John, but in contrast to cities in the Lower Mainland, there were significantly more young males in IPV hotspots than other areas, though only marginally so. The proportion of young males only emerged as an important predictor in fewer than half of the cities in this region. Other marginally significant variables were Aboriginal population, the proportion of those with less than a high school education, and housing condition, all of which were found to be higher in hotspot areas in Nanaimo. Differences between levels of immigration, labour force participation, and population change were not found to be significant predictors of IPV in Nanaimo. In fact, population change failed to reach even marginal significance in any municipality included in this sample, with the exception of Richmond in the Lower Mainland.

TABLE 51: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – NANAIMO

	Hotspots	Non-Hotspots	t value
Population Density	2,745	1,686	-4.25**
Population Change 2006-2011 (%)	-0.7%	6.4%	1.68
Young Males - Aged 15-24 (%)	7.7%	6.2%	-2.62*
Unmarried (%)	60.4%	42.7%	-9.75**
Mobility - Last 5 Years (%)	56.3%	44.7%	-3.07**
Immigration (%)	10.6%	14.5%	1.90
Aboriginal Population (%)	15.9%	5.0%	-3.08*
Median Household Income ($)	$36,954	$60,541	4.27**
Unemployment Rate	14.4%	6.8%	-3.32**
Labour Force Participation (%)	60.7%	62.9%	0.59
Less Than High School Education (%)	16.8%	7.2%	-3.06*
Renters (%)	52.2%	22.1%	-5.22**
Housing Condition - Major Repairs (%)	12.4%	3.7%	-2.89*

* p < .05; ** p < .004

FOUNDED IPV FILES IN 2016 IN DUNCAN

In 2016, there was a total of 213 IPV files reported to the Duncan RCMP, which resulted in an average of 17.8 files reported each month or one file approximately every two days. The most common days for IPV reporting to the Duncan RCMP were Thursdays, Fridays, and Saturdays (16.4 per cent each day); however, Fridays, Saturdays, and Sundays accounted for 46% of the reported files. A slightly higher proportion of IPV-related reports were made in the night hours between 18:00 and 06:00 (54.5 per cent). The highest number of files was reported between 20:00 and 20:59 (9.9 per cent).

In total, two-thirds (65.3 per cent) of founded IPV files in Duncan were scored as a common assault, while one-tenth (9.4 per cent) were scored as an assault with a weapon or an assault causing bodily harm. When combining the threat and harassment related categories together, nearly one-fifth (17.8 per cent) of the files received this designation. Specifically, 7.5% of files were scored as harassing communications, another 7.5% were scored as uttering threats, while 2.8% were scored as criminal harassment.

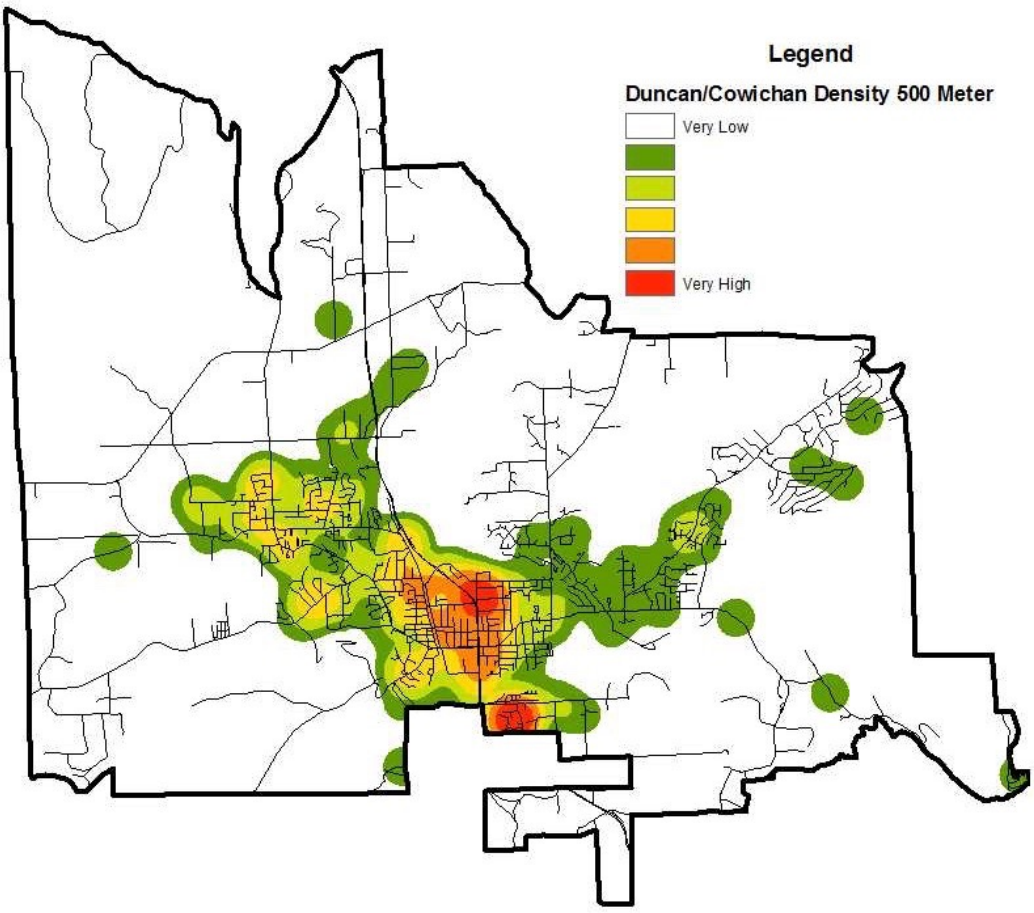
Four-fifths (82.2 per cent) of cases involved a charge laid or recommended against the accused. Nearly one-tenth (9.4 per cent) were cleared through departmental discretion, while half as many

(5.2 per cent) were considered founded not cleared. In seven cases (3.3 per cent), the complainant did not want to lay charges against the accused.

The average age of accused in Duncan was 34.2 years of age. Similar to Nanaimo, there were several youth accused (n = 11). Overall, the age of accused ranged from 13 years old to 69 years old. Nearly one-third (30.7 per cent) of the accused were female. The ethnicity of the accused was nearly equally divided between Caucasian (49.7 per cent) and Aboriginal (47.7 per cent). At the time of the file reporting, slightly more than one-third of the accused were either the current dating partner of the victim (37.3 per cent) or the current spouse (31.6 per cent), while nearly one-quarter (22.3 per cent) were the former partner. Only four (2.1 per cent) incidents involved a separated or divorced couple.

In terms of the intimate partner violence hotspots in Duncan in 2016, as demonstrated by Figure 45, there were two main hotspots. The northern hotspot was characterized by a mix of businesses, apartment buildings, and hotels/motels. The center of this hotspot was at the intersection of York Road and Dingwall Street and extended for approximately one city block in all directions. The second hotspot was at the southern border of the city, in a residential area. The northern boundary of the hotspot was Boys Road and the southern boundary was Island Highway.

FIGURE 45: INTIMATE PARTNER VIOLENCE HOTSPOTS IN DUNCAN



Only one important indicator of IPV was found in Duncan, namely housing condition (see Table 52). The percentage of homes needing major repairs was 7.5 times higher in hotspot areas compared to non-hotspot areas; however, this effect did not remain fully significant after the application of the Bonferroni correction. No other predictors were found to be significant, although some notable discrepancies were present. Unemployment, for instance, was almost five times higher in hotspot neighbourhoods. As well, the level of Aboriginal population was almost four times greater in hotspot areas. The reason these substantive differences were not statistically significant was because of the make-up of Duncan. Specifically, Duncan has very few dissemination areas (n = 9). Part of the t-test calculation of differences between groups involves within-group variability. With so few dissemination areas, the variability within the hotspot and non-hotspot areas was enormous. As a result, even substantively large differences were unable to achieve statistical significance. Still, in this circumstance, it is important to acknowledge the substantive differences for both unemployment and Aboriginal population.

TABLE 52: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – DUNCAN

	Hotspots	Non-Hotspots	t value
Population Density	2,550	2,940	0.55
Population Change 2006-2011 (%)	0.3%	6.1%	0.33
Young Males - Aged 15-24 (%)	5.1%	4.1%	-0.53
Unmarried (%)	58.0%	52.6%	-1.11
Mobility - Last 5 Years (%)	51.6%	55.3%	0.55
Immigration (%)	11.1%	10.4%	-0.14
Aboriginal Population (%)	13.1%	3.4%	-1.55
Median Household Income ($)	$32,995	$37,184	0.88
Unemployment Rate	9.3%	2.0%	-1.87
Labour Force Participation (%)	56.2%	42.3%	-1.58
Less Than High School Education (%)	14.1%	9.6%	-0.89
Renters (%)	44.3%	39.6%	-0.37
Housing Condition - Major Repairs (%)	9.6%	1.3%	-2.37*

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN PORT ALBERNI

In total, 145 IPV files were reported to the Port Alberni RCMP in 2016, or, on average, 12.1 files per month. Regarding the day of the week when IPV files were reported, the highest number of files were reported on Saturdays (18.6 per cent), though the number reported on Saturdays was only slightly higher than the number reported on Sundays, Mondays, and Fridays (16.6 per cent for each day). A slight majority of files (51.7 per cent) in Port Alberni were reported to the RCMP on a Friday, Saturday, and Sunday. IPV file reporting was generally equally split between the daytime hours of 06:00 and 18:00 (51 per cent) and the night hours of 18:00 and 06:00 (49 per cent). There was no obvious peak time during which a substantially higher number of files were reported.

A majority of files (59.3 per cent) in Port Alberni were scored as a common assault. A larger proportion (17.2 per cent) than in many other municipalities was scored as an assault with a

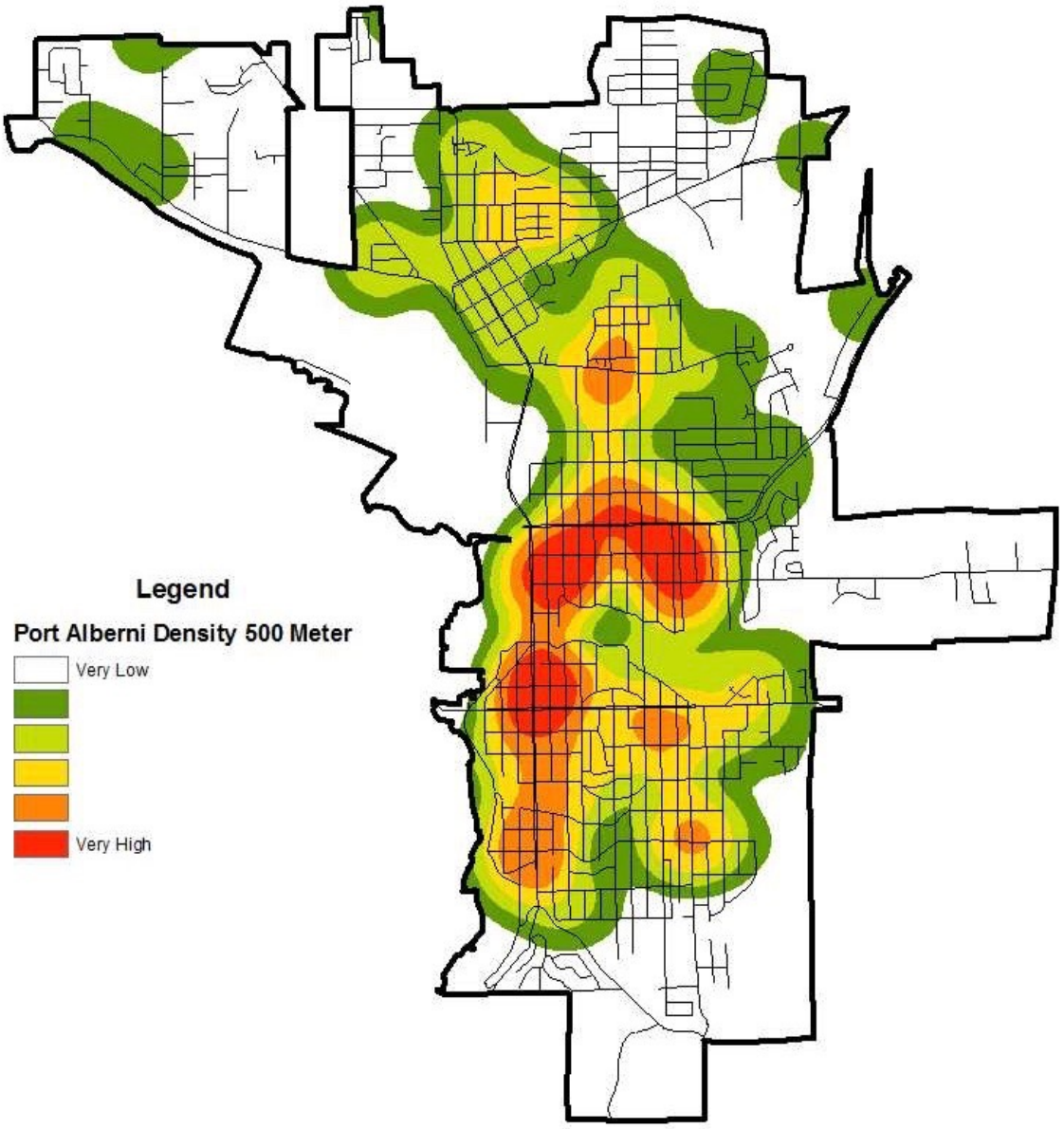
weapon or an assault causing bodily harm. Another 14.5% of files related to harassing or threatening behaviour. Of these, half were criminal harassment, a slightly smaller number were uttering threats, and only one was scored as harassing communications.

A very high proportion (91 per cent) of the files in Port Alberni resulted in a charge being laid or recommended against the accused. A small number of files were founded not cleared (n = 6, 4.1 per cent), cleared through departmental discretion (n = 3, 2.1 per cent), or involved a complainant who did not want to lay charges (n = 3, 2.1 per cent).

Although the average age of the accused was slightly lower in Port Alberni (33.2 years old) than the other two Island municipalities already reviewed, there were only two youth accused. The age range of accused was 17 years old to 61 years old. Almost one-quarter (23 per cent) of the accused were female. A slightly higher percentage of accused were Aboriginal (50.4 per cent) than Caucasian (47.3 per cent). Approximately two-thirds were in a current relationship with the victim, with 32.9% in a current dating relationship, and 30.8% in a current marital relationship. Another one-quarter (24.5 per cent) were the former dating partner of the victim, while only 4.2% were separated or divorced from the victim.

As demonstrated by Figure 46, there were two main hotspots for intimate partner violence files in Port Alberni in 2016. The larger hotspot was found in the center of the city and covered a large residential area. This hotspot extended for over two dozen city blocks from 3rd Avenue to the west to 15th avenue to the east. Given the shape of the hotspot, it is somewhat difficult to describe the southern and northern boundaries of this hotspot, but the southern-western boundary of the hotspot was Napier Street and the southern-eastern boundary of the hotspot was just south of Burde Street. At its narrowest point, towards the middle of the hotspot, Redford Street cuts the hotspot in half. Redford Street also serves as a general boundary for the eastern and western parts of the hotspot. The second hotspot was found at the south-eastern part of the city. This hotspot was circular in shape and covered a commerical area combined with a residential area. The center of the hotspot was along Argyle Street between 3rd Avenue and 4th Avenue, and extended from 2nd Avenue and 6th Avenue from west to east, and from Angus Street to the south and Dunbar Street in the north.

FIGURE 46: INTIMATE PARTNER VIOLENCE HOTSPOTS IN PORT ALBERNI



Port Alberni differed slightly from the previous municipalities in this region in that the strongest effect was that of Aboriginal population (see Table 53), which was 2.5 times greater in hotspot areas. Aboriginal population only reached full significance in Port Alberni. In the other three cities of the Island District where it was significant, it was only marginally so. The other fully significant effects were the proportion of unmarried persons and population density, which were 32% and 77% higher, respectively, in IPV hotspot neighbourhoods. Hotspot areas also had higher levels of residential mobility (1.3 times higher) and renters (1.8 times higher), but lower income (28 per cent lower); none of these variables reached full significance. Median household income in Port Alberni hotspot areas was below $40,000, alongside Nanaimo, Duncan, Courtenay, Cowichan, and

North Cowichan. This differs from previous regions, where household income in hotspot areas typically exceeded this threshold. No statistical differences were found for population change, the proportion of young males, immigration, unemployment, labour force participation, limited education, or housing condition.

TABLE 53: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – PORT ALBERNI

	Hotspots	Non-Hotspots	t value
Population Density	2,128	1,202	-3.60**
Population Change 2006-2011 (%)	0.0%	1.8%	0.62
Young Males - Aged 15-24 (%)	5.8%	5.3%	-1.06
Unmarried (%)	52.8%	39.9%	-4.45**
Mobility - Last 5 Years (%)	52.1%	38.8%	-2.52*
Immigration (%)	8.2%	9.0%	0.48
Aboriginal Population (%)	21.2%	8.4%	-4.94**
Median Household Income ($)	$37,277	$51,736	2.91*
Unemployment Rate	8.9%	8.5%	-0.12
Labour Force Participation (%)	46.3%	51.3%	1.26
Less Than High School Education (%)	21.4%	15.7%	-2.01
Renters (%)	44.4%	24.1%	-3.01*
Housing Condition - Major Repairs (%)	11.3%	7.5%	-1.11

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN CAMPBELL RIVER

In 2016, there were 138 IPV files reported to the Campbell River RCMP, or, on average, 11.5 files per month. File reporting was most common in Campbell River on Fridays (19.6 per cent). In contrast to the other Island municipalities, where file reporting declined to its lowest point mid-week, the pattern in Campbell River differed, as Wednesdays, along with Saturdays, were the days where the second highest number of file reports were made. In fact, Fridays, Saturdays, and Sundays accounted for 51.4% of all founded intimate partner violence files in Campbell River in 2016. Moreover, a higher proportion of IPV-related reports were made between 18:00 and 06:00 in Campbell River (57.2 per cent). There were two slight peaks in file reporting between 20:00 to 20:59 and 22:00 to 22:59 (8.0 per cent) for when reports were made to the RCMP.

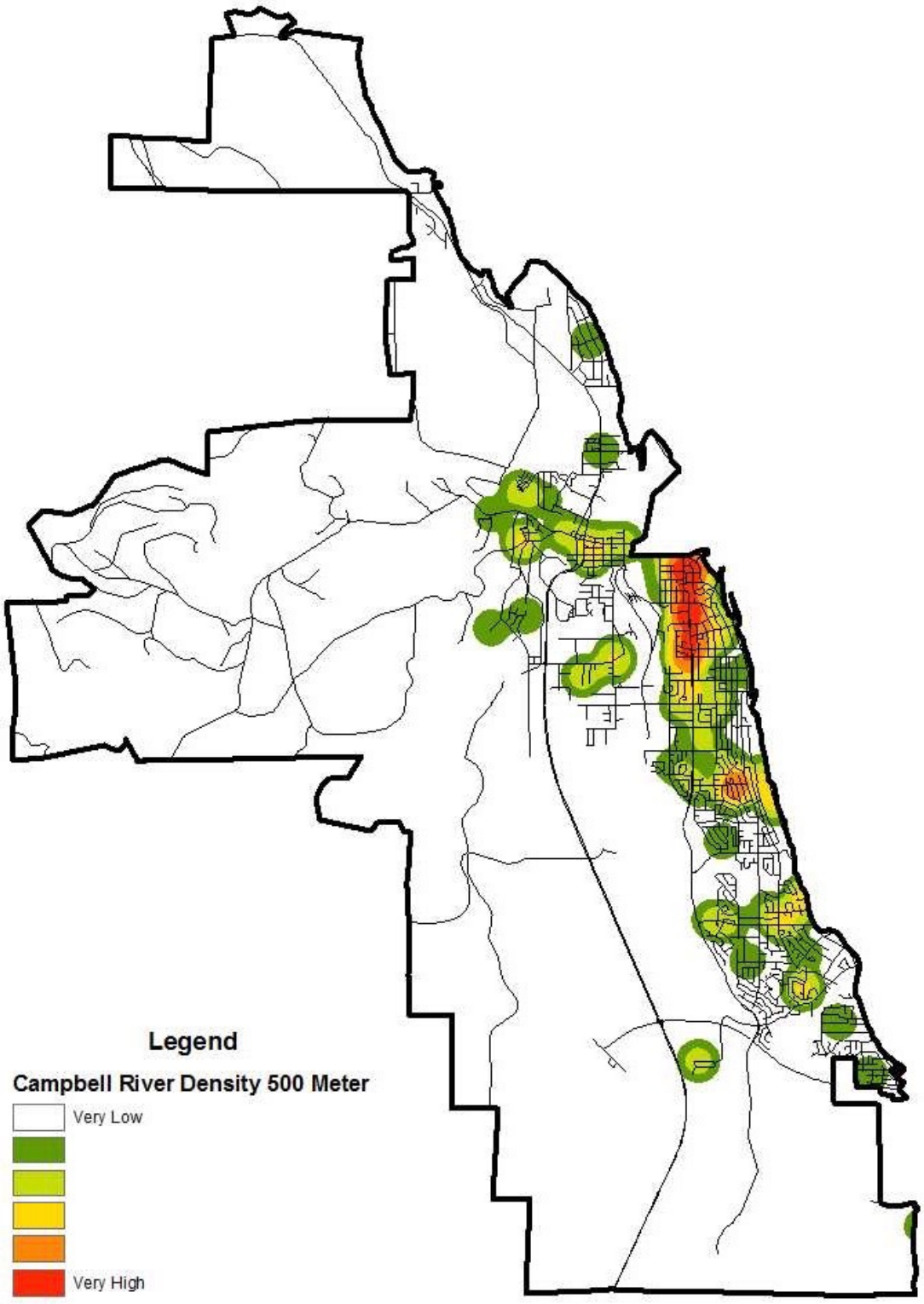
Three-quarters (74.6) of founded IPV files in Campbell River were scored as a common assault. The next most common category applied to less than one-in-ten files. Specifically, assault with a weapon or assault causing bodily harm was used in 7.2% of all founded IPV files in Campbell River. Together, the harassing and threatening behaviour UCR codes accounted for one-tenth (10.1 per cent) of the files. Half of this came from the uttering threats code, while 2.9% of the files were considered criminal harassment, and 2.2% harassing communications.

Although nearly three-quarters, a lower percentage (70.3 per cent) of files than in the other Island municipalities resulted in a laid or recommended charge. Conversely, a larger percentage (13 per cent) of files involved a complainant who did not want to lay a charge. Another one-tenth (10.9 per cent) of the files were cleared through departmental discretion, while 5.8% were founded not cleared.

The ages of accused in Campbell River ranged from 16 years old to 66 years old. The average age was 36.7 years old, and there were two youth accused. Over one-quarter (27.7 per cent) of the accused were female, and nearly two-thirds (61.7 per cent) were Caucasian. The other one-third (38.3 per cent) of accused were Aboriginal. At the time of the file report, two-thirds of the accused were in a current relationship with the victim. A slightly higher proportion were in a current dating relationship (37 per cent) as compared to a current marital relationship (31.5 per cent). Slightly more than one-fifth had a former relationship with the victim; 15.7% were an ex-dating partner, while 7.1% were an ex-spouse.

As demonstrated in Figure 47, there was one main hotspot for intimate partner violence files in Campbell River in 2016. This hotspot was split between a commerical area in the northern part of the hotspot and a residential area towards the southern end of the hotspot. The entire hotspot was bisected by Dogwood Street, with the hot spot spreading out to the east and west. As with the other hotspots, the hotspot was surrounded by an area of high IPV volume. The western boundary of the hotspot and high volume area followed Ridge Road and Greenwood Street, while the eastern boundary was Colwyn Street, Birch Street, and Shoppers Row. The northern boundary was 16th Avenue and the southern boundary was 4th Avenue.

FIGURE 47: INTIMATE PARTNER VIOLENCE HOTSPOTS IN CAMPBELL RIVER



Results for Campbell River were largely in line with those of the previously mentioned municipalities (see Table 54). Marital status emerged as both the strongest predictor of IPV, as well as the sole fully significant variable; the proportion of unmarried residents was 38% higher in IPV hotspots. Population density, median household income, and renters were important predictors, as expected, though they only achieved marginal significance. Population density and the proportion of renters was higher in hotspot neighbourhoods by 52% and 103%, respectively, whereas median income was 24% lower in those same neighbourhoods. Similar to Nanaimo, the discrepancy in Aboriginal population (about 2.5 times higher in hotspots) and in the proportion of those with limited education (about 1.9 times higher in hotspots) were both marginally significant. No data were available for population change. In fact, in addition to Campbell River, data were missing for this variable for Courtenay and Cowichan. All other remaining indicators failed to demonstrate significant findings.

TABLE 54: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – CAMPBELL RIVER

	Hotspots	Non-Hotspots	t value
Population Density	1,923	1,265	-2.26*
Population Change 2006-2011 (%)	N/A	N/A	
Young Males - Aged 15-24 (%)	5.7%	5.6%	-0.15
Unmarried (%)	50.3%	36.5%	-4.47**
Mobility - Last 5 Years (%)	40.1%	41.4%	0.34
Immigration (%)	8.2%	10.1%	1.14
Aboriginal Population (%)	15.6%	6.2%	-2.78*
Median Household Income ($)	$46,680	$61,712	2.81*
Unemployment Rate	5.6%	6.9%	0.63
Labour Force Participation (%)	57.5%	62.9%	1.71
Less Than High School Education (%)	20.3%	10.8%	-2.70*
Renters (%)	39.7%	19.5%	-2.99*
Housing Condition - Major Repairs (%)	11.3%	4.3%	-1.65

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN COURTENAY

In Courtenay, there were 129 IPV files reported to the RCMP in 2016, or 10.8 files per month. Reporting of IPV files was much higher on Fridays (16.3 per cent) and Saturdays (19.4 per cent) than during the other days of the week, with the exception of Wednesdays (17.8 per cent). In effect, 43.4% of files were reported to the Courtenay RCMP on Friday, Saturday, and Sunday. A slightly higher proportion of IPV-related reports were made between 18:00 and 06:00 in Courtenay (54.3 per cent).

Over half (61.2 per cent) of the files in Courtenay were scored as a common assault. However, a much higher proportion of files (14.7 per cent) than elsewhere were scored as harassing communications. This UCR code, which was not at all as commonly used in most of the other municipalities reviewed across British Columbia, was the second most common UCR code utilized in Courtenay. This contributed to the fact that harassing and threatening behaviours were the main issue in nearly one-third (29.5 per cent) of all founded IPV files in Courtenay. Specifically, harassing

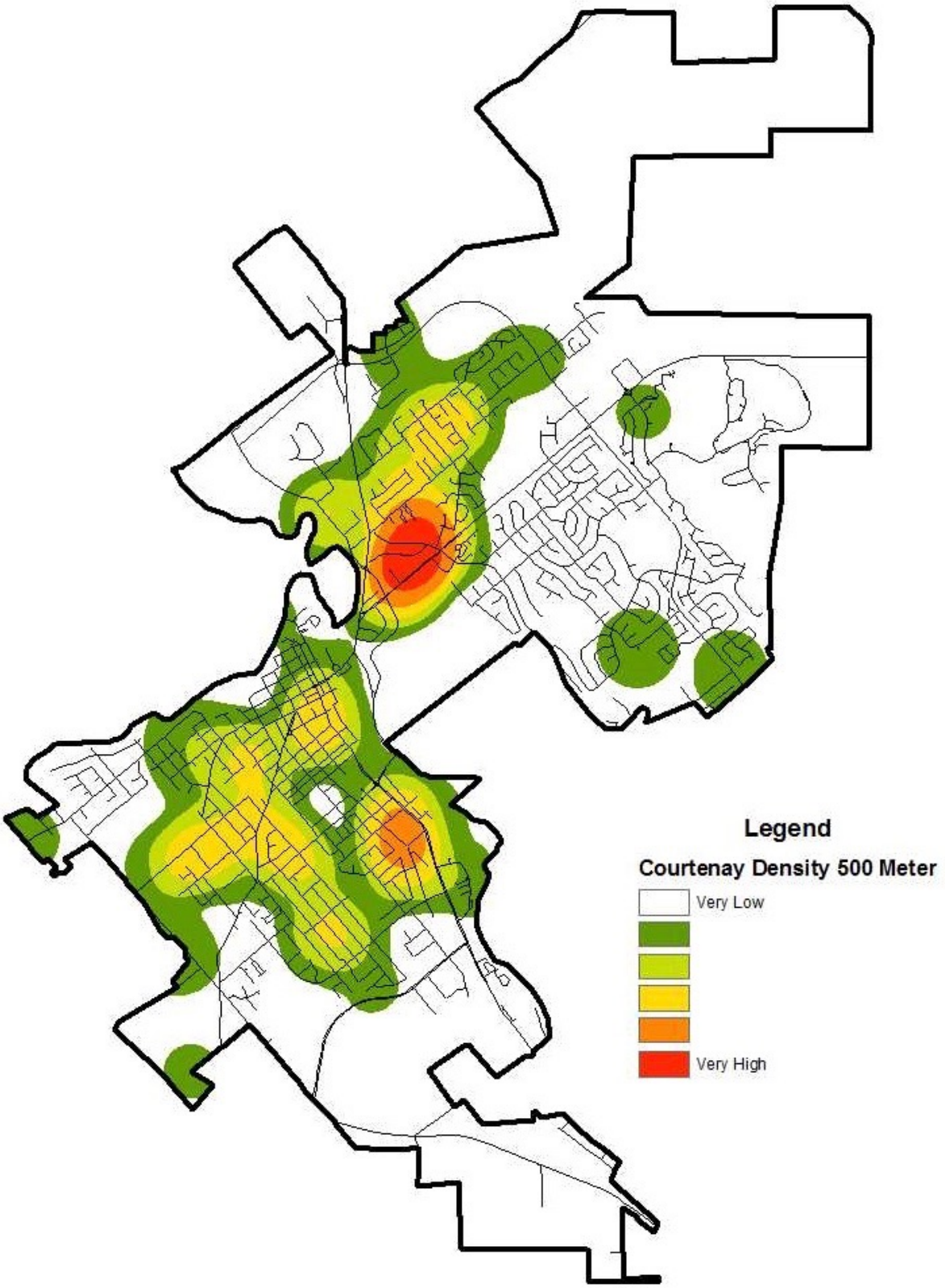
communications made up nearly half of these files, but there was also a relatively large percentage of criminal harassment related files (7.8 per cent), and files involving uttering threats (7 per cent). In fact, the UCR code typically second in many other jurisdictions, namely assault with a weapon or assault causing bodily harm, was only the fourth most common UCR code used in Courtenay (6.2 per cent).

Slightly less than three-quarters (72.1 per cent) of files resulted in a charge laid or recommended against the accused. A relatively large proportion (18.6 per cent) were considered founded not cleared. The other one-tenth of files were either cleared through departmental discretion (4.7 per cent) or involved a complainant who did not want to lay charges (4.7 per cent).

The average age of the accused in Courtenay was higher than the other Island municipalities, at 38.3 years old. There were no youth accused; the ages of accused ranged from 18 years old to 83 years old. One-quarter (25.7 per cent) of the accused were female, and most (86 per cent) were Caucasian, with the second most common ethnic group being Aboriginal (9 per cent). At the time the report of IPV was made, two-thirds of the accused were in a current relationship with the victim, and more commonly in a dating relationship (39.6 per cent), rather than a marital relationship (24 per cent). Slightly less than one-quarter were in a former relationship, with 14.6% of accused being the ex-dating partner of the victim, and 7.3% being the ex-spouse of the partner. Of note, in an additional 14.6% of cases, the relationship status was defined as "other".

As demonstrated in Figure 48, there was one main hotspot for intimate partner violence files in Courtenay in 2016. This hotspot included both commercial areas with outdoor malls, restaurants, and community centers, and residential areas with homes and condominium/apartment buildings. The northern and southern parts of the hotspot was divided by Braidwood Road and Back Road, and extended for several blocks in all directions. A second area of high volume was to the south of the main hotspot and is a residential area. The center of this area was the intersection of Fitzgerald Avenue and 21st Street, and again extended for several blocks in all directions.

FIGURE 48: INTIMATE PARTNER VIOLENCE HOTSPOTS IN COURTENAY



The results from Courtenay were typical of results in this region. Population density was the strongest predictor of IPV, being about 1.6 times higher in hotspots than in non-hotspots (see Table 55). Density was found to be the only fully significant indicator; the other notable findings were only marginally significant. Hotspot neighbourhoods demonstrated higher levels of renters (by 104 per cent), unmarried residents (by 37 per cent), and young males (by 50 per cent) than did other areas of the city. Median income was lower by 36% in hotspot areas, which was one of the largest discrepancies in income levels in the region, behind Nanaimo and North Cowichan. Courtenay was the only municipality in the Island District for which there were statistically significant disparities in immigration levels, if only slightly. In contrast with previous findings, hotspot neighbourhoods actually demonstrated lower levels of immigration (53 per cent lower) than did other neighbourhoods. However, all municipalities from Vancouver Island included in this sample had relatively low levels of immigration; no city in this region exceeded a 15% threshold in either hotspot or non-hotspot areas. IPV hotspots and non-hotspots were similar in terms of other characteristics; no other indicators reached significance. As with Campbell River, no data were available for population change.

Analytically, it is important to note that, for Courtenay, the actual hotspot area was quite small; it was comprised of only four dissemination areas. Consistent with the discussion of Duncan, the wide variability for indicators in the "hotspot" makes it very difficult to find statistical significance. Still, the size of the differences for all of the "marginally" significant indicators, namely young males, unmarried persons, renters, and median household income were quite large, and should be regarded as substantively important.

TABLE 55: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – COURTENAY

	Hotspots	Non-Hotspots	t value
Population Density	**3,060**	**1,470**	**-3.51****
Population Change 2006-2011 (%)	**N/A**	**N/A**	
Young Males - Aged 15-24 (%)	**8.2%**	**5.4%**	**-2.74***
Unmarried (%)	**58.5%**	**42.7%**	**-2.68***
Mobility - Last 5 Years (%)	**57.0%**	**48.8%**	**-1.23**
Immigration (%)	**6.0%**	**12.8%**	**2.21***
Aboriginal Population (%)	**5.8%**	**4.6%**	**-0.41**
Median Household Income ($)	**$34,971**	**$54,492**	**2.11***
Unemployment Rate	**10.5%**	**9.2%**	**-0.30**
Labour Force Participation (%)	**59.2%**	**58.8%**	**-0.07**
Less Than High School Education (%)	**19.9%**	**12.7%**	**-1.21**
Renters (%)	**54.3%**	**26.7%**	**-2.28***
Housing Condition - Major Repairs (%)	**5.4%**	**3.4%**	**-0.46**

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN PORT HARDY

In total, 72 IPV files were reported to the Port Hardy RCMP in 2016. This resulted in an average of six files per month. Although there was a slight peak in file reporting in Port Hardy on Saturdays (18.1 per cent), the most common day for IPV reports to be made was actually Tuesday (20.8 per cent). In effect, 41.7% of all founded IPV files in 2016 in Port Hardy were reported on a Friday, Saturday, or Sunday. A slightly higher proportion of IPV-related reports were made between 18:00 and 06:00 in Port Hardy (54.2 per cent).

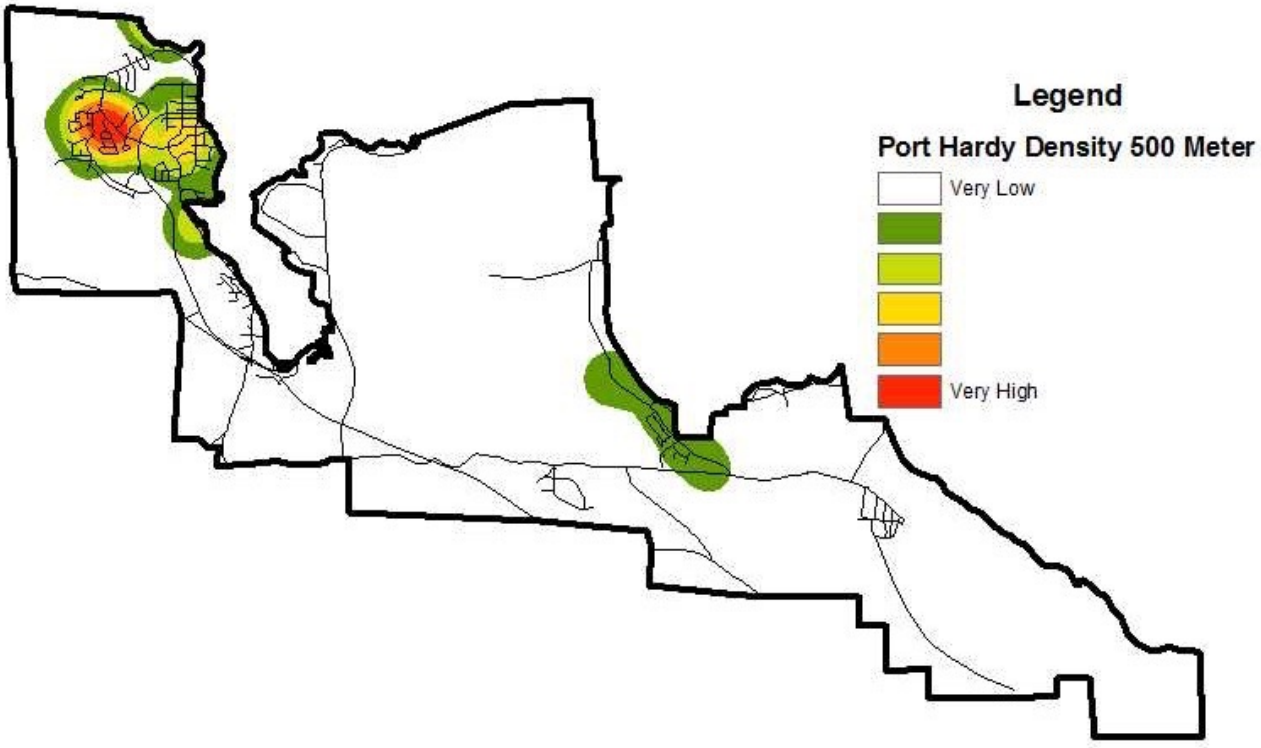
Two-thirds (63.9 per cent) of all founded IPV files in Port Hardy in 2016 were scored as a common assault. The next most common UCR code was an assault with a weapon or an assault causing bodily harm, which accounted for one-tenth (11.1 per cent) of the files. Althogether, the harassing and threatening related files only slightly exceeded this volume (12.5 per cent). Individually, criminal harassment and uttering threats each composed 5.6% of files, while harassing communications composed 1.4% of files. Another 4.2% of files related to forcible confinement.

More than nine out of ten (93.1 per cent) of the accused in a founded IPV file in Port Hardy were charged or had a charge recommended against them. Only three files (4.3 per cent) were cleared through departmental discretion, one (1.4 per cent) was founded not cleared, and one (1.4 per cent) was dealt with otherwise.

The average age of the accused in Port Hardy was 35.1 years old. This ranged from 19 years old to 62 years old, and there were no youth accused. Slightly less than one-third (30 per cent) of the accused were female, and two-thirds (68.1 per cent) were Aboriginal. The other relatively large ethnic group of the accused was Caucasian (30.1 per cent). Three-quarters of the accused were in a current relationship with the victim. In fact, nearly half (46.7 per cent) were in a current dating relationship, while just over one-quarter (28.3 per cent) were in a current marital relationship. Another one-fifth were in a former relationship with the victim; mostly this consisted of former dating partners (16.7 per cent), rather than former marital partners (3.3 per cent).

In terms of intimate partner violence hotspots in Port Hardy in 2016, as demonstrated by Figure 49, there was just one hotspot, and it was found at the north-western part of the city. This is a residential area and the hotspot is bisected by Highview Road and extends just west of Highland Drive to the west, east of Granville Street to the east, the intersection of Highland Drive and Granville Street at its northern end, and Highview Road and Thunderbird Way at the south.

FIGURE 49: INTIMATE PARTNER VIOLENCE HOTSPOTS IN PORT HARDY



Like Courtenay, there was only one fully significant finding for Port Hardy; population density, which was about 1.6 times higher in the IPV hotspots than non-hotspots (see Table 56). The proportion of young males, renters, Aboriginal population, and residential mobility were marginally significant and higher in hotspot areas, by 41%, 39%, and almost 8%, respectively. However, neither household income nor marital status were found to be even slightly significant predictors of IPV. Moreover, Port Hardy was the only municipality in the sample, other than Powell River, with a median household income that was higher (by 13 per cent) in IPV hotspot neighbourhoods. The income level in hotspots was unusually high at over $58,000; only Langford and Powell River had hotspot neighbourhoods that exceeded a median income level of $50,000. There were no notable differences between hotspot and non-hotspot areas with regard to population change, immigration, unemployment, labour force participation, education, or housing condition.

As with our previous discussion of Courtenay, the analysis of Port Hardy is also complicated by the fact that the hotspot area is comparatively small, made up of only three dissemination areas. The effect of this complication is particularly evident for young males and renters, which both demonstrated substantively large differences and should be regarded as important predictors in Port Hardy.

TABLE 56: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – PORT HARDY

	Hotspots	Non-Hotspots	t value
Population Density	1,521	963	-9.78**
Population Change 2006-2011 (%)	4.8%	1.4%	-0.93
Young Males - Aged 15-24 (%)	3.5%	6.0%	-2.79*
Unmarried (%)	43.0%	40.8%	-1.84
Mobility - Last 5 Years (%)	35.6%	38.5%	-2.83*
Immigration (%)	11.4%	12.4%	0.46
Aboriginal Population (%)	7.1%	5.1%	-2.23*
Median Household Income ($)	$58,863	$52,054	1.46
Unemployment Rate	5.1%	5.3%	-2.10
Labour Force Participation (%)	54.5%	54.1%	-1.11
Less Than High School Education (%)	8.9%	9.4%	-0.15
Renters (%)	34.3%	18.4%	-2.49*
Housing Condition - Major Repairs (%)	7.6%	4.1%	-1.54

* $p < .05$; ** $p < .004$

FOUNDED IPV FILES IN 2016 IN LANGFORD

In 2016, in Langford, a total of 71 IPV files were reported to the RCMP. On average, there were 5.9 files reported per month. There was a clear peak in IPV file reporting in Langford on Sundays (23.9 per cent), and Fridays, Saturdays, and Sundays accounted for 45.1% of all founded intimate partner violence files in 2016. IPV file reporting was nearly evenly split between 06:00 to 18:00 (47.9 per cent) and from 18:00 to 06:00 (52.1 per cent). In effect, the number of files reported for each hour interval across 2016 in Langford did not vary substantially.

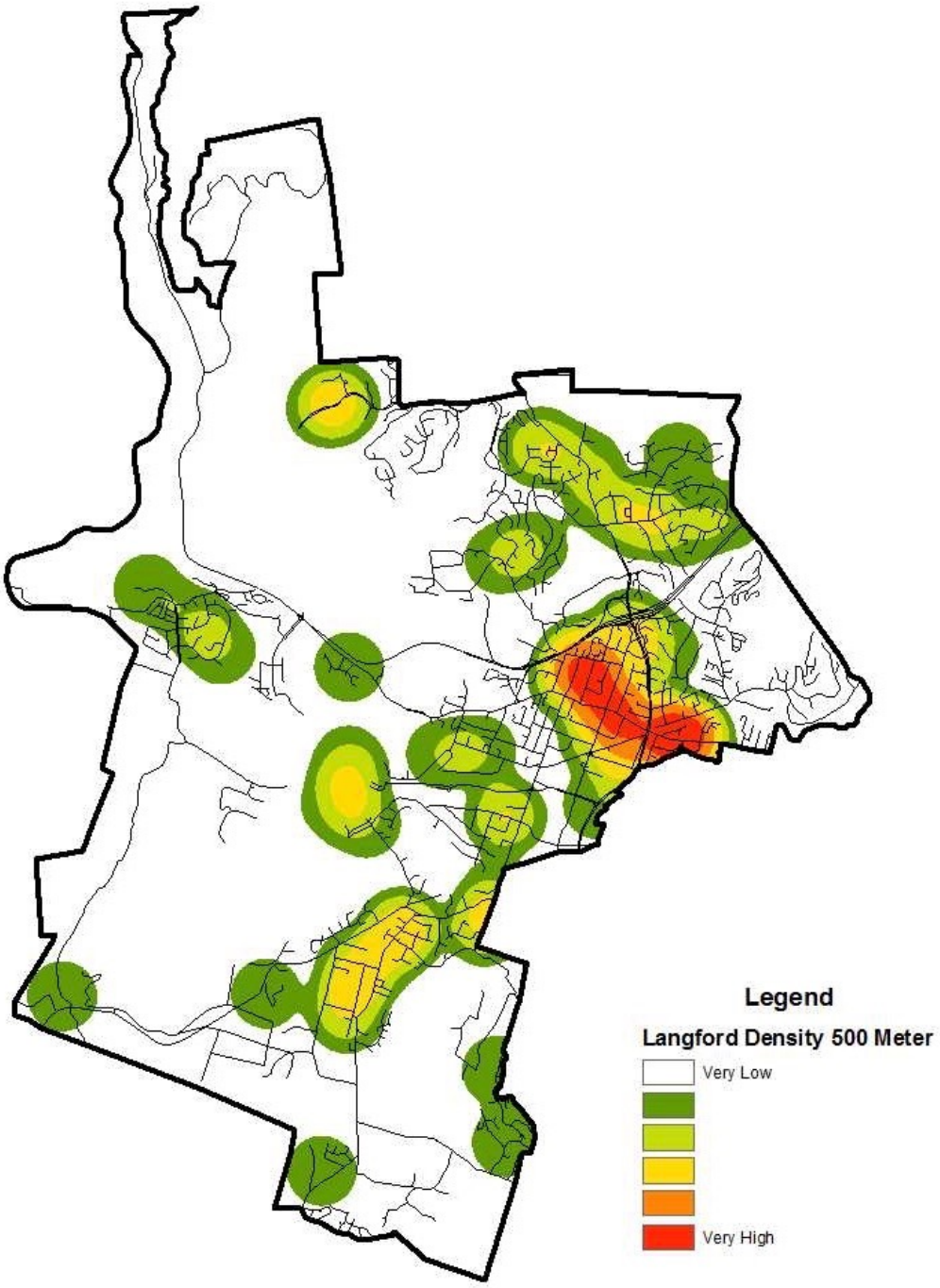
Nearly four out of five (77.5 per cent) founded IPV files were a common assault in Langford. The next most common UCR code was an assault with a weapon or an causing bodily harm, which accounted for 8.5% of all founded IPV files in 2016. Together, the harassing and threatening files composed just over one-tenth (11.3 per cent). Individually, this was divided into uttering threats (5.6 per cent), criminal harassment (2.8 per cent), and harassing communications (2.8 per cent). Over four-fifths (84.5 per cent) of files resulted in the accused receiving a charge or having a charge recommended against them. One-in-ten (9.9 per cent) files were founded not cleared, while half as many (4.2 per cent) were cleared through departmental discretion.

There were no youth accused in Langford, therefore, the age range of accused persons was between 19 years old and 68 years old. The average age of accused in Langford was 35.1 years old. One-fifth (21.9 per cent) of the accused were female, and slightly more than four out of five (84.4 per cent) were Caucasian. The remaining ethnicities of the accused included Aboriginal (6.3 per cent), Asian (3.1 per cent), Middle Eastern (3.1 per cent), or other (3.2 per cent). Nearly three-quarters of the accused (73.8 per cent) were in a current relationship at the time the IPV report was filed. Specifically, nearly half (44.6 per cent) were in a current dating relationship with the victim, while over one-quarter (29.2 per cent) were in a current marital relationship. In total, 16.9% were formerly dating the victim, while 3.1% were divorced from the victim.

As demonstrated in Figure 50, there was one main intimate partner violence hotspot in Langford in 2016. This was found in the eastern part of the city and covered several city blocks. The kidney

shaped hotspot mainly covered residential areas, but did include several blocks of local businesses and larger outdoor mall areas. Goldstream Avenue ran through much of the hotspot from its eastern boundary along Fairway Avenue and Grainger Road to the intersection of Fairway Avenue with Strathmore Road in the north-west of the hotspot. The north-western boundary of the hotspot was found along Jacklin Road and along Brock Avenue.

FIGURE 50: INTIMATE PARTNER VIOLENCE HOTSPOTS IN LANGFORD



The pattern of results for Langford, as well as the remaining municipalities, diverged from those of previous cities in that none showed more than three significant predictors of IPV (see Table 57). Only population density and housing requiring major repairs were significant indicators. Similar to other municipalities in the Island District, population density was about 145% higher in IPV hotspots than non-hotspots. Unexpectedly, the proportion of homes which required major repairs was smaller in hotspot areas, where 0% of homes needed such repairs, compared to non-hotspot areas (2 per cent). This was a relatively small substantive difference. Only one other finding achieved marginal significance, that of marital status. Consistent with other cities in this sample, the proportion of unmarried persons was 21% higher in hotspot neighbourhoods. There were several other notable, though not statistically significant, findings. Population change, for instance, was unusually high in hotspot areas (47 per cent), and was 81% higher than in non-hotspots. With the exception of Cowichan, other municipalities in this region did not exceed a 7% change in population.

Not surprisingly, the pattern of results for Langford is also affected by the problem of geographically small hotspots. Like Port Hardy, Langford's IPV hotspot consists of only three neighborhoods. In addition to unmarried persons, which as only marginally significant, there are several variables that might otherwise have been notable, including low education (70 per cent higher in hotspots), renters (nearly 40 per cent higher in hotspots), mobility (30 per cent higher in hotspots), and median household income (20 per cent lower in hotspots).

TABLE 57: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – LANGFORD

	Hotspots	Non-Hotspots	t value
Population Density	3,906	1,591	-3.75**
Population Change 2006-2011 (%)	47.2%	26.1%	-0.93
Young Males - Aged 15-24 (%)	5.8%	6.2%	1.63
Unmarried (%)	47.6%	39.2%	-2.23*
Mobility - Last 5 Years (%)	65.1%	50.2%	-1.89
Immigration (%)	8.2%	11.4%	1.04
Aboriginal Population (%)	5.4%	4.7%	-0.27
Median Household Income ($)	$57,793	$72,530	1.53
Unemployment Rate	4.7%	4.4%	-0.14
Labour Force Participation (%)	78.1%	72.6%	-1.16
Less Than High School Education (%)	13.1%	7.7%	-1.43
Renters (%)	29.8%	21.6%	-1.17
Housing Condition - Major Repairs (%)	0.0%	2.0%	3.14**

* p < .05; ** p < .004

FOUNDED IPV FILES IN 2016 IN POWELL RIVER

In total, 51 IPV files were reported to the Powell River RCMP in 2016, which resulted in an average of 4.3 files reported each month. More than half (54.9 per cent) of all files were reported to the Powell River RCMP on a Friday, Saturday, or Sunday in 2016. A slightly higher proportion of IPV-related reports were made between 18:00 and 06:00 in Powell River (54.9 per cent). There was a

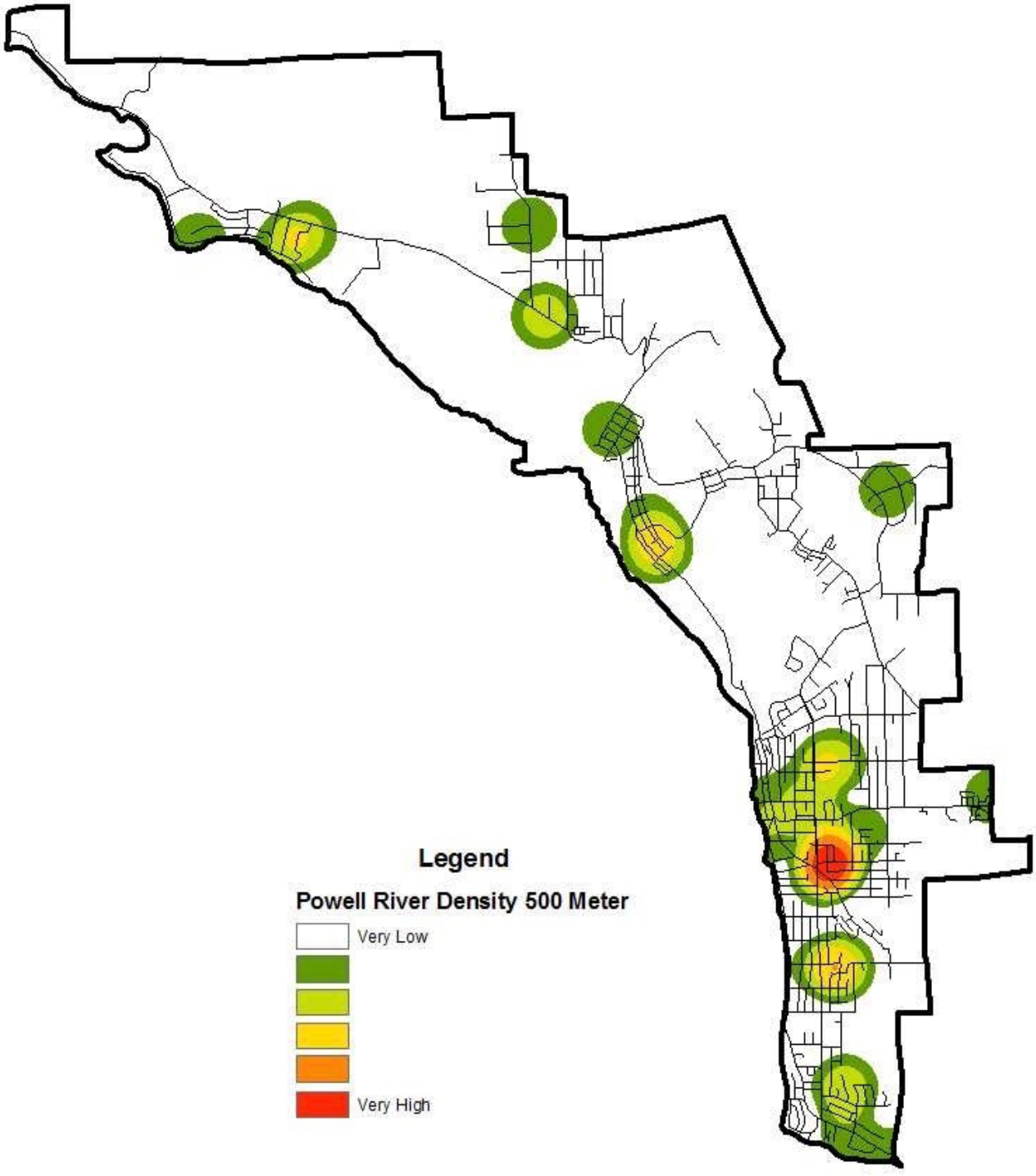
peak in file reporting in the evening between 19:00 and 19:59 (13.7 per cent), followed by a smaller peak between 13:00 and 13:59 (9.8 per cent).

Less than two-thirds (62.7 per cent) of founded IPV files in Powell River were scored as a common assault. A relatively high percentage (15.7 per cent) were considered an assault with a weapon or an assault causing bodily harm. Altogether, the harassing and threatening UCR codes accounted for the third most common set of files. Most of this (9.8 per cent) was composed of uttering threats, while 3.9% of files were related to criminal harassment. No files were assigned a harassing communications UCR in Powell River. Nearly nine in ten (88.2 per cent) files in Powell River resulted in a charge being laid or recommended against the accused. In three files (5.9 per cent), the complainant did not want to lay charges, 3.9% of files were founded not cleared, and one file (2 per cent) was cleared through departmental discretion.

The accused in Powell River were the oldest, on average, compared to the other Island municipalities reviewed, at 39.2 years of age. There were no youth accused, so the range of ages for the accused was 19 years old to 86 years of age. Just over one-fifth (22.4 per cent) were female, and three-quarters (77.1 per cent) were Caucasian. Another 20.8% of the accused were Aboriginal. In contrast to the other municipalities reviewed in the Island District, while over three-quarters of the accused were in a current relationship with the victim at the time of the report, the incident was slightly more likely to involve a married couple (41.3 per cent) than a dating couple (37.0 per cent). Less than one-fifth were in a former relationship. Most commonly this involved a former dating relationship (10.9 per cent), rather than a separated or divorced couple (6.5 per cent).

As demonstrated by Figure 51, there was one hotspot in Powell River related to intimate partner violence files in 2016. This hotspot was in a residential area that has a few homes, several apartment buildings, and some storage facilities, a church, and a community center. The northern boundary of the hotspot was at Field Street, while the southern boundary was Huntingdon Street. To the west, the hotspot extended to just past Joyce Avenue, while the eastern boundary of the hotspot was just to the west of Ontario Avenue.

FIGURE 51: INTIMATE PARTNER VIOLENCE HOTSPOTS IN POWELL RIVER



As demonstrated by Table 58, there was only one significant reported effect for Powell River. The proportion of young males was lower in IPV hotspot neighbourhoods by almost 41%. This finding stands in contrast to the results of other municipalities in this region, where the variable was

significant, there were more young males in hotspot areas. This finding was; however, in line with certain municipalities of the Lower Mainland. Although there were no other significant results, there were some differences worth mentioning. The first relates to median household income. The discrepancy in income was unusual in two ways; the difference was quite small, and it is hotspot areas that had a higher income level (by 13 per cent); a similar finding was reported for Port Hardy. Population density and the proportion of renters were both higher in IPV hotspots, as expected. Like Courtenay, Langford, and Port Hardy, Powell River also has a small hotspot. However, the only variable that was really affected by was, in fact, renters. Hotspots and non-hotspots were quite homogenous in terms of marital status, immigration, Aboriginal population, unemployment, labour force participation, and housing condition; no significant findings were reported for those indicators.

TABLE 58: COMPARISON OF INTIMATE PARTNER VIOLENCE HOTSPOTS AND NON-HOTSPOTS – POWELL RIVER

	Hotspots	Non-Hotspots	t value
Population Density	**1,521**	**963**	**-1.50**
Population Change 2006-2011 (%)	**4.8%**	**1.4%**	**-0.56**
Young Males - Aged 15-24 (%)	**3.5%**	**6.0%**	**3.31****
Unmarried (%)	**43.0%**	**40.8%**	**-0.43**
Mobility - Last 5 Years (%)	**35.6%**	**38.5%**	**0.37**
Immigration (%)	**11.4%**	**12.4%**	**1.11**
Aboriginal Population (%)	**7.1%**	**5.1%**	**-0.73**
Median Household Income ($)	**$58,863**	**$52,054**	**-0.73**
Unemployment Rate	**5.1%**	**5.3%**	**0.05**
Labour Force Participation (%)	**54.5%**	**54.1%**	**-0.07**
Less Than High School Education (%)	**8.9%**	**9.4%**	**0.10**
Renters (%)	**34.3%**	**18.4%**	**-1.53**
Housing Condition - Major Repairs (%)	**7.6%**	**4.1%**	**-0.59**

* $p < .05$; ** $p < .004$

COMPARING FOUNDED IPV FILES IN 2016 IN THE TOP EIGHT MUNICIPALITIES IN THE ISLAND DISTRICT

Once again, some statistical comparisons were conducted between the top eight municipalities in the Island District to identify meaningful differences. There was no statistically significant difference in the number of founded IPV files reported by month of year, ($x^2 = 74.0$, $df = 77$, $p > .05$), relationship status ($x^2 = 35.5$, $df = 28$, $p > .05$), the gender of accused ($x^2 = 9.0$, $df = 7$, $p > .05$), or whether the relationship was current or not between the accused and the victim ($x^2 = 5.1$, $df = 7$, $p > .05$).

The day of the week did differ significantly by municipality in the Island District x^2 (42) = 58.6, $p < .05$. Although the specific days and locations that varied significantly could not be determined in a single analysis, as demonstrated in Table 59, there was some variation for five of the seven days of the week. For instance, on Sundays, half as many files as were typical for the District were reported in Courtenay. In contrast, compared to Courtenay, three times as many files were reported on Sundays in Langford and Powell River. Similarly, more than three times as many files were reported on Mondays in Langford as were reported in Campbell River. Four times as many files were

reported on Tuesdays in Port Hardy compared to the number reported in Powell River. While the difference was not as substantial, more than twice as many files were reported in Powell River on Thursdays compared to the number in Langford. Lastly, nearly three times as many files were reported on Fridays in Campbell River as in Langford. While there were also variations in municipalities on the Wednesday and Saturday, the differences between the smallest and largest reporting municipalities was not as large.

TABLE 59: FOUNDED IPV FILES BY DAY OF THE WEEK IN THE TOP 8 MUNICIPALITIES OF THE ISLAND DISTRICT

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Nanaimo	18.2%	16.6%	14.3%	11.7%	13.3%	12.3%	13.6%
Duncan	13.1%	12.2%	16.0%	9.4%	16.4%	16.4%	16.4%
Port Alberni	16.6%	16.6%	11.7%	9.0%	11.0%	16.6%	18.6%
Campbell River	14.5%	5.8%	12.3%	17.4%	13.0%	19.6%	17.4%
Courtenay	7.8%	14.0%	13.2%	17.8%	11.6%	16.3%	19.4%
Port Hardy	12.5%	9.7%	20.8%	12.5%	15.3%	11.1%	18.1%
Langford	23.9%	18.3%	16.9%	12.7%	7.1%	7.0%	14.1%
Powell River	23.5%	9.8%	5.9%	11.8%	17.6%	9.8%	21.6%
Totals	15.6% N = 176	13.5%, N = 152	14.1% N = 159	12.4% N =140	13.3% N = 150	14.5% N = 163	16.6% N = 187

The proportion of files assigned to each UCR code also varied between the top eight Island municipalities, x^2 (35) = 72.5, p < .001. Given that so few files were scored as forcible confinement, sexual assault, or other, only the proportion of files scored with the other more common UCR categories are displayed in Table 60. The main difference appeared to come from the proportion of files assigned with a threatening or harassing related UCR in Courtenay compared to elsewhere, as Courtenay had twice as many files, on average, than the other places, and three times as many files scored that when compared to Campbell River. There was also a difference in the proportion of files scored as an assault with a weapon or an assault causing bodily harm. Nearly three times as many files received this designation in Port Alberni compared to in Courtenay.

TABLE 60: USE OF ASSAULT VERSUS HARASSING AND THREATENING UCR CODES IN THE TOP 8 ISLAND DETACHMENTS

	% Common Assault	% Assault w/Weapon or CBH	% Threats/Harassment
Nanaimo	73.1%	11.0%	12.7%
Duncan	65.3%	9.4%	17.8%
Port Alberni	59.3%	17.2%	14.5%
Campbell River	74.6%	7.2%	10.1%
Courtenay	61.2%	6.2%	29.5%
Port Hardy	63.9%	11.1%	12.5%
Langford	77.5%	8.5%	11.3%
Powell River	62.7%	15.7%	13.7%
Totals	67.9%, N = 765	10.6%, N = 119	15.4%, N = 174

The CCJS status of the file also varied by municipality, x^2 (28) = 90.2, p < .001. The information presented in Table 61 only compares the three most common file statuses. However, it is

worthwhile pointing out that, while there were, generally, very few files in which the complainant did not want to lay a charge (5.6 per cent), a much higher proportion of files were coded this way in Campbell River (13.0 per cent) compared to elsewhere. In all eight municipalities, the majority of accused had a charge laid or recommended against them. However, this was 25% less likely to occur in Campbell River than in Port Hardy. In contrast, Campbell River had a higher proportion of files cleared through departmental discretion, particularly when compared to Powell River. There was also a very wide discrepancy in the proportion of files designated as founded not cleared in Courtenay, particularly when compared to the files in Port Hardy. In effect, files were 13 times more likely to be founded not cleared in Courtenay compared to Port Hardy, and they were more than 2.5 times more likely to be founded not cleared compared to the typical proportion in the other seven Island District municipalities.

TABLE 61: COMPARING THREE FILE OUTCOME CATEGORIES IN THE TOP 8 ISLAND DETACHMENTS

	% Charged	% Departmental Discretion	% Founded not Cleared
Nanaimo	78.2%	7.1%	6.2%
Duncan	82.2%	9.4%	5.2%
Port Alberni	91.0%	2.1%	4.1%
Campbell River	70.3%	10.9%	5.8%
Courtenay	72.1%	4.7%	18.6%
Port Hardy	93.1%	4.2%	1.4%
Langford	84.5%	4.2%	9.9%
Powell River	88.2%	2.0%	3.9%
Totals	80.7%, N = 910	6.5%, N = 73	6.9%, N = 78

Most of the accused were of either Caucasian or Aboriginal ethnicity, while only a small proportion were of any other ethnic background. These proportions varied significantly across the eight municipalities reviewed in the Island District. x^2 (14) 138.4, $p < .001$. Whereas 62% of all accused in these municipalities were Caucasian, less than one-third (30.4 per cent) of the accused in Port Hardy were Caucasian, as were less than half of those in Port Alberni (47.3 per cent) and Duncan (49.7 per cent). In contrast, 86.0% of the accused in Courtenay were Caucasian, as were 84.4% of the accused in Langford. On the other hand, Aboriginal accused composed a much higher proportion of the accused in Port Hardy (68.1 per cent), followed by Port Alberni (50.4 per cent) compared to the overall proportion (34.6 per cent). In contrast, the accused in Langford were 82% less likely to be Aboriginal (6.3 per cent) when compared to the typical proportion of Aboriginal accused (34.6 per cent) across these eight Island District municipalities.

The average age of the accused also differed significantly by municipality, F (7, 1040) = 3.0, $p < .01$. There were two specific comparisons that led to this difference. The accused in Port Alberni were significantly younger (33.2 years old) than the accused in Courtenay (38.3 years old) or the accused in Powell River (39.2 years old). In addition, the proportion of files involving youth accused also differed significantly, x^2 (7) = 18.5, $p < .05$. Overall, only 2% of files involved an accused under the age of 18 years old. While Courtenay, Port Hardy, Langford, and Powell River had no youth accused, Duncan was significantly more likely to have youth accused (5.4 per cent).

Four-fifths (85.8 per cent, n = 910) of files in the Island District resulted in a charge being recommended. The ten predictor variables together produced a statistically significant model explaining the likelihood of a charge being recommended, x^2 (10) = 40.7, p < .001. The Nagelkerke R^2 value indicated that 14.2% of the variance in charges was explained, and 95% of cases were correctly classified. Three of the independent variables were significant predictors of charge outcome (see Table 62). Similar to previous analyses, being a male increased the likelihood of a charge, while a harassment or threats UCR decreased the likelihood of a charge being recommended. Interestingly, whether the offender was in a current relationship with the victim predicted the likelihood of a charge, raising the odds of a charge outcome twofold in the Island District.

TABLE 62: LOGISTIC REGRESSION MODELS PREDICTING FILE OUTCOMES IN THE ISLAND DISTRICT

Predictors	Model = Charges				Model = Discretion			
	B	S.E.	Wald	Exp (B)	B	S.E.	Wald	Exp (B)
Constant	1.56	0.79	3.90	4.78*	-1.64	0.80	4.19	0.20*
Caucasian	0.48	0.57	0.70	1.62	-0.51	0.57	0.81	0.60
Aboriginal	1.03	0.64	2.56	2.80	-1.01	0.64	2.44	0.37
South Asian	-0.63	1.30	0.24	0.53	0.63	1.30	0.24	1.88
Asian	18.99	14171.4	0.00	-	-18.93	14220.9	0.00	0.00
Age	-0.01	0.01	1.00	0.99	0.02	0.01	1.25	1.02
Current Relationship	0.80	0.36	4.88	2.22*	-0.83	0.36	5.19	0.44*
Spouse	-0.28	0.36	0.60	0.76	0.21	0.36	0.35	1.24
Male	1.39	0.35	15.97	4.01***	-1.33	0.35	14.15	0.27***
Assault Wpn/CBH	1.88	1.03	3.31	6.54	-1.83	1.03	3.12	0.16
Harass/Threats	-1.19	0.42	7.87	0.31**	1.19	0.42	7.88	3.28**

* $p < .05$ ** $p < .01$ *** $p < .001$

Again, a small number of cases (6.9 per cent, n = 73) in the Island District resulted in a file being cleared through departmental discretion. Still, the model was significant, [x^2 (10) = 39.18, p < .001]. The predictors explained more than one-tenth of the variance in files being cleared through departmental discretion (Nagelkerke R^2 = 0.138), and 95.1% of cases were correctly classified. As shown in Table 63, three independent variables were predictive of the likelihood that an IPV file in the Island District would be cleared through departmental discretion; being male, and being in a current relationship with the victim resulted in lower odds of the file being cleared by departmental

discretion, whereas the file being scored as a harassment/threat related event raised the likelihood the file would be cleared through departmental discretion threefold.

When considering the logistic regression findings for all districts, while it was expected that the police would be likely to recommend charges in founded IPV calls involving an assault with a weapon or an assault causing bodily harm, it was not anticipated that files involving threats or harassment related events would be cleared through other means. One explanation for these findings is that the police are more likely to recommend charges when there is visible evidence that an assault occurred, such as visible injuries to the victim. It may be more difficult for police to gather the necessary evidence to support a criminal charge when the file includes threats made verbally, or when the harassment involved physical stalking.

The overall pattern of results presented in Table 63 place Vancouver Island firmly between the Southeast and North districts. There are comparatively more significant results than were evident for the North, but fewer than there were for the Southeast. In keeping with the other districts, the strongest effects were recorded for Nanaimo, the city with the largest number of founded IPV files in the Island District. The usual pattern also broke down somewhat; however, as there were no full significant effects for Duncan. Otherwise, the findings here tended to affirm those that have already been established. Variables, such as population density, unmarried persons, and, to a lesser extent, median household income, performed best, although there were not strong, while variables, such as population change and labour force participation, were of restricted utility.

TABLE 63: SUMMARY OF SIGNIFICANT T VALUES ACROSS MUNICIPALITIES – VANCOUVER ISLAND

	Nanaimo	Duncan	Port Alberni	Campbell River	Courtenay	Port Hardy	Langford	Powell River
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 < .05; ** p < .004

BIVARIATE AND MULTIVARIATE ANALYSES OF INTIMATE PARTNER VIOLENCE CRIMES IN BC

The first step in examining the effects of the various covariates on IPV rates was to conduct bivariate and multivariate analyses for all of BC. The results of these analyses are presented in the first two columns of Table 64 (labelled Bivar. (i.e., Bivariate) t-value and Multi. (i.e., Multivariate) t-value respectively). According to the bivariate results, most of the structural variables tested showed a statistically significant relationship with IPV rates. Only three variables failed to reach at least marginal statistical significance; population density, young males, and labour force participation. Two variables, population change and immigration, showed marginally significant effects, while all of the remaining variables displayed very notable effects. All of these variables produced results in directions consistent with those hypothesized by social disorganization theory. For example, IPV is higher in those neighborhoods characterized by greater proportions of unmarried persons, higher levels of mobility, and, to a less degree, more population change. Together, these variables may be indicators of transience and a lack of commitment to an area, which results in diminished levels of informal social control. The strong positive effects of renters and poor housing conditions similarly suggest areas that are less stable. The large positive effects of unemployment and low educational levels, as well as the strong negative effect of median household income, reveal an important socio-economic dimension to these socially disorganized areas: rates of IPV are higher in areas where unemployment and proportions of individuals with less than a high school education are higher, and where median household incomes are lower.

There are two other factors that merit attention. First, the proportion of Aboriginal population was positively related to IPV rates. This bivariate effect was noted across all of the district analyses as well. However, the disaggregated multivariate analyses clearly indicate that the effect of Aboriginal population is context-specific; this effect is significant only in Northern BC and on Vancouver Island. To at least some degree, the relationship between Aboriginal population and IPV is potentially conditioned by the effects of other social and economic indicators. However, the lack of other significant factors, besides married persons, in the North and Island Districts may indicate that a more direct effect is operating in those areas.

The second variable worthy of special note at the provincial level is immigration. Although conventional wisdom posits that there should be a positive association between immigration and crime, research has not consistently been able to find evidence of this association. For example, previous research on property crime in the Lower Mainland of BC found that immigration was actually a protective factor, that there was a significant negative effect between immigration and property crime rates. In this study, levels of immigration were positively, if marginally, significant in the bivariate analysis and were fully significant in the multivariate analysis. But, as with the findings for Aboriginal population, the effects of immigration were contingent. In effect, in the disaggregated multivariate analyses, immigration was significant only in the Lower Mainland. These results suggest that the effects of immigration vary by crime type, while further buttressing the broader argument that the effects of structural factors are highly contextual in nature.

Overall, the multivariate results for BC were similar to those demonstrated in the bivariate analysis. Half of the variables that showed bivariate significance remained significant when all of the factors were considered simultaneously; unmarried persons, mobility, less than high school education, renters, housing condition, and, as already mentioned, Aboriginal population and immigration. As

well, the proportion of young males was insignificant in both analyses. In contrast, several of the variables saw notable changes. The most remarkable changes were for median household income and unemployment rate, both which moved from being very significant to being non-significant. Moreover, this pattern of bivariate significance, but multivariate insignificance, was reproduced in each of the districts, clearly indicating a robust result. While it is clear that median household income and unemployment rates are, on their own, strong predictors of IPV rates, the multivariate results suggest that their effects may be moderated by the effects of other factors. For example, it is possible that lower incomes and unemployment may reflect lower levels of education and higher levels of people being single and greater mobility. Secondary analyses showed that these variables were strong predictors as were the economic factors, but did not reveal problems of multicollinearity. The other variable that showed a diminished effect was population change, which dropped from marginal significance to non-significance.

Finally, two variables showed change in the opposite direction; that is, they became significant in the multivariate analysis. Population density presented a very distinct pattern for BC and for each of the districts, except the Island District, and was not significant in the bivariate analyses, but was significant in the multivariate analyses. To be more precise, the multivariate analyses showed that IPV rates were higher in areas with lower levels of population density. Results of this type, which reveal a switching from non-significance to significance, are normally indicative of interactions among variables. This is most likely the case here as well. In other words, it is not simply population density, but population density in combination with other factors that influences IPV rates. However, secondary analyses were unable to pinpoint the specific nature of the interactions in this study. This further suggests that the interactions are highly complex and may vary across jurisdictions. Labour force participation demonstrated similar switching, but that result was evident only for the Lower Mainland.

As has already been alluded to, the principle feature of the disaggregated, district-by-district analyses was variability. On one hand, the multivariate analyses for the Lower Mainland almost perfectly mirrored those for all of BC. The only differences between the two were that both Aboriginal population and housing condition were not significant in the multivariate analysis of the Lower Mainland. These closely parallel findings were not unexpected, as almost two-thirds (63 per cent) of the disseminations areas captured in this study were located in the Lower Mainland. Put another way, given that that bulk of the dissemination areas were located in the Lower Mainland, we would expect that the results from that area would drive the overall provincial results.

In light of the results shown in Table 64, it would also be reasonable to conclude that structural factors are far better predictors of IPV rates in the Lower Mainland than in other districts in BC. Although the disaggregated bivariate analysis presented numerous significant relationships, the multivariable models for the Southeast, North, and Island Districts revealed noticeably fewer significant variables. For the Southeast, only unmarried persons, population density, and renters were significant after controlling for the effects for the other variables in the model. For Northern BC, in addition to unmarried persons and Aboriginal population, only population density functioned as a noteworthy predictor. And, for the Island District, only unmarried persons and Aboriginal population were significant predictors of IPV. While structural considerations were still relevant in these three areas of BC, they were less important than in the Lower Mainland. It would seem as

though a more comprehensive explanation of IPV in these districts would require information on additional factors.

TABLE 64: EFFECTS OF STRUCTURAL VARIABLES ON INTIMATE PARTNER VIOLENCE RATES (LOGGED)

	BC		Lower Mainland		Southeast		North		Vancouver Island	
	Bivar. t value	Multi. t value	Bivar. t value	Multi. t value	Bivar. t value	Multi. t value	Bivar. t value	Multi. t value	Bivar. t value	Multi. t value
Population Density	-0.25	-8.74‡	-0.70	-7.48‡	1.11	-3.91‡	0.11	-3.83‡	2.84*	-1.31
Population Change 2006-2011 (%)	2.56*	1.28	1.78	0.72	1.47	0.65	0.96	-0.63	1.42	1.09
Young Males - Aged 15-24 (%)	1.88	-0.81	-1.06	-1.08	1.35	0.31	1.74	-0.21	3.80**	0.70
Unmarried (%)	24.86**	8.86‡	1.95	4.99‡	1.73	4.36‡	1.33	4.06‡	1.46	5.64‡
Mobility - Last 5 Years (%)	15.71**	4.92‡	11.47**	4.70‡	5.50**	0.48	6.38**	1.10	6.95**	1.74
Immigration (%)	2.36*	3.17‡	4.92**	3.29‡	-1.77	-0.52	-1.09	0.18	-3.35**	1.56
Aboriginal Population (%)	15.02**	5.05‡	6.42**	1.03	4.37**	0.05	8.11**	3.52‡	7.64**	3.26‡
Median Household Income ($)	-17.32**	-0.70	-10.95**	-0.96	3.27**	0.54	-8.00**	1.40	-9.79**	0.53
Unemployment Rate	9.51**	1.59	5.46**	0.02	3.27**	0.10	3.96**	1.92	5.64**	0.33
Labour Force Participation (%)	-1.74	2.67‡	-0.26	2.74‡	-0.05	0.54	-5.00**	-0.07	0.28	0.90
Less Than High School Education (%)	13.88**	3.80‡	9.55**	3.75‡	5.15**	0.93	5.26**	0.17	6.46**	1.62
Renters (%)	23.03**	5.47‡	15.05**	5.13‡	9.97**	2.18‡	10.02**	1.82	10.23**	-0.22
Housing Condition - Major Repairs (%)	8.89**	2.20‡	4.99**	1.38	5.29**	2.30‡	3.01**	-0.40	4.49**	0.48

* $p < .05$; ** $p < .004$

‡ $p < .05$

Conclusion

This report describes the trends in intimate partner violence over a five year period in British Columbia, and provides an in-depth analysis of the 2016 files managed by 'E' Division RCMP Detachments. The analyses indicate that generally the number of files was proportional to the population size, although some smaller jurisdictions had a higher proportion of IPV files than would be expected based on their population. It is possible that these files involve a small group of perpetrators who repeatedly engage in IPV, thus increasing the rate of IPV relative to the population. As the data analyzed for this report did not include identifiers for the victim or perpetrator, it was not possible to assess to what extent the data reflected repeat offending by the same perpetrators.

The intimate partner violence trends reported in this study may assist 'E' Division RCMP in determining where to concentrate resources relating to specialized intimate partner violence services. There are several models currently in place that the RCMP may consider implementing. At

the most integrated end of the spectrum, several detachments, including the Surrey RCMP, operate an integrated Domestic Violence Unit (DVU) with representation and collaboration between RCMP investigators, police-based and community-based victim services, and representatives from the Ministry of Child and Family Development (McCormick, Cohen, & Corrado, 2015). At the other end of the spectrum, a single corporal or constable may be primarily responsible for managing domestic violence files. There are also a range of other options, including DVUs that provide specialized training and a mandate for investigators to focus on domestic violence files, or detachments that provide specialized training to representatives on each Watch, which is an approach recently introduced by the Surrey DVU to enhance the general duty response to intimate partner violence files.

While it was anticipated that the detachments would experience variable rates of files cleared through charges, as opposed to through departmental discretion or uncleared, it was unexpected that, in many of the detachments, these patterns were associated with the nature of the UCR score assigned. In several cases, it appeared as though when detachments scored a file as relating to harassment, the file was less likely to be concluded with recommended charges. One reason for this may be the lack of familiarity with the relatively new charge of harassing communications. Another reason may be that obtaining the evidence necessary to support a conviction may be more difficult for this UCR category, as the threats may be verbal in nature, therefore, more difficult to substantiate. Still, it may be beneficial for the 'E' Division RCMP to explore the use of this UCR code further to ensure members are familiar with this code and the evidence required to support a successful prosecution.

In a handbook on criminal harassment, the Department of Justice Canada provided examples of how the police can provide support to victims of threatening and harassing behaviours. These include avoiding the suspect when possible, encouraging the victim to adjust their typical patterns and lifestyle, and advising the victim to retain as much evidence as possible to document the threatening and/or harassing behaviours. Although not necessarily increasing the likelihood that a criminal charge can be laid, these responses should at least enhance the victim's safety and leave the victim feeling like their concerns have been acknowledged. Given the nature of this study, it was not possible to determine whether the RCMP handling these files utilized some or all of the suggested strategies to support victims. Still, the patterns identified in both the bivariate and multivariate analyses regarding threat/harassment files, and in particular the harassing communications files, suggest that the RCMP should consider undertaking a review of its strategic response to files involving threats and intimidation, criminal harassment, and harassing communications to ensure its members are fully cognizant of the current policies and practices in investigating these forms of intimate partner violence.

Within each jurisdiction, the analyses identified hot spots with higher than expected rates of calls for service involving intimate partner violence. Further, the analyses identified several consistent socio-contextual factors that differentiated hot spots from non-hot spots. These factors frequently included a higher proportion of renters, lower median household income, greater population density, rate of unmarried persons, and greater rates of residential mobility. To a lesser effect, unemployment rates, immigration rates, poor housing conditions, and limited education were also associated with hot spot zones. Importantly, these factors displayed different levels of prominence

and appeared in different combinations for the 33 jurisdictions analyzed in depth, suggesting that there are a wide range of underlying societal factors contributing to the rates of IPV. Another interpretation of these structural factors is that they are likely to contribute at an individual level to high rates of stress, which may be coped with through the use of alcohol. In other words, the pathways linking structural characteristics to IPV occurrence may be either direct or indirect. While the variability in socio-contextual factors contributing to the explanation of intimate partner violence makes it more difficult for generic programming to be introduced, it suggests that paying attention to the specific underlying factors contributing to intimate partner violence in each community may result in greater reductions of intimate partner violence, as the specific causal factors are being appropriately targeted.

Importantly, these factors are commonly related to social disorganization theory, and more specifically, collective efficacy. This suggests that one potential approach to better prevent intimate partner violence would be a policing philosophy that emphasizes building additional connections with the community and involving the community in problem-solving and crime prevention strategies to a greater degree. Sadusky (2003) identified five promising practices that integrated community policing with domestic violence: (1) police and community partnerships; (2) neighbourhood-based organizing and problem solving; (3) community policing action team; (4) access and collaboration; and (5) the safety and accountability audits as a community problem-solving tool. Essentially, these practices speak to the importance of developing specialized units, developing partnerships with community groups, increasing the amount of effort put into education and prevention via public awareness campaigns, sharing information with partners, and seeking feedback from the community regarding performance assessment and achievement of outcomes.

Applying community policing to intimate partner violence would mean a shift in the way many detachments currently handle this type of call for service. Further, it would mean developing more collaborative partnerships with the community to prevent the development and re-occurrence of intimate partner violence. Community policing is related to the notion of problem-oriented policing, which means that rather than repeatedly responding to calls for service only to recommend charges before repeating the process again, the police officer is actively engaged in attempting to understand the underlying issues driving participation in violence. With regards to the factors identified as relevant in the current study, it appears that, in attempting to solve the underlying factors contributing to intimate partner violence, members would need to attend to a wide range of socio-contextual factors. Yet, rather than attempt to deal with these factors themselves, one strategy the RCMP may consider is calling on the province to develop low-risk intervention opportunities. Some communities outside of British Columbia utilize docket systems that quickly and effectively connect an individual arrested for an intimate partner violence-related offence with the option to avoid charges by agreeing to treatment or counselling. In communities with this practice, treatment completion is relatively high and rates of repeat IPV are fairly low (e.g. Clements, Holtzworth-Munroe, Gondolf, & Meehan, 2002, as cited in Kelly & Johnson, 2008; Eckhardt, Holtzworth-Munroe, Norlander, Sibley, & Cahill, 2008; Kelly & Johnson, 2008).

A very different approach would be required to effectively manage higher risk intimate partner violence perpetrators. Deterring chronic intimate partner violence perpetrators is a difficult task, as

in many cases, using violence to solve problems has become an ingrained habit, contributing to a cycle of violence and repeat victimization. In addition to the socio-contextual factors identified in the analyses presented in this report, the available research literature suggests an array of individual-level factors that are likely contributing factors to the use of violence, including the use of illicit substances, mental health issues, and a coercive-controlling personality type. In these more extreme cases of intimate partner violence, it is likely that the police need to be involved for the duration of a high-risk offender's involvement with the criminal justice system. For instance, in the Surrey RCMP detachment, investigators from the DVU are involved from the moment the file is determined to meet the mandate of the Unit, through the offender's possible court time and prison sentence, and for the duration of their completion of the sentence in the community.

A particularly important time to maintain the connection with the perpetrator is once they have returned to the community. Flowing from the principles of community policing, partnerships with other agencies and engaging the community would be beneficial at this stage. At the point of release, parole officers and/or police investigators regularly check in with the offender to ensure they are abiding by their release conditions, including curfews, program attendance, and no contact orders. Some communities utilize police-parole partnerships where they will take a team approach to following up with the perpetrator, in other cases, police may request that high risk offender supervision teams monitor or conduct home checks with the perpetrator (McCormick et al., 2015). Another approach adopted by many jurisdictions across British Columbia is the Interagency Case Assessment Teams (ICAT), which is a multi-sector collaborative partnership to actively manage highest risk offender files. When an offender has been assessed at the highest level of risk, provincial policy mandates that information must be shared about the offender if that knowledge might reduce the risk of lethal violence. This enables team members to stay alert to the perpetrator's level of risk, enabling them to act quickly should the perpetrator display signs of potential violence towards their current or former partner. Currently, ICATs do not exist in all jurisdictions across British Columbia. Based on the IPV trends reported in this study, the 'E' Division RCMP may consider prioritizing the development of ICATs or other similar "hub" style approaches in some of their policing jurisdictions.

Adopting a community-level approach to understand the underlying socio-contextual files associated with rates of IPV is an essential first step in assessing the need to establish IPV-specific RCMP programs and units. This review indicated that RCMP generally appear to be handling IPV cases in the manner expected via provincial policy, as the majority of founded IPV files resulted in the investigator recommending charges. Still, the community rates of IPV support that more emphasis is needed on the prevention side, such as through a focus on low-risk intervention programs that deter the development of chronic offending, and through targeted intervention with chronic IPV perpetrators.

References

Ammar, N., Couture-Carron, A., Alvi, S., & San Antonio, J. (2014). Experiences of Muslim and Non-Muslim battered immigrant women with the police in the United States: A closer understanding of the commonalities and differences. *Violence Against Women, 19*(12): 1449-1471.

Andersson, N. & Nahwegahbow, A. (2010). Family violence and the need for prevention research in First Nations, Inuit, and Métis communities. *Pimatisiwin: A Journal of Aboriginal and Indigenous Community Health, 8*(2) 9-33.

Archer, J. (2000). Sex differences in aggression between heterosexual partners: A metanalytic review. *Psychological Bulletin*, *126*, 651-680.

Baobid, M. (2002). *Access to Woman Abuse Services by Arab-Speaking Muslim Women in London, Ontario: Background Investigation and Recommendations for Further Research and Community Outreach*. London, Ontario: Centre for Research on Violence Against Women and Children.

Barnish, M. (2004). *Domestic Violence: A Literature Review*. HM Inspectorate of Probation. London, UK: Home Office.

Baskin, C. (2006). Systemic oppression, violence, and healing in Aboriginal families and communities. In R. Alaggia & C. Vine (eds.), *Cruel but not Unusual: Violence in Canadian Families* (pp.15-48). Waterloo, ON: Wilfrid Laurier University Press.

Beattie, K. (2005). Spousal homicides. In K. AuCoin (ed.), *Family Violence in Canada: A Statistical Profile 2005* (pp. 48-51). Ottawa, CA: Minister of Industry.

Beyer, K., Baber Wallis, A., & Hamberger, L.K. (2015). Neighborhood environment and intimate partner violence: A systematic review. *Trauma, Violence, & Abuse, 16*(1) 16-47. DOI: 10.1177/1524838013515758

Beyer, K.M.M., Layde, P.M., Hamberger, L.K., & Laud, P.W. (2013). Characteristics of the residential neighborhood environment differentiate intimate partner femicide in urban versus rural settings. *The Journal of Rural Health, 29*: 281-293. doi: 10.1111/j.1748-0361.2012.00448.x

Bosch, K. & Schumm, W.R. (2004). Accessibility to resources: Helping rural women in abusive partner relationships become free from abuse. *Journal of Sex & Marital Therapy, 30*: 357-370. DOI*:* 10.1080/00926230490465118.

Bradford, B. & Bruce, M. (2004). *HerStory of Woman Abuse and PEI Justice System*. Muriel McQueen Fergusson Centre for Family Violence Research. Accessed March 2015 from http://fvps.ca/womanabuseresearch/peifinal.pdf

Brennan, S. (2011a). Self-reported spousal violence, 2009. In *Family Violence in Canada: A Statistical Profile* (pp. 8-19). Ottawa, ON: Minister of Industry. Retrieved from http://www.statcan.gc.ca/pub/85-224-x/85-224-x2010000-eng.pdf.

Brennan, S. (2011b). Violence victimization of Aboriginal women in the Canadian provinces, 2009. *Juristat*. Catalogue no. 85-002-X. Ottawa: Statistics Canada. Retrieved from http://www.statcan.gc.ca/pub/85-002-x/2011001/article/11439-eng.pdf.

Brewster, M.P. (2001). Legal help-seeking experiences of former intimate-stalking victims. *Criminal Justice Policy Review, 12*: 91-112.

British Columbia Coroners Service. (2010). *Findings and Recommendations of the Domestic Violence Death Review Panel.* Report to the Chief Coroner of British Columbia.

British Columbia Coroners Service. (2016). *BC Coroners Service Death Review Panel: A Review of Intimate Partner Violence Deaths, 2010-2015*. Report to the Chief Coroner of British Columbia.

Browning, C.R. (2002). The span of collective efficacy: Extending social disorganization theory to partner violence. *Journal of Marriage and Family, 64*(4): 833-850.

Brownridge, D.E. (2003). Male partner violence against Aboriginal women in Canada: an empirical analysis. *Journal of Interpersonal Violence, 18*(1): 65-83. DOI: 10.1177/0886260502238541

Brownridge, D.E. (2008). Understanding the elevated risk of partner violence against Aboriginal women: a comparison of two nationally representative surveys of Canada. *Journal of Family Violence, 23*: 353-367. DOI 10.1007/s10896-008-9160-0

Burczycka, M. (2016). Section 1: Trends in self-reported spousal violence in Canada, 2014. *Family Violence in Canada: A Statistical Profile, 2014* (pp. 3-20). Canadian Centre for Justice Statistics. Catalogue no. 85-002-X. Retrieved from http://www.statcan.gc.ca/pub/85-002-x/2016001/article/14303/01-eng.htm.

Burczycka, M. (2017). Police-reported intimate partner violence. In M. Burczycka and S. Conroy, *Family Violence in Canada: A Statistical Profile, 2015* (pp. 47-55). Canadian Centre for Justice Statistics. Retrieved from http://www.statcan.gc.ca/pub/85-002-x/2017001/article/14698-eng.pdf.

Buzawa, E.S., Hotaling, G.T., Klein, A., & Byrne, J. (2000). *Response to Domestic Violence in a Pro-Active Court Setting: Executive Summary*. Report submitted to the U.S. Department of Justice. Accessed March 2015 from https://www.ncjrs.gov/pdffiles1/nij/grants/181427.pdf.

Caetano, R., Ramisetty-Mikler, S., & Harris, T.R. (2010). Neighborhood characteristics as predictors of male to female and female to male partner violence. *Journal of Interpersonal Violence, 25*(11): 1986-2009. DOI: 10.1177/0886260509354497

Campbell, M. (2010). *Threat Assessment and Risk Management in Domestic Violence Cases: An Overview of Ontario Justice and Community Collaboration for 2010 and Future Directions*. Centre for Research & Education on Violence against Women and Children.

Campbell, J.C., Glass, N., Sharps, P., Laughon, K., & Bloom (2007). Intimate partner homicide: Review and implications of research and policy. *Trauma, Violence & Abuse, 8*(3): 246-269.

Chambers, S.D. (1998). *An Analysis of Trends Concerning Violence Against Women: A Preliminary Case Study of Vancouver.* Vancouver: Feminist Research, Education, Development and Action Centre (FREDA). Retrieved from http://fredacentre.com/wp-content/uploads/2010/09/Chambers-1998.pdf.

Cunningham, A., Jaffe, P.G., Baker, L., Dick, T., Malla, S., Mazaheri, N., & Poisson, S. (1998). *Theory-Derived Explanations of Male Violence Against Female Partners: Literature Update and Related Implications for Treatment and Evaluation*. Report prepared for the London Family Court Clinic, London, ON. Retrieved from http://www.lfcc.on.ca/maleviolence.pdf

Cunradi, C.B., Caetano, R., Clark, C., & Schafer, J. (2000). Neighborhood poverty as a predictor of intimate partner violence among White, Black, and Hispanic couples in the United States: a multilevel analysis. *Ann. Epidemiol., 10*(5): 297-308.

Dauvergne, M. (2005). Homicide in Canada, 2004. *Juristat, 25*(6). Catalogue no. 85-002-XPE. Ottawa: Statistics Canada.

Dawson, M. & Hotton, T. (2014). Police charging practices for incidents of intimate partner violence in Canada. *Journal of Research in Crime and Delinquency, 51*(5): 655-683. DOI: 10.1177/0022427814523787

DeKeseredy, W.S., Schwartz, M.D., Alvi, S., & Tomaszewski, E.A. (2003). Perceived collective efficacy and women's victimization in public housing. *Criminal Justice, 3*(1): 5-27.

Desmarais, S.L., Reeves, K.A., Nicholls, T.L., Telford, R.P., & Fiebert, M.S. (2012a). Prevalence of physical violence in intimate relationships, Part 1: Rates of male and female victimization. *Partner Abuse, 3*(2): 140-169.

Desmarais, S.L., Reeves, K.A., Nicholls, T.L., Telford, R.P., & Fiebert, M.S. (2012b). Prevalence of physical violence in intimate relationships, Part 2: Rates of male and female perpetration. *Partner Abuse, 3*(2): 170-198.

Dosanjh, R., Deo, S., & Sidhu, S. (1994). *Spousal Abuse in the South Asian Community.* Vancouver, India Mahila Association. Accessed March 2015 from http://fredacentre.com/wp-content/uploads/2010/09/Dosanjh-et-al-1994.pdf.

Durst, D., MacDonald, J., & Parsons, D. (1999). Finding our way: A community needs assessment on violence in Native families in Canada. *Journal of Community Practice, 6*(1): 45-59. DOI: 10.1300/J125v06n01_04

Dutton, D. (2006). *Rethinking Domestic Violence*. Vancouver, BC: UBC Press.

Eckhardt, C., Holtzworth-Munroe, A., Norlander, B., Sibley, A., & Cahill, M. (2008). Readiness to change, partner violence subtypes, and treatment outcomes among men in treatment for partner assault. *Violence and Victims, 23:* 446-475.

Epstein, D. (1999). Effective intervention in domestic violence cases: Rethinking the roles of prosecutors, judges, and the court system. *Yale Journal of Law and Feminism, 11*: 3-50.

Fiebert, M. (1997). Annotated bibliography: References examining assaults by women on their spouses/partners. *Sexuality and Culture*, *1*, 273-286.

Fleury, R.E., Sullivan, C.M., Bybee, D.I., & Davidson, W.S. (1998). Why don't they just call the cops? Reasons for differential police contact among women with abusive partners. *Violence and Victims, 13*: 333-345.

Fox, J. A., & Zawitz, M. W. (2001). *Homicide trends in the United States: Intimate homicide*. Washington, DC: U.S. Department of Justice, Bureau of Justice Statistics. http://www.ojp.usdoj.gov/bjs/homicide/intimates.htm

Fugate, M., Landis, L., Riordan, K., Naureckas, S., & Engel, B. (2005). Barriers to domestic violence help seeking: Implications for intervention. *Violence Against Women, 11*: 290-310.

Gallup-Black, A. (2005). Twenty years of rural and urban trends in family and intimate partner homicide. *Homicide Studies, 9*(2): 149-173. DOI: 10.1177/1088767904274158

Gannon, M. & Mihorean, K. (2005). Sentencing outcomes: A comparison of family violence and non-family violence cases. *JustResearch* no. 12: 42-51.

Gillis, J.R., Diamond, S., Jebely, P., Orekhovsky, V., Ostovich, E., MacIsaac, K., Sagrati, S., & Mandell, D. (2006). Systematic obstacles to battered women's participation in the judicial system: When will the status quo change? *Violence Against Women, 12*: 1150-1168.

Goulet, S., Lorenzetti, L., Walsh, C.A., Wells, L., & Claussen, C. (2016). Understanding the environment: Domestic violence and prevention in urban Aboriginal communities. *First Peoples Child & Family Review, 11*(1): 9-23.

Grama, J.L. (2000). Women forgotten: Difficulties faced by rural victims of domestic violence. *American Journal of Family Law, 14*: 173-189.

Heidt, J. & Wheeldon, J.P. (2015). *Introducing criminological thinking. Maps, Theories, and Understanding*. Thousand Oaks, CA: Sage Publications, Inc.

Heise, L.L. (1998). Violence against women: an integrated, ecological framework. *Violence Against Women, 4*(3): 262-290.

Jaffe, P. & Burris, C.A. (1984). *An Integrated Response to Wife Assault: A Community Model*. Ottawa: Ministry of the Solicitor General of Canada. Retrieved from http://www.publicsafety.gc.ca/lbrr/archives/hv%20700.c2%20j3%201984-eng.pdf.

Jaffe, P., Wolfe, D.A., Telford, A., & Austin, G. (1986). The impact of police charges in incidents of wife abuse. *Journal of Family Violence, 1*: 37-49.

James, S.E., Johnson, J., & Raghavan, C. (2004). "I couldn't go anywhere". Contextualizing violence and drug abuse: a social network study. *Violence Against Women, 10*(9): 991-1014. DOI: 10.1177/1077801204267377

Jiwani, Y. & Buhagiar, L. (1997). *Policing Violence Against Women in Relationships: An Examination of Police Response to Violence Against Women in British Columbia*, *Executive Summary*. FREDA Centre for Research on Violence Against Women and Children. Retrieved from http://fredacentre.com/wp-content/uploads/2010/09/Jiwan-and-Buhagiar-1997.pdf.

Johnson, I.M. (2007). Victims' perceptions of police response to domestic violence incidents. *Journal of Criminal Justice, 35*: 498-510.

Johnson, H. (2006). *Measuring violence against women: Statistical trends*. Statistics Canada, Catalogue No.85-570-XWE. Ottawa, ON: Statistics Canada.

Justice Institute of British Columbia. (2007). *Empowerment of Immigrant and Refugee Women who are Victims of Violence in their Intimate Relationships: Final Report*. Justice Institute of British Columbia: Child, Family, and Community Safety Division.

Katerndahl, D., Burge, S., Ferrer, R., Becho, J., & Wood, R. (2013). Differences in social network structure and support among women in violent relationships. *Journal of Interpersonal Violence, 28*(9): 1948-1964. DOI: 10.1177/0886260512469103

Kaufman Kantor, G., & Straus, M. (1987). The "drunken bum" theory of wife beating. *Social Problems*, *34*, 213-230.

Kelly, J.B. & Johnson, M.P. (2008). Differentiation among types of intimate partner violence: Research update and implications for interventions. *Family Court Review, 46*(3): 476-499.

Kowalski, M. (2006). Spousal homicides. In L. Ogrodnik (ed.), *Family Violence in Canada: A Statistical Profile 2006* (pp. 52-57). Catalogue no. 85-224-XIE. Ottawa: Statistics Canada.

Lanier, C. & Maume, M.O. (2009). Intimate partner violence and social isolation across the rural/urban divide. *Violence Against Women, 15*(11): 1311-1330. DOI: 10.1177/1077801209346711

Laroche, D. (2005). Aspects of the context and consequences of domestic violence—Situational couple violence and intimate terrorism in Canada in 1999. Quebec City: Government of Quebec. http://www.stat.gouv.qc.ca/statistiques/sante/environnement-social/violence-couples/aspect-violence_an.pdf

Lauritsen, J. L., & Schaum, R. J. (2004). The social ecology of violence against women. *Criminology, 42*(2), 323–357.

Lawson, J. (2012). Sociological theories of intimate partner violence. *Journal of Human Behavior in the Social Environment, 22*: 572-590. DOI: 10.1080/10911359.2011.598748

Lee, Y-S. & Hadeed, L. (2009). Intimate partner violence among Asian immigrant communities: health/mental health consequences, help-seeking beahviors, and service utilization. *Trauma, Violence & Abuse, 10*(2)*:* 143-170. DOI: 10.1177/1524838009334130

Logan, T.K., Walker, R., Cole, J., Ratliff, S., & Leukefeld, C. (2003). Qualitative differences among rural and urban intimate violence victimization experiences and consequences: A pilot study. *Journal of Family Violence, 18*(2): 83-92.

Lyon, E. (2002). *Special Session Domestic Violence Courts: Enhanced Advocacy and Interventions*. Final Report prepared for National Institute of Justice, U.S. Department of Justice. Retrieved from https://www.ncjrs.gov/pdffiles1/nij/grants/197860.pdf.

Lysova, A. (2017). *Perceptions of justice among male victims of female perpetrated partner violence in four Western countries*. Presented at the 2017 annual meeting of the Western Society of Criminology, Las Vegas, Nevada.

MacLeod, L. & Shin, M.Y. (1993). *"Like a Wingless Bird": A tribute to the Survival and Courage of Women who are Abused and who Speak neither English nor French*. Retrieved from http://publications.gc.ca/collections/Collection/H72-21-110-1994E.pdf.

Martin, D.L. & Mosher, J.E. (1995). Unkept promises: Experiences of immigrant women with the neo-criminalization of wife abuse. *The Canadian Journal of Women and the Law, 8*: 3-43.

McCormick, A.V., Cohen, I.M., & Corrado, R.R. (2015). *Enhancing Surrey RCMP Detachment's Domestic Violence Unit*. Centre for Public Safety and Criminal Justice Research, University of the Fraser Valley.

McCormick, A.V., Cohen, I.M., & Plecas, D. (2011). *Reducing Recidivism in Domestic Violence Cases*. Centre for Public Safety and Criminal Justice Research.

McCormick, A.V., Haarhoff, T., Cohen, I.M., Plecas, D., & Burk, K. (2012). *Challenges Associated with Interpreting and Using Police Clearance Rates*. Centre for Public Safety and Criminal Justice Research, University of the Fraser Valley, Abbotsford, B.C.

McDonald, S. & Cross, P. (2001). Women's voices being heard: Responsive lawyering. *Journal of Law and Social Policy, 16*: 207-239.

McGillivray, A. & Comaskey, B. (1999). *Black Eyes All of the Time: Intimate Violence, Aboriginal Women, and the Justice System*. Toronto: University of Toronto Press.

Mears, D. P., Carlson, M. J., Holden, G. W., & Harris, S. D. (2001). Reducing domestic violence revictimization: The effects of individual and contextual factors and type of legal intervention. *Journal of Interpersonal Violence, 16,* 1260-1283.

Miedema, B. & Wachholz, S. (1998). *A Complex Web: Access to Justice for Abused Immigrant Women in New Brunswick*. Ottawa: Status of Women Canada.

Mihorean, K. (2005). Trends in self-reported spousal violence. In K. AuCoin (ed.), *Family Violence in Canada: A Statistical Profile, 2005* (pp. 13-32). Catalogue no. 85-224-XIE. Ottawa: Statistics Canada.

Mihorean, K. (2006). Factors related to reporting spousal violence to police. In L. Ogrodnik (ed.), *Family Violence in Canada: A Statistical Profile 2006* (pp. 19-28). Catalogue no. 85-224-XIE. Ottawa: Statistics Canada.

Miles-Doan, R. (1998). Violence between spouses and intimates: does neighbourhood context matter? *Social Forces, 77*(2): 623-645.

Miles-Doan, R. & Kelly, S. (1997). Geographic concentration of violence between intimate partners. *Public Health reports, 112*: 135-141.

Murray, C., Bunch, R., & Hunt, E.D. (2016). Strengthening community-level understanding of and responses to intimate partner violence using geographic information systems (GIS). *Journal of Aggression, Conflict and Peace Research*, *8*(3): 197-211. doi: 10.1108/JACPR-01-2016-0209

Native Women's Association of Canada. (1994). *Aboriginal Women: Police Charging Policies and Domestic Violence*. Retrieved from www.nwac-hq.org/reports/Police%20Charging%20Policies%20&%20Domestic%20Violence.pdf.

Nixon, K. (2002). Leave him or lose them: The child protection response to woman abuse. In L.M. Tutty & C. Goard (eds.), *Reclaiming Self: Issues and Resources for Women Abused by Intimate Partners* (pp. 64-80). Halifax, NS: Fernwood.

Obasaju, M.A., Palin, F.L., Jacobs, C., Anderson, P., & Kaslow, N.J. (2009). Won't you be my neighbor? Using an ecological approach to examine the impact of community on revictimization. *Journal of Interpersonal Violence, 24*(1): 38-53. DOI 10.1177/0886260508314933.

O'Campo, P., Gielen, A.C., Faden, R.R., Xue, X., Kass, N., & Wang, M-C. (1995). Violence by male partners against women during the childbearing year: a contextual analysis. *American Journal of Public Health, 85*(8): 1092-1097.

Ogrodnik, L. (2006). Spousal violence and repeat police contact. In L. Ogrodnik (ed.), *Family Violence in Canada: A Statistical Profile 2006* (pp. 11-18). Catalogue no. 85-224-XIE. Ottawa: Statistics Canada.

Ontario Domestic Violence Death Review Committee. (2008). *Annual Report to the Chief Coroner*. Toronto, ON: Office of the Chief Coroner.

Patterson, J. (2003). Spousal violence. In H. Johnson & K. AuCoin (eds.), *Family Violence in Canada: A Statistical Profile* (pp. 4-7). Catalogue no. 85-224-XIE. Ottawa: Statistics Canada.

Provincial Office of Domestic Violence. (2014). *British Columbia's Provincial Domestic Violence Plan*. Victoria, BC: BC Ministry of Children and Family Development.

Roberts, A.R. (1996). *Spousal Assault and Mandatory Charging in the Yukon: Experiences, Perspectives and Alternatives*. Ottawa: Department of Justice Canada, Research and Statistics Division. Retrieved from http://www.collectionscanada.gc.ca/webarchives/20071122063851/http://www.odpp.gc.ca/en/ps/rs/rep/1996/wd96-3a.html.

Royal Commission on Aboriginal Peoples. (1996). *Report of the Royal Commission on Aboriginal Peoples: Gathering Strength* (Vol. 3). Ottawa, Canada Communication Group.

Sadusky, J. (2003). *Community Policing and Domestic Violence: Five Promising Practices*. The Battered Women's Justice Project, Minneapolis, MN.

Sampson, R.J., Raudenbush, S.W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science, 277*: 918-924. DOI: 10.1126/science.277.5328.918

Shaw, C.R. & McKay, H.D. (1942). *Juvenile Delinquency and Urban Areas*. Chicago, IL: University of Chicago Press.

Sinha, M. (2012). Family violence in Canada: A statistical profile 2010. Ottawa, ON: Minister of Industry. Retrieved from http://www.statcan.gc.ca/pub/85-002-x/2012001/article/11643-eng.pdf.

Sinha, M. (2013). Measuring violence against women: Statistical trends. *Juristat*. Statistics Canada Catalogue no. 85-002-X. Ottawa: Statistics Canada.

Smith, E. (2004). *Nowhere to Turn: Responding to Partner Violence against Immigrant and Visible Minority Women*. Canadian Council on Social Development.

Stets, J. E., & Straus, M. A. (1990). Gender differences in reporting marital violence and its medical and psychological consequences. In M. A. Straus & R. J. Gelles (Eds.), *Physical violence in American families* (pp. 151-165).New Brunswick, NJ: Transaction Publishing.

Straus, M. A. (1990). Measuring intrafamily conflict and violence: The Conflict Tactic (CT) Scales. In M. A. Straus & R. J. Gelles (Eds .), *Physical Violence in American Families* (pp. 29-47). New Brunswick, NJ: Transaction Books.

Taylor-Butts, A. & Porter, L. (2011). Family related homicides, 2000 to 2009. In *Family Violence in Canada: A Statistical Profile* (pp. 32-41). Ottawa, ON: Minister of Industry. Retrieved from http://www.statcan.gc.ca/pub/85-224-x/85-224-x2010000-eng.pdf.

Tjaden, P., & Thoennes, N. (1998). *Prevalence, incidence, and consequences of violence against women: Findings from the National Violence Against Women Survey*. Washington, DC: U.S. Department of Justice, National Institute of Justice and Centers for Disease Control and Prevention. http://www.ncjrs.org/pdffiles/172837.html

Tjaden, P. & Thoennes, N. (2000a). *Extent, Nature and Consequences of Intimate Partner Violence: Findings from the National Violence Against Women Survey*. Washington, DC: National Institute of Justice and the Center for Disease Control and Prevention. www.ncjrs.org/pdffiles1/nij/181867.pdf

Trainor, C. & Mihorean, K. (2001). *Family violence in Canada: A statistical profile 2001*. Ottawa: Minister of Industry.

Truth and Reconciliation Commission. (2015). *Honouring the Truth, Reconciling for the Future: Summary of the Final Report of the Truth and Reconciliation Commission of Canada*. Truth and Reconciliation Commission of Canada.

Van Wyk, J.A., Benson, M.L., Fox, G.L., & DeMaris, A. (2003). Detangling individual-, partner-, and community-level correlates of partner violence. *Crime & Delinquency, 49* (3): 412-438. DOI: 10.1177/0011128703253763

Wendt, S. & Zannettino, L. (2015). *Domestic Violence in Diverse Contexts: A Re-Examination of Gender*. New York, NY: Routledge.

Wilson, H.E. (1998). *Victim's Attitudes and Perceptions of the Pro-Arrest Policy*. Unpublished MA Dissertations. Dalhousie University, Halifax, Nova Scotia.

Wolf, M.E., Ly, U., Hobart, M.A., & Kernic, M.A. (2003). Barriers to seeking police help for intimate partner violence. *Journal of Family Violence, 18*: 2, 121-129.

Wolfgang, M. & Ferracuti, F. (1967). *The Subculture of Violence: Towards an Integrated Theory in Criminology*. London, UK: Tavistock Publications.

Zhang, T., Hoddenbagh, J., McDonald, S., & Scrim, K. (2012). *An Estimation of the Economic Impact of Spousal Violence in Canada, 2009*. Department of Justice Canada.

Appendix A Duplicate Founded IPV Files

Community	Number of Duplicate Files	Total Number of Files	Per Cent of Files
Ahousaht	2	26	8%
Alexis Creek	1	2	50%
Burnaby	3	310	1%
Burns Lake	2	30	7%
Campbell River	2	138	1%
Chetwynd	2	27	7%
Chilliwack	1	189	1%
Coquitlam	1	191	1%
Courtenay	1	129	1%
Cranbrook	1	101	1%
Duncan	3	213	1%
Fort St. John	1	126	1%
Gibsons	1	32	3%
Gitanmaax	1	6	17%
Kamloops	1	270	0%
Kimberley	1	12	8%
Maple Ridge	1	196	1%
New Denver	1	2	50%
North Vancouver	2	193	1%
Port Alberni	1	145	1%
Port Hardy	2	72	3%
Powell River	1	51	2%
Prince George	6	314	2%
Revelstoke	1	15	7%
Richmond	2	250	1%
Smithers	1	36	3%
Sooke	1	36	3%
Surrey	8	1231	1%
Takla Landing	1	8	13%
Vanderhoof	1	39	3%
View Royal	1	28	4%
Whistler	1	44	2%
White Rock	1	46	2%
Wycliffe	1	5	20%

UNIVERSITY OF THE FRASER VALLEY

CENTRE FOR PUBLIC SAFETY & CRIMINAL JUSTICE RESEARCH