URBAN SOCIAL ISSUES STUDY:

IMPACTS OF THE
LETHBRIDGE SUPERVISED CONSUMPTION SITE
ON THE LOCAL NEIGHBOURHOOD

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REPORT PREPARED FOR THE CITY OF LETHBRIDGE

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Acknowledgements

The University of Lethbridge's Blackfoot name is Iniskim, meaning Sacred Buffalo Stone. The University of Lethbridge acknowledges and deeply appreciates the Siksikaitsitapii peoples' connection to their traditional territory. We, as people living and benefiting from Blackfoot Confederacy traditional territory, honour the traditions of people who have cared for this land since time immemorial. We recognize the diverse population of Aboriginal peoples who attend the University of Lethbridge and the contributions these Aboriginal peoples have made in shaping and strengthening the University community in the past, present, and in the future.

Table of Contents

Tables

Figures

Executive Summary

Background

In late 2017, it was determined that in early 2018 ARCHES would be opening a supervised consumption service (SCS) at 1016 1 Avenue South in Lethbridge. While there was some community support for the services, some Lethbridge residents and businesses had concerns about the impact of such a facility on the surrounding neighbourhoods. Specific concerns included that there would be: increased illicit drug trade activity in the area; increased localization of drug activity to a single district (around the SCS); increased public disorder and discarding of drug paraphernalia; and/or, a skid row district that develops in the vicinity of the SCS. These types of social disorder within a community would negatively impact the utility, enjoyment, sense of security, and social interactions amongst those who live, work or otherwise engage in the area.

Existing scholarly literature suggested that SCSs provide an alternative to public injecting, thus tend to reduce the number of people who use drugs in streets, alleys, or public washrooms. In this way, the literature suggests that SCSs appear to reduce public drug use and improve public order and that SCSs can lead to fewer publicly discarded needles. The degree to which these study findings, which are from large urban centres, are generalizable to Lethbridge's small urban context is unclear.

With this in mind, and with a priority of the Heart of Our City Committee to maintain a Clean and Safe Downtown, the committee spearheaded the commissioning of Dr. Em Pijl and the University of Lethbridge's Faculty of Health Sciences as an arm's length organization to undertake further research on the social conditions before and after the opening of the SCS to help assess the potential impact/change related to the SCS.

Method

The Urban Social Issues Study (USIS) was a longitudinal study that measured and explored perceptions and observations of social disorder by business owners and operators in downtown Lethbridge over a period of 13 months, a period during which a supervised consumption service was implemented in the study area. The purpose of the study was not to determine *if* supervised consumption should be a public service in Lethbridge, but rather to explore any unintended consequences of these services.

Data was collected through five quarterly surveys over the course of the study year (January 2018-February 2019), and in May 2019 a focus group was held with business operators in the 100-metre zone around the SCS.

This study was reviewed for ethical acceptability and approved by the University of Lethbridge Human Subject Research Committee and by the Health Research Ethics Board – Health Panel at the University of Alberta.

Funding

The study was commissioned to Dr. Pijl at the University of Lethbridge for $10,000 and was funded by City Council through the research funding provided to the Joint Action Team (JAT) on November 28, 2016. The funding was used to support the cost of completing the study.

Key Findings

The data indicates that members of the business community are increasingly observing antisocial behaviours and environmental factors that detract from a previously positive experience in all downtown areas of Lethbridge. The current drug crisis is having a clear impact on those who live, work, or conduct business or social activities in the downtown areas of Lethbridge. Unfortunately, antisocial behaviours make people feel unsafe, sometimes independent of actual risk.

Some of the increase in antisocial behaviour was attributable to the changing weather (increasingly warm weather is commonly associated with increases in antisocial behaviour, in part because simply more people are spending more time outside). The 100-meter zone (Figure 2) around the SCS had the sharpest increase in antisocial behaviours and environment impacts, followed by the downtown zone. That the 100-meter zone had an increase in activity is not entirely unexpected, given that prior to the SCS, the area was comprised of various quiet businesses, and substance use (alcohol) with occasional social disorder (particularly on weekends) could be somewhat attributed to a small handful of drinking establishments in the vicinity. Unlike the 100-meter zone around the SCS, the downtown Southwest zone businesses have been impacted by the ongoing drug crisis in a more consistent manner. In other words, the opening of the SCS did not seem to have as much of an impact in the downtown Southwest zone as it did on the 100-meter zone. The 500-meter zone around the SCS had the lowest levels of social disorder, compared to the 100-meter and downtown Southwest zones.

Experiences and observations were not consistent even between adjacent businesses, which suggests that observing, perceiving, and experiencing social disorder is impacted by many other factors. Social disorder is a social construct that is perceived differently by different people, making it difficult to measure.

Many respondents and participants in the study were not opposed to harm reduction or supervised consumption services, per se. There was, in fact, a range of support for these services. However, there was significant concern about the impacts on their substantial investments into their livelihoods, which they felt were being threatened.

The Lethbridge experience has differed from the experiences reported in the existing scholarly literature, which overwhelmingly indicate that there are essentially no negative impacts from SCSs on the surrounding neighbourhood. However, these other studies and reports are based on large urban centres with much higher density and extensive histories of social disorder, and it is possible that in large urban settings an SCS might very well improve an area. The experience in Lethbridge's small urban context has been somewhat different. Additionally, Lethbridge is a regional service hub for several small rural communities and two First Nations. These rural

communities often face considerable social service resource constraints and people who use substances can be stigmatized in those communities.

Overall, antisocial behaviours cannot be unequivocally and entirely attributed to the Lethbridge SCS, due largely to the study sample size and an ongoing drug epidemic. However, it is not unreasonable to consider that drawing a diverse group of disenfranchised individuals with complex social and health needs into a single service, would result in a rise in antisocial behaviour and clashes with those businesses who have been in that relatively quiet neighbourhood (especially during the day) for between 2 and 85 years.

Conclusions

In general, people can accept harm reduction, given appropriate information, but they cannot accept a real or perceived threat to their personal, familial, material or commercial interests. This perceived threat (of negative impacts) is more acutely experienced the closer one is situated to the area in question. This tendency reflects the proximity hypothesis: those nearest a controversial development are most likely to reject it, since they bear a disproportionate burden of any negative consequences from it. Individuals further from the area, and thus largely removed from most or all negative impacts, are more likely to be supportive of it in theory. Thus, while the rest of the city benefits from localizing a social issue into a single neighbourhood, the area around the site disproportionately bears the burden of improvements seen elsewhere in the city.

Results of this study should be considered with equal parts caution and empathy. This complex social issue needs the cooperation of the entire Lethbridge community to address it and to improve the downtown area and everyone's quality of life in our city. Continuing to evaluate and address local impacts and social issues is urgently advised.

Limitations

Convenience sampling may have led to both response bias and non-response bias. Businesses did not have the opportunity to identify the type of business they represented, which could impact results based on the degree of interaction with the public through storefronts.

Strategies to mitigate emerging negative impacts were implemented at different times throughout the study, and while we know what strategies were implemented and by whom, the study data is not granular enough to measure the actual effectiveness of the strategies. However, it can be assumed that the strategies have suppressed some of the negative impacts. Study participants noted the value of the mitigation programs but also indicated there was room for improvement.

Since Lethbridge is experiencing a drug crisis, not unlike other cities in Canada, the increasing incidence and prevalence of drug use is largely inseparable statistically from the impacts of the SCS. Additionally, the quantity and type of drugs in circulation impacts the antisocial behaviours seen on the street. Increasing use of "uppers" like crystal meth, which is eclipsing the use of "downers" like opiates, leads to more erratic behavior and also require more frequent use than downers.

Next Steps

- Present study findings to CIC with context from Andrew Malcolm, Urban Revitalization Manager and study presentation from Dr. Em Pijl, University of Lethbridge researcher **–** ***January 20 or February 3, 2020***
- Send the study findings to the Provincial SCS Review Panel – ***Same day as CIC agenda and USIS is made public***
- Continue to implement the Downtown Clean and Safe Strategy – ***Ongoing***
- Annual reporting on Downtown Clean and Safe Strategy to Council – ***November 2020, 2021, 2022***
- Commission a second USIS in late 2021 to conduct follow-up study for 2022 to re-evaluate – ***2022***

Introduction

Statement of the Problem

Downtown Lethbridge is experiencing what appears to be an increase in antisocial behaviour and social disorder. The Lethbridge supervised consumption site (SCS) has been a contentious issue in Lethbridge, with strong positions being taken on both sides of the debate. In particular, some business operators expressed concern that the SCS is negatively impacting the surrounding business district. The purpose of the present study was to shed some objective light on the extent to which antisocial behaviour and social disorder in the area has actually changed.

Social Disorder

Social disorder is a common phenomenon in cities around the world. Social disorder is characterized by physical signs of deterioration, neglect or decay, and anti-social behaviours. Social disorder within a neighbourhood has been shown to negatively influence the utility, enjoyment, sense of security, and social interactions amongst those who live, work or otherwise engage in an area (Florida, Mellander, & Stolarick, 2009; Hoehner, Brennan Ramirez, Elliott, Handy, & Brownson, 2005). While previous studies indicate that the installation of an SCS did not result in negative impacts or social disorder in the area around it (KPMG & NSW Health, 2010; E. Wood et al., 2004), it is possible that those findings are context dependent and may differ between communities.

There is some consensus among social researchers that antisocial behaviour in public is becoming increasingly problematic in urban centres (Baum, Arthurson, & Han, 2015; Burt, Klump, Kashy, Gorman-Smith, & Neiderhiser, 2015; Taylor, Twigg, & Mohan, 2010; Weaver, 2015). Antisocial behaviour is a complex phenomenon because it involves both real and perceived behaviours of often stigmatized and stereotyped people. Certainly, many factors influence the degree to which antisocial behaviour will be perceived, tolerated and addressed. When diverse groups of people with widely differing values and lifestyles are forced into close and extended contact, tensions often arise (Baum et al., 2015). Whether someone is likely to perceive high levels of antisocial behaviour is often related to factors such as education, age, marital status, and socioeconomic status (Taylor et al., 2010). There are differing conclusions in the literature about whether population heterogeneity contributes to social mistrust and elevated perceptions of antisocial behaviour, or whether deprivation and poverty (rather than diversity) are more strongly associated with perceived high levels of antisocial behaviour (Sampson & Raudenbush, 2004, 2005; Taylor et al., 2010).

Supervised Consumption Services and Social Disorder

Supervised consumption services (SCS) have a proven track record in helping preserve the health and lives of people who use drugs. However, there are only a small number of studies that explore the unintended consequences of SCSs on the surrounding community. Existing studies demonstrate that these services have few, if any, negative impacts on their host neighbourhood and that SCSs tend to reduce public drug use and public disorder and as such enhance neighbourhoods (KPMG & NSW Health, 2010; E. Wood, Tyndall, Lai, Montaner, & Kerr, 2006).

Concerns voiced by those who work or live in the vicinity of a proposed SCS include that there will be: increased illicit drug trade activity in the area; increased localization of drug activity to a single district (around the SCS); increased public disorder and discarding of drug paraphernalia; and/or, a skid row district that develops in the vicinity of the SCS (Mangham, 2011; Romanski, 2013; Watson et al., 2012; Wenger, Arreola, & Kral, 2011). Of course, not all impacts of an SCS on the surrounding neighbourhood can be foreseen (Alberta Health, 2017; Taverner & OACP Substance Abuse Committee, 2012).

Existing scholarly and gray literature suggests that SCSs provide an alternative to public injecting and thus reduce the number of people who use drugs in streets, alleys, or public washrooms (Harm Reduction Coalition, 2016; KPMG & NSW Health, 2010; Wolfson-Stofko, Bennett, Elliott, & Curtis, 2017). In this way, SCSs appear to reduce public drug use and reduce social disorder (DeBeck et al., 2012; Hedrich, Kerr, & Dubois-Arber, 2010; Jozaghi & Andresen, 2013; KPMG & NSW Health, 2010; Petrar et al., 2007; Rapid Response Service, 2014; Salmon, Thein, Kimber, Kaldor, & Maher, 2007). The literature also indicates that an SCS can lead to fewer publicly discarded needles in the vicinity of the SCS (Hedrich et al., 2010; Kinnard, Howe, Kerr, Skjodt Hass, & Marshall, 2014; KPMG & NSW Health, 2010; Salmon et al., 2007; Vecino et al., 2013; E. Wood et al., 2004). In a Vancouver survey of SCS visitors, 56% of participants reported less unsafe syringe disposal (Petrar et al., 2007). Police also refer people who use drugs to the SCS, thus reducing the incidence of unsafe discarding of needles and public drug use (DeBeck et al., 2008).

There is no scholarly evidence that SCSs increase public drug use or drug-related crime in the area around them (Freeman et al., 2005; Milloy et al., 2009; E. Wood et al., 2006). Unfortunately, when assessing whether public drug use, public disorder, or crime has changed as a result of an SCS there tend to be several confounding variables. The quantity and type of drugs in circulation or the impact of changes in police deployment around the SCS leads to changes in needle discard and emergency service call-out patterns (Romanski, 2013; Tieu, 2011). E. Wood et al. (2006) compared data for drug trafficking and assaults/robbery around the SCS and found no difference between the year prior to and the year after the implementation of an SCS, except for a decline in vehicle break-ins/theft. Similarly, an Australian study found that crime (particularly robbery and theft) decreased in the area around the SCS (Donnelly & Mahoney, 2013). Another report found no evidence that the SCS increased the incidence of robbery, property crime or drug offences (Fitzgerald, Burgess, & Snowball, 2010; Freeman et al., 2005). Loitering outside the facility increased in the area around the Sydney SCS (Freeman et al., 2005). Most notably, a study out of Vancouver, by E. Wood et al. (2004) is frequently cited when an SCS is being proposed in a given city; that study revealed no negative impacts of SCS on the immediate surrounding neighbourhood.

In contrast to the scholarly literature that demonstrates a lack of negative neighbourhood impacts related to SCSs, the news media has generally reported the personal experiences of business owners and residents who work and/or live near an SCS. For example, Sakaki (2017) describes the area around a new SCS in Nanaimo, British Columbia as descending into chaos and disrepair:

"Business owners said past efforts to beautify Wesley Street are being undone by drug users. 'This whole situation has taken us back over 20 years. We're starting all over again…' said Wes Strickland, a local business owner. 'What we're dealing with – the defecation, the urination, the people being assaulted – we're constantly having to call the RCMP. We actually have them on speed dial to come down to our restaurant.'"

People who live and work in the neighbourhood in which an SCS is to be implemented sometimes have concerns for the safety, orderliness and livability of the area and often express that they do not want their neighbourhood to be ghettoized (Hopper, 2014, 2017). Along these lines, Calgary's Sheldon Chumir SCS has received considerable negative press about the "rampant" social disorder around the SCS, a neighbourhood that is mixed residential and commercial (Bell, 2019; Hudes, 2019; Laing, 2019).

Overall, the evidence regarding the precise impact of SCSs on social disorder in communities is inconsistently measured and plagued by confounding variables including a worsening drug crisis (Lasnier, Brochu, Boyd, & Fischer, 2010) and issues with measurement. Additionally, due to the many harm reduction and mitigation efforts being implemented at any given time, any reductions in discarded drug paraphernalia cannot be attributed solely to the SCS. As well, it is not known if people who use drugs either recreationally or habitually will travel any distance to use an SCS, nor how this influx of traffic will impact the dynamics of the surrounding neighbourhood. No studies have been conducted on the more subjective aesthetic (look and feel) of a neighbourhood before and after an SCS is implemented. In the absence of objective and reliable data, emotions run high and people on various 'sides' of the issue can enter into a highly polarized debate that results in poor outcomes for everyone involved.

Overall, further research is required in order to determine the effect an SCS has on its surrounding neighbourhood (Kolla et al., 2017). There is a need for objective and trustworthy evidence to support these types of community interventions and their relative value to the local community and community at large, particularly when the local experience deviates from what has been demonstrated in the scholarly literature.

Purpose of the Study

In 2016, there were 8 apparent accidental drug poisoning deaths related to fentanyl in Lethbridge. In 2017 this number rose to 15, and in 2018 there were 25 apparent opioid deaths (Alberta Health, 2019). In response to this escalating drug crisis, an SCS was proposed and implemented as a measure to reduce the number of drug-related deaths. Community members expressed both support for supervised consumption services as well as concerns about the impact of an SCS on the surrounding neighbourhood. February 28, 2018 was the first operational day for the Lethbridge SCS at 1016 1 Avenue South, operated by ARCHES, a longstanding not-for-profit organization that provides leadership in building individual and community capacity to respond and reduce the harms associated with bloodborne infections and substance use in Southwestern Alberta.

The Urban Social Issues Study (USIS) was a longitudinal study that measured and explored perceptions and observations of social disorder by business owners and operators in downtown Lethbridge (study area is indicated in Figure 1) between January 2018 and February 2019. In the survey portion of this Study, social disorder was measured through five quarterly surveys of people who work in downtown Lethbridge, and through data provided by Emergency Medical Services (EMS), ARCHES (needle pickup), the Lethbridge Public Library, and the Diversion Outreach Team (DOT). The opening of the SCS during the USIS study period provided a unique opportunity to explore data both before and after the SCS opened and to assess any impacts of the SCS on social disorder in the area.
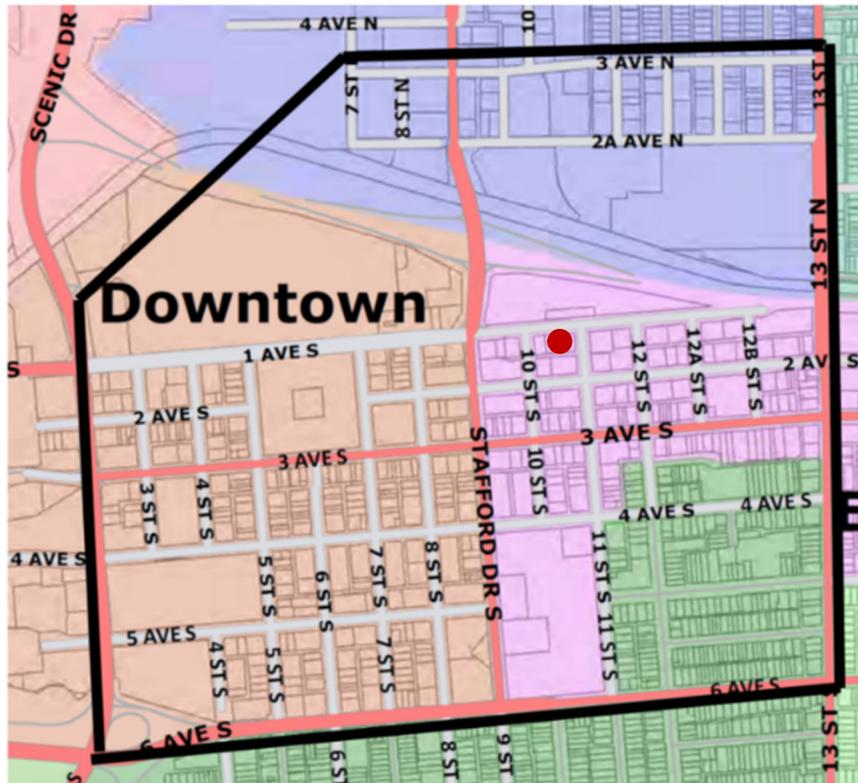
Figure 1. Study Area for the Urban Social Issues Study in Lethbridge

Cautionary Notes

It must be noted that the purpose of this study was not to determine *if* supervised consumption should be a public health service in Lethbridge, but rather, to explore any unintended consequences of these services within the surrounding community.

Additionally, not all changes in social disorder within downtown Lethbridge are or were associated with the SCS; some of the variations in the perceptions of social disorder were correlated with seasonal trends rather than the installation of the SCS. With increasing outdoor temperatures, it is expected to see a rise in social activity in outdoor and public spaces and thus an increase in antisocial behaviour.

The data and analyses presented in this report are intended to document and examine the experiences and observations of the downtown neighbourhood business community. The author hopes that this report can inform a productive, respectful, and empathic discussion about social disorder within the Lethbridge community.

Overall, the findings presented in this report must be interpreted with caution and with the understanding that Lethbridge is experiencing a drug crisis which impacts many neighbourhoods in many different ways.

Research Questions

Five research questions guided the USIS study:
1. How do business owners and operators perceive the (non-customer) people and the environment around their business and does this change over a one-year period?
2. What is the relationship between objective measurements of social disorder and the perceptions of business owners and operators in the study area?
3. What is the crime pattern (frequency, type, severity) in the study area and how does it change with the implementation of a supervised consumption service?
4. Is there a correlation between perceived danger in the study are and crime statistics?
5. How do business owners/operators in the study area feel about a supervised consumption service in the area?

Ethics

This research study was reviewed for ethical acceptability and approved by the University of Lethbridge Human Subject Research Committee and by the Health Research Ethics Board - Health Panel at the University of Alberta.

Acronyms

ARCHES	AIDS Outreach Community Harm Reduction Education Support (ARCHES) Society (formerly Lethbridge HIV Connection)
DOT	Diversion Outreach Team
DT	In this study, refers to the "downtown Southwest" zone of the study (Figure 2)
EMS	Emergency Medical Services
HIV	Human Immunodeficiency Virus
HCV	Hepatitis C Virus
PI	Principal Investigator
RA	Research Assistant(s)
SCS	Supervised Consumption Services

Method

This study was conducted by principal investigator Dr. Em Pijl, an assistant professor at the University of Lethbridge. Dr. Matthew Quick, from Arizone State University, was added to assist with the geospatial data analysis.

Questionnaire

The Urban Social Issues Survey (USIS) questionnaire was developed by Dr. Pijl through an extensive review of the literature on social disorder and antisocial behaviour. The purpose of the literature review was to identify instruments currently being used to measure social disorder. No suitable instruments were identified in this process for the present study, primarily due to instruments being quite dated or a poor conceptual fit. The extant literature on social disorder and urban antisocial behaviour therefore informed the development of the Urban Social Issues Survey, a 33-item questionnaire. The first 25 questions ask respondents to indicate the timeframe during which they last observed or experienced various types of antisocial behaviour and indicators of social disorder (e.g., drug use, public urination, sex trade, assault, theft, trespassing, vandalism, litter, discarded needles). An additional 8 questions asked respondents to indicate their perceptions of safety and crime in the area.

The questions that comprise the Urban Social Issues Survey are located in Appendix A. The baseline survey was paper-based and provided directly to participants by research assistants going door-to-door. The follow-up surveys were completed online through Qualtrics Research Suite®.

Baseline Deployment of Surveys

The City of Lethbridge provided a list of the business addresses in the study area (see Figure 1) and created area maps for the research assistants. The study area was divided into nine zones, including a 100m and 500m zone around the SCS (to approximate similar studies), and demarcated by geographic boundaries and the built environment (river valley, roads or highways, railways, malls, etc.).

Baseline data collection occurred face-to-face with trained research assistants between January 3 and February 10, 2018. The SCS opened on February 28, 2018. Four quarterly follow-up surveys were administered via unique email link to respondents who opted in during baseline data collection; these links were sent by email from within Qualtrics Research Suite®. Thus, there were a total of five survey periods, with a survey being completed during these months: January/February, 2018; April, 2018; August, 2018; November, 2018; and, February, 2019.

Sampling and Recruitment

Potential survey respondents were business owners and operators in the downtown area bounded by 6 Avenue S., 13 Street S., 3 Avenue N., and Scenic Drive S.. A City of Lethbridge Planning and Development Services GIS technologist provided address lists and area maps of the entire study area. The City had initially estimated that there were approximately 1,500 businesses in the

study area; however, the present research established this number was an overestimate, as some businesses had expanded into adjacent addresses or closed since the City's last enumeration of the study area. As well, the number provided by the City also included malls, which we were unable to access for the survey.

Respondents for the survey were recruited by trained research assistants (n=10) going door-to-door to businesses in the study area. Defined walking routes and lists of addresses ensured that no address was visited more than once. Research assistants kept track of whether respondents participated or refused, the manner of their participation (in person, paper or online), and whether they wished to participate in the follow-up quarterly surveys. Potential respondents were invited to complete an interviewer-led survey, take a paper survey to complete on their own time (and mail it to the PI's office), or complete it online (a link was provided). Additionally, respondents could submit their email address to the PI to be invited to each of the quarterly follow-up surveys which would be delivered via unique email link from within Qualtrics Research Suite®.

Respondents were eligible to participate if they were a business owner or operator in the study area. Respondents were excluded if they did not speak English and did not have a translator (n=0) or if they refused to participate either by explicitly declining to participate or by not responding to our survey overtures. All respondents in the study were competent to give informed consent.

Research assistants were trained to keep the study focused on urban social issues in the area around each business. On the occasion that a participant would ask if the survey was related to the pending arrival of the supervised consumption site, the research assistant would respond "This survey is about social issues around your business. We will be watching several developments, including the site; however, this study is not only about that." This was done to help prevent bias that may arise if respondents believed the study to be exclusively about the SCS.

Additional Data Sources

Additional sources of data were collected that may represent proxy indicators of social disorder. Ethical, operational and administrative approvals for these data sources were obtained. These sources were:
1. The Diversion Outreach Team (DOT), a branch of CMHA, and their callout statistics from the study area;
2. ARCHES needle pick-up data within the study area;
3. Emergency medical services (EMS) callout statistics from the study area; and
4. Lethbridge Public Library, which has been experiencing the drug crisis firsthand.

The PI also requested Lethbridge Police Service (LPS) crime and callout statistics from the study area. However, after three formal requests for data, LPS failed to provide usable data for the study.

Focus Groups

Due to some emerging inconsistencies in the data, primarily that adjacent neighbours sometimes had contrasting experiences and observations, additional data collection was conducted through focus groups with business owners/operators in the 100m zone around the SCS. The research questions were based on preliminary results from the survey component. The qualitative research questions for the focus groups were:

1. Within the study area, what differentiates the individuals who accept the presence of the SCS versus those who do not accept the presence of the SCS, particularly in situations where proximity to the site (and any impacts) is similar?
2. How do participants attempt to interpret the emerging findings?
3. Why does the message in the scholarly literature (that there are no negative impacts from SCSs) diverge from people's experiences in the Lethbridge context? What factors contribute to these different experiences?

A letter of invitation was hand-delivered by the PI to the businesses within the 100m zone around the SCS. Potential participants notified the PI about their availability for a focus group meeting and a date and time were set. All participants in the study were competent to give informed consent. Focus groups were audio-recorded and transcribed professionally.

Funding

The cost of doing the study was funded by the City of Lethbridge's Planning and Development Services office.

Mitigation Strategies

Throughout the study period, several mitigation programs and strategies were implemented by various entities to address environmental and social concerns in the area around the SCS and in the downtown in general. While we know which strategies were implemented when and by whom, the study data was not granular enough to establish the precise impact of these strategies on changes to antisocial behaviour, social disorder, or environmental disorder. It can, however, be assumed that these mitigation strategies suppressed some of the negative impacts. These mitigation strategies are listed in Table 1.

Table 1. Strategies Implemented to Mitigate Actual, Potential, and Perceived Impacts

Strategy	Description	Start Date	Funded By	Operator	Comments
Needle Pickup Program	Needle pickup	2017	City and ARCHES	ARCHES	Also increased the number of staff that respond to calls. City funded in 2018, funded by ARCHES (through Province) in 2019.

Strategy	Description	Start Date	Funded By	Operator	Comments
'Good Neighbour' meetings at ARCHES	Neighbours meet with ARCHES management	February 2018 (Monthly)	ARCHES	ARCHES	
Peer Program	Debris pick up	March 2018	ARCHES	ARCHES	
Clean Sweep Program	Individuals experiencing homelessness given work experience in cleaning up garbage, sweeping sidewalks, shoveling snow, needle cleanup and other cleaning tasks etc.	Expanded in May 2018	City and Province	Downtown Business Revitalization Zone (BRZ)	Provincial funding through OSSI (City distributed). Not guaranteed for 2020, if not funded the City will pick up the difference.
Diversion Outreach Team (DOT)	Outreach and transportation supports for persons vulnerable to homelessness or other street behaviors and who may be exhibiting symptoms of public intoxication or drug use.	2015	City and Province	Canadian Mental Health Association (CMHA)	Provincial funding through OSSI (City distributed).
SAGE Clan Patrol	Helping vulnerable Indigenous people	Late 2018	City	Sikohkotoki Friendship Society	One time funding provided in 2019 through Housing and Homelessness Program. Future funding dependent on ability to get society status.
Municipal Main Street Program	City will help improve business façade and crime prevention	2010/2019	City	City	The main street program for façade improvements has been in place since 2010. In 2019, the eligibility expanded to included crime prevention improvements.
Downtown Safety Education Program	Education sessions on how to deal with antisocial behaviours downtown	April 2019	City	City	

Strategy	Description	Start Date	Funded By	Operator	Comments
Security Guard Program	Security guards (n=2) 7 days per week in 100m and 500m zones	May 2019 (different starts for different facilities)	City and ARCHES	Paladin or Commission-aires (different contracts for facilities)	ARCHES holds and funds the contract around the SCS. The City funds private security at Library, City Hall, Park n Ride, Casa, SAAG, and Galt Gardens.
COAP Team (Community Outreach Addictions Program)	Provides outreach services around ARCHES to liaise between people affected by homelessness, people accessing program and services, and staff and business owners. Encampment clean up services.		ARCHES	ARCHES	
Lethbridge Police Service	Downtown unit expanded	October 2018	City through Police Commission	Lethbridge Police Service	
Ambassador Program	Volunteers help out downtown in July/August and for 2 weeks at Christmas	2010 and expanded in 2019	City	Downtown Business Revitalization Zone (BRZ)	
Encampment Cleanup Program	Outreach is provided, safe deconstruction and disposal of the structures, any belongings or items found are properly reported to Police and the site is cleaned up of any needle debris or biohazardous materials.	April 2019	City	ARCHES	
Biohazard Cleanup Program	Provide appropriate and safe cleanup of biohazardous materials in the community including defecation, vomit and blood.	April 2019	City	CMHA and contractor	

Findings

Respondents

A total of 665 valid commercial addresses (not including Park Place Mall and Centre Village Mall, which could not be accessed due to mall management's policies) were available across 9 delineated zones, including a 100m zone buffer and 101-500m zone around the SCS site (see Figure 2). Of these addresses, some were not open at the time of surveying. An attempt was made to survey all 665 valid addresses.

Overall, there were 213 interviewer-led surveys completed in real time with research assistants who went door-to -door, representing a 32.03% response rate. An additional 304 surveys were left behind because a business was closed or the staff were too busy to complete the interviewer-led survey; of these surveys, 58 were completed and mailed in to the research team in postage-paid envelopes, representing an 8.72% % response rate for mail-in surveys. Seven (7) respondents (1.05%) accessed the survey using the QR code provided in the letter of invitation, 27 respondents (8.85%) completed the survey online by following a link, and 16 individuals (2.4%) refused to participate. In the end, a total of 305 respondents participated in the baseline survey.

During the door to door survey deployment, a total of 182 email addresses were collected for follow-up emails. An additional 4 follow-up surveys were offered to respondents, via the email addresses provided by respondents who opted in; survey links were emailed in April 2018, August 2018, November 2018 and February 2019. The number of responses for surveys number 2, 3, 4 and 5 were: 127, 97, 99 and 90, respectively (see Table 2).

Table 2. Number of Surveys by Study Period

Survey	Date	N	Recruitment
1 (baseline)	January/February 2018	305	Baseline survey, recruited face-to-face
2	April 2018	127	Follow-up survey to respondents who opted in
3	August 2018	97	Follow-up survey to respondents who opted in
4	November 2018	99	Follow-up survey to respondents who opted in
5	February 2019	90	Follow-up survey to respondents who opted in

Some survey zones were sparsely, and others densely, populated with businesses. Attrition rates differed across the zones of the study (see original zone demarcations in Appendix D). Due to very low numbers of responses in four zones (Northwest 1, Special Area, Northwest 2, and Southeast), these zones were dropped from analysis. A fifth zone (Northeast) had a high uptake of surveys at baseline but a sharp drop off after that; as a result this zone was also omitted from analysis. The remaining study zones included: the 100m zone around the SCS; the 101-500m zone around the SCS (herein referred to as the 500m zone), and the downtown Southwest (see Figure 2). It should be noted that these 'as the crow flies' distances from the SCS were of necessity modified and shaped by the built environment.
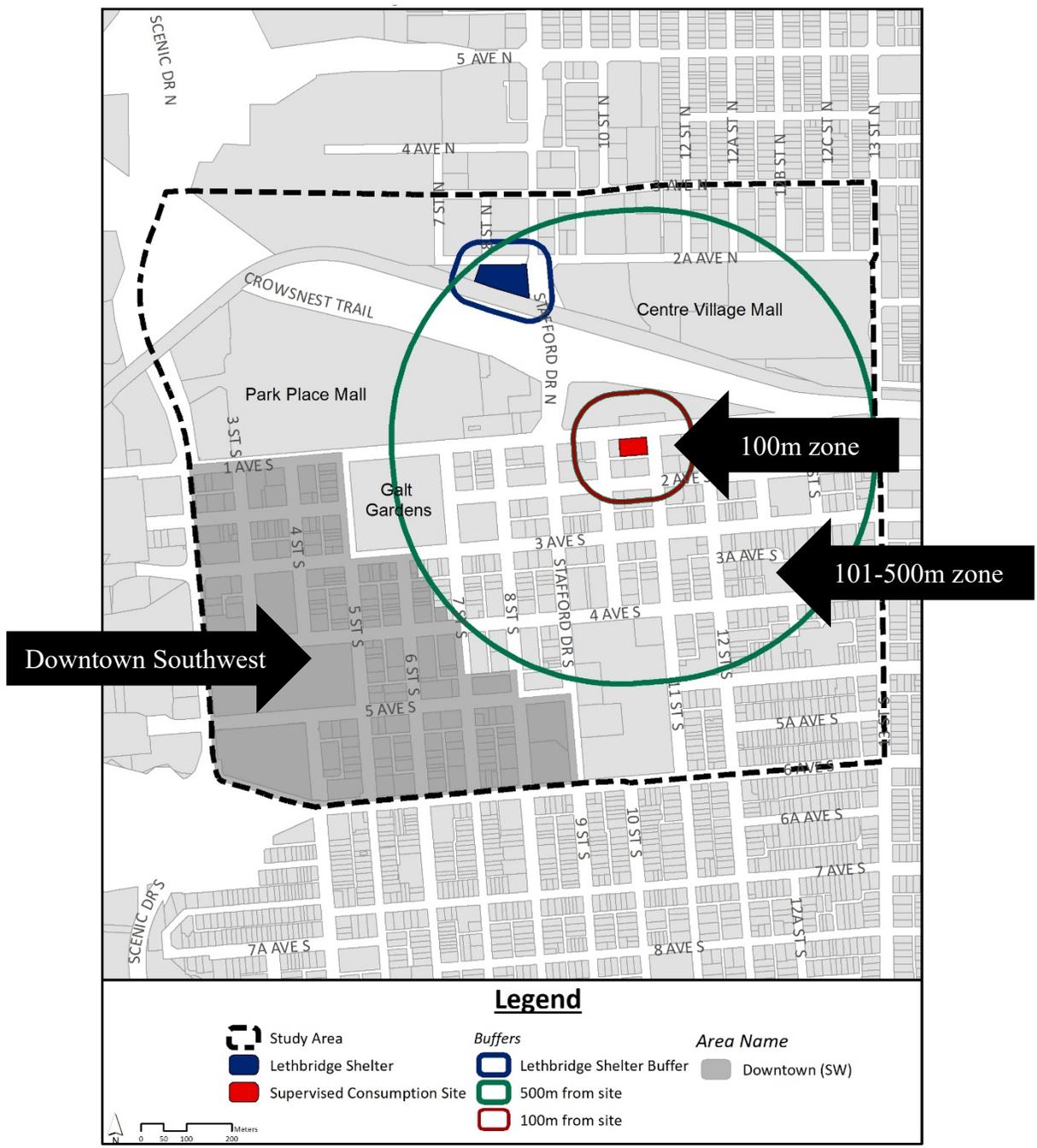
Figure 2. Study Area with Zones

Data was cleaned and transposed longitudinally by creating unique identifying variables by address. All locations were verified by GPS coordinate data, local digital map data (X and Y coordinates), and postal code. If an address was not available, the postal code was searched and matched to the location coordinates. Additionally, the survey software assigned each address to a corresponding study zone (i.e. to 100m, 500m, and downtown Southwest zones). (Respondents were not aware that they were being assigned to a zone and were only shown an unmarked google

map [Figure 1] on which to indicate their business's location. This was done to avoid biasing the results.)

A further 50 cases were removed because they only represented baseline observations without any follow-up observations being recorded via subsequent surveys. An additional 7 cases were removed from survey 2 because they lacked a baseline matched survey, due to a situation in which mall management forwarded a link to businesses within the mall. Thus, the resultant dataset began with 130 respondents for the first survey and ended with 71 for the fifth survey (see Table 3). Cases were retained if they had a baseline survey (Survey 1) and at least one follow-up survey.

There was no discernable trend in survey attrition over time, nor to non-responses or refusals. Attrition and non-responses appeared to be random.

Table 3. Number of Surveys by Region in Final Dataset

	Survey #				
Zone	1 (Baseline)	2	3	4	5
100 Meters	12	7	6	6	9
500 Meters	67	46	41	44	37
Downtown SW	51	37	34	32	25
Total	130	90	81	82	71

Demographics

Of the remaining sample at baseline, almost two-thirds were female (61.5%) (see Table 4). Respondents were aged 19-29 years old (8.5%), 30-39 years old (23.1%), 40-49 years old (27.7%), 50-59 years old (25.4%), 60-69 years old (10.8%) and 70+ years old (1.5%). Four respondents did not wish to answer the question and one value was missing (see Table 5 and Figure 3). Because follow-up surveys were delivered to the email provided by the baseline respondent, it is assumed that in general, the follow-up surveys (survey numbers 2, 3, 4 and 5) were completed by the same person.

Table 4. Gender of Survey Respondents*

Gender	n	%
Male	46	35.4
Female	80	61.5
Other	1	.8
Prefer not to say	3	2.3
Total	130	100.0
Missing	1	
Total	131	

*at baseline

Table 5. Age Groups of Respondents

Age Group		n	%
19-29		11	8.5
30-39		30	23.1
40-49		36	27.7
50-59		33	25.4
60-69		14	10.8
Over 70		2	1.5
	Prefer not to say	4	3.1
	Total	130	100.0
	Missing	1	
	Total	131	
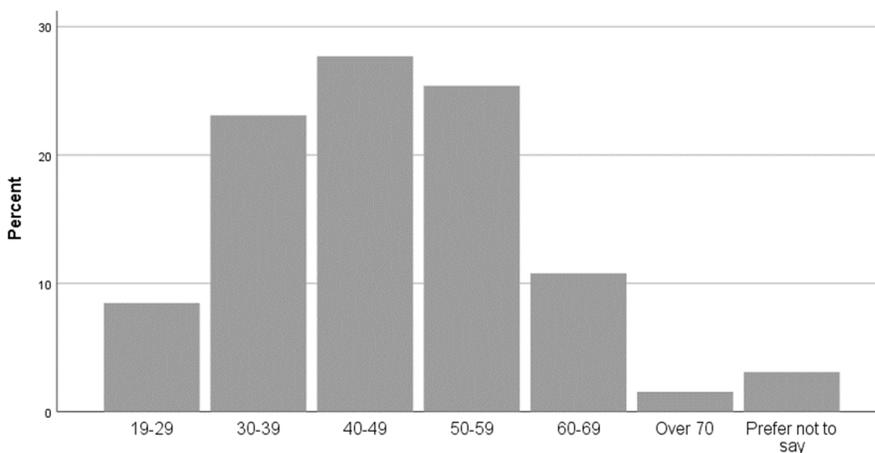
Figure 3. Respondents Age (by Category)

More than a third of respondents had started their business within the last 5 years (42.3%), with an additional quarter of respondents reporting a tenure of 6-15 years (see Table 6).

Table 6. Number of Years in Business at this Location

Number of Years		n	%
0-5		55	42.3
6-10		21	16.2
11-15		16	12.3
16-20		13	10.0
21-25		12	9.2
26-30		6	4.6
> 31		7	5.4
	Total	130	100.0
	Missing	1	
	Total	131	

Most of the survey respondents had multiple roles in their business, including any combination of owner, manager, supervisor and staff. For example, 82% (n=84) of the surveyed business owners

also worked in managerial and frontline staff capacities in their business. A quarter of respondents had been to college (26.0%) or university (41.7%) (see Table 7).

Table 7. Highest Educational Attainment of Respondents

Education Level		n	%
High School		41	32.3
College		33	26.0
University		53	41.7
	Total	127	100.0
	Missing	4	
	Total	131	

Just over a third of respondents resided in a West side neighbourhood (37.7%), while a quarter resided on the South side (25.4%) and just under a quarter on the North side (21.3%) of Lethbridge. Another 14.6% of respondents lived outside of Lethbridge city limits (see Table 8).

Table 8. Area of Residence

Area of Residence		n	%
South Side		33	25.4
North Side		29	22.3
West Side		49	37.7
Outside City Limits		19	14.6
	Total	130	100.0
	Missing	1	
	Total	131	

Signs of Social Disorder Reported

Survey Items

Antisocial Behaviour

Respondents were asked a series of questions that asked them to report when they last observed or experienced something. The first set of questions pertained to antisocial behaviours: *In the area around your business, when did you, your staff or your customers see or experience the following activities?* This question was asked at five occasions, three months apart, over the year (quarterly). A five-point scale was used to enable respondents to report the most recent time they witnessed each of 15 items (see Appendix A): 0=never, 1=more than 3 months ago[1], 2=within the last 3 months, 3=within the last month, and 4=within the last day. Frequencies revealed that some of the data was skewed—sometimes positively and sometimes negatively. Because the skew was not consistently one way or the other, data could not be transformed consistently across variables relating to antisocial behaviour. Change scores between measurements were generally normally

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[1] "More than 3 months ago" was provided as a response option, despite the survey periods being 3 months apart. This conceptual overlap was done intentionally to enable respondents to more accurately report incidents that were significant to them but that might not have been captured in a strict 3 month timeframe.

distributed, with a handful of exceptions. The means and standard deviations for these items, by study zone, are tabled in Appendix B and indicate that antisocial behaviours increased during the time frame of the study, and in some cases (not all) more so in the 100m zone than in the surrounding areas. In a general sense, many effects were in some part, but not entirely, due to the weather getting warmer. The baseline survey was administered in January and February 2018, with a mean monthly outdoor temperature averaging -5.56°C (see mean temperatures in Appendix B), and follow-up surveys 2-3 occurred in considerably warmer conditions.

Comparing survey 1 (baseline) and survey 5, which both occurred in similar temperature and precipitation conditions exactly 12 months apart, a mixed design analysis of covariance (ANOVA) was conducted to determine whether the various antisocial behaviour scores changed in a statistically significant way and whether these changes differed by study zone (100m, 500m and downtown). There were 68 cases that had both baseline (survey 1) and survey 5 data. In survey 1 (baseline) there were 5 missing values which were replaced with the series mean. In survey 5 there were 4 missing values which were replaced with the series mean. Means and standard deviations for these items, by study zone, are indicated in Appendix B. The sample size was quite small for one zone (100m), and while many of the difference scores were normally distributed, a few were not. However, there was no nonparametric alternative to analyze non-normally distributed data. As such, the findings should be interpreted with caution.

The 100m, 500m and downtown zones *all* experienced an increase in: people dealing drugs; people urinating or defecating in public; people asking for money; people engaging in the sex trade; people yelling or fighting on the street; people sleeping rough; and trespassing around the business (see Table 9). Significant differences were found between zones on several items. The 100m zone around the SCS had the highest rate of recent observations of the following behaviours: people using drugs in public, people being intoxicated or high in public, and people loitering. The 500m zone was not highest on any of these items. In many cases, the 500m zone (approximately 101-500m beyond the SCS) had lower scores than the 100m and downtown Southwest zones in terms of antisocial behaviour (see Figure 4). The downtown zone had the highest rates of recently observing people sleeping rough and people trespassing around the business. There was a general trend across all 3 study zones of increasing antisocial behaviours, which peaked at Survey 3 (August 2018) and 4 (November 2018), then declined towards Survey 5 (February 2019); however, all antisocial behaviours sustained some of that increase and did not return to baseline levels (Figure 5).

Table 9. Main Effects by Zone: People Related Factors (Survey 1 and 5)

	ANOVA	*p*	η^2	Pairwise Comparisons[‡] / Interpretation
PEOPLE-RELATED FACTORS				
People using drugs in public	$F(2, 67) = 5.079$	.041*	.091	100m zone had greatest ↑,
Drugs	$F(1, 67) = 20.491$	<.001**	.234	followed by the 500m zone; DT
Drugs*Zone	$F(2, 67) = 3.354$	.041*	.091	had a slight ↑ that was not statistically significant
People dealing drugs in public	$F(2, 67) = 2.891$	.062	.079	
Dealing	$F(1, 67) = 13.760$	<.001	.170	↑ in all 3 zones
Dealing*Zone	$F(2, 67) = 0.926$	.401	.027	

	ANOVA	p	η^2	Pairwise Comparisons[‡] / Interpretation
PEOPLE-RELATED FACTORS				
People drinking alcohol in public	$F(2, 67) = 3.100$	.052	.085	Remained same in all zones, with
Drinking	$F(1, 67) = 0.856$	.358	.013	DT zone slightly ↑ and 100m and
Drinking*Zone	$F(2, 67) = 1.181$	.313	.034	500m zones slightly ↓
People being drunk or high in public places	$F(2, 67) = 2.513$	.089	.070	Inebriation ↑ in 100m and 500m zones; slightly ↓ in DT zone
Inebriated	$F(1, 67) = 5.423$	.023*	.075	
Inebriated*Zone	$F(2, 67) = 5.094$	.009*	.132	
People urinating or defecating in public (alleys, stairwells, etc.)	$F(2, 67) = 0.396$	.674	.012	Non-statistically significant ↑ in all zones
Urinating	$F(1, 67) = 2.328$	.132	.034	
Urinating*Zone	$F(2, 67) = 0.036$	.965	.001	
People loitering or hanging around the area	$F(2, 67) = 7.509$	.001**	.183	Greatest ↑ in 100m zone, followed by 500m zone; DT zone slightly decreased
Loiter	$F(1, 67) = 4.923$	.03*	.068	
Loiter*Zone	$F(2, 67) = 2.298$	.108	.064	
People asking for money	$F(2, 67) = 7.944$	.001**	.192	↑ in all zones; DT zone had most recently reported events but 100m zone had greatest ↑
Money	$F(1, 67) = 0.760$	.386	.011	
Money*Zone	$F(2, 67) = 1.518$	.227	.043	
People stopping in your business just to use the washroom	$F(2, 67) = 3.931$	.024*	.106	100m zone and DT zone ↓ 500m zone ↑
Washroom	$F(1, 67) = 0.744$	.392	.011	
Washroom*Zone	$F(2, 67) = 1.378$	.259	.040	
People selling sex	$F(2, 67) = 2.763$	.070	.464	↑ in all zones
Sell	$F(1, 67) = 9.278$	.003**	.123	
Sell*Zone	$F(2, 67) = 2.130$	.127	.061	
People having sex in a public place	$F(2, 67) = 0.613$	.545	.019	Non-statistically significant ↑ in all zones
Sex	$F(1, 67) = 3.246$	.076	.048	
Sex*Zone	$F(2, 67) = 0.063$	.939	.002	
People yelling or fighting outside	$F(2, 67) = 11.149$	<.001**	.250	↑ in all zones; highest ↑ in 100m zone, followed by 500m zone
Fight	$F(1, 67) = 16.453$	<.001**	.197	
Fight*Zone	$F(2, 67) = 2.094$	.131	.059	
People sleeping on sidewalk, in doorways or other public places	$F(2, 67) = 5.812$	.005*	.152	↑ in all zones; highest ↑ in DT zone
Sleep	$F(1, 67) = 8.616$	.005*	.117	
Sleep*Zone	$F(2, 67) = .230$	.795	.007	
People verbally assaulting, intimidating you, customers	$F(2, 67) = 2.203$	.119	.063	Non-statistically significant ↑ in all zones; highest ↑ in 100m zone, followed by DT zone
Verbal	$F(1, 67) = 1.585$	.213	.024	
Verbal*Zone	$F(2, 67) = .008$	.992	.000	
People physically assaulting you, customers or employees	$F(2, 67) = .141$	.869	.004	Remained same in all zones, with 100m zone slightly ↑ but not statistically significant
Physical	$F(1, 67) = .147$	.703	.002	
Physical*Zone	$F(2, 67) = 159$	.853	.005	
Someone robbing your business during open hours	$F(2, 67) = 1.686$	.193	.048	Remained same in all zones, with 100m zone slightly ↓ but not statistically significant
Rob	$F(1, 67) = .763$	.386	.011	
Rob*Zone	$F(2, 67) = .531$	.590	.016	
People trespassing in the area around your business	$F(2, 67) = 4.693$	.012*	.123	↑ in all zones; highest ↑ in DT zone, followed by 500m zone
Trespass	$F(1, 67) = 16.276$	<.001**	.195	
Trespass*Zone	$F(2, 67) = 1.170$	.317	.034	

*Statistically significant $p < .05$
**Statistically significant $p < .005$
[‡]If overall ANOVA significant
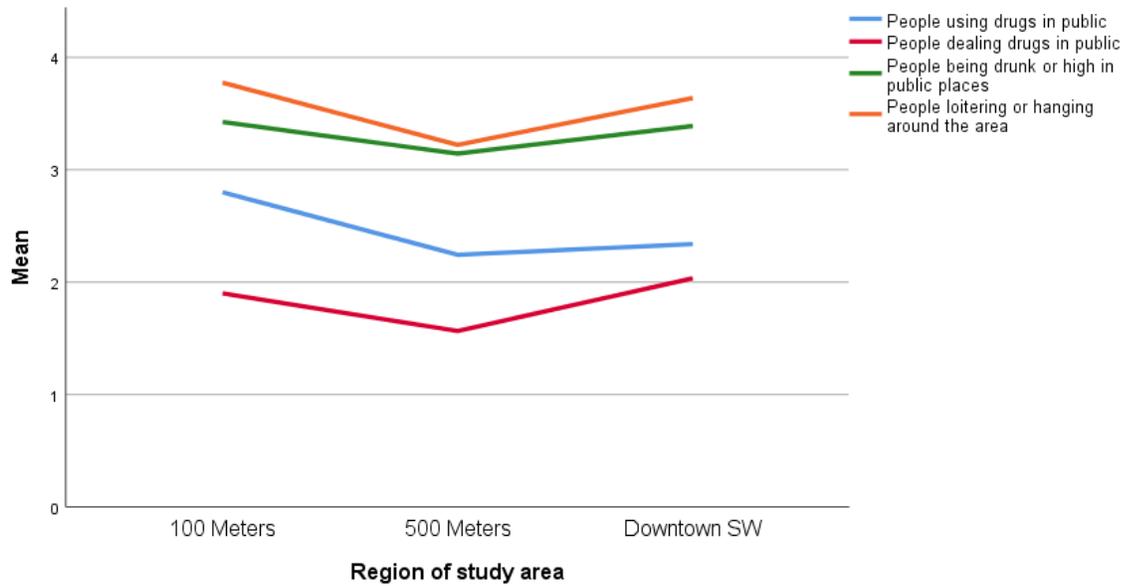
Figure 4. Top Antisocial Behaviour by Zone
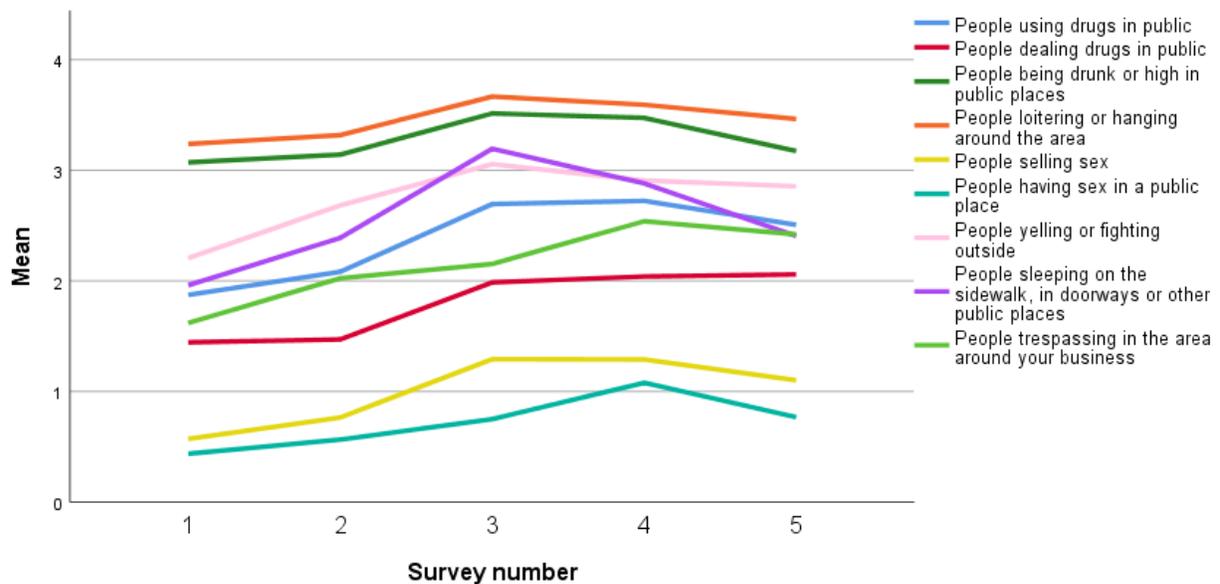
Figure 5. Antisocial behaviour, by Survey Number across Study Area

Environmental Disorder

Respondents were then asked about signs of social disorder they noticed in the immediate environment around their business: *In the area around your business, when did you, your staff or your customers see or experience the following?* A five-point scale was used to enable respondents to report the most recent time they witnessed each of 9 environment items: 0=never, 1=more than 3 months ago, 2=within the last 3 months, 3=within the last month, and 4=within the last day. Frequencies revealed that data was skewed—sometimes positively and sometimes negatively. Because the skew was not consistently one way or the other, it could not be

transformed consistently across variables relating to environment disorder. The means and standard deviations (see Appendix B) indicate that environmental disorder increased during the time frame of the study, variance that is somewhat attributable to the weather getting warmer. Comparing surveys 1 (baseline) and 5 (final), which had similar temperature and precipitation conditions, the 100m zone had the most needle/syringe debris and drug use paraphernalia items improperly discarded. Other environmental disorder items were fairly similar between surveys.

Table 10. Main Effects by Zone: Environment-Related Factors (Survey 1 and 5)

	ANCOVA	*p*	η²	Pairwise Comparisons‡ / Interpretation
ENVIRONMENT-RELATED FACTORS				
Garbage or litter lying around	F(2, 67) = 1.232	.298	.035	
Litter	F(1, 67) = .178	.675	.003	Remained same in all zones
Litter*Zone	F(2, 67) = .577	.564	.017	
Discarded needles or syringes lying around	F(2, 67) = 3.312	.042*	.089	↑ in all zones; highest rate in 100m zone
Needles	F(1, 67) = 1.818	.182	.026	
Needles*Zone	F(2, 67) = .320	.727	.009	
Discarded drug paraphernalia other than needles lying around	F(2, 67) = 2.703	.378	.028	↑ in all zones; greatest ↑ in 100m zone
Paraphernalia	F(1, 67) = 11.474	.001	.144	
Paraphernalia*Zone	F(2, 67) = 1.123	.331	.032	
Cigarette butts on the sidewalk	F(2, 67) = 5.400	.007*	.139	Small ↑ in 100m and 500m zones; DT zone small ↓
Cigarettes	F(1, 67) = .072	.789	.001	
Cigarettes*Zone	F(2, 67) = 1.217	.303	.035	
Empty beer cans or liquor bottles	F(2, 67) = 1.728	.186	.049	
Empties	F(1, 67) = .017	.898	.000	Remained same in all zones
Empties*Zone	F(2, 67) = .343	.711	.010	
Vandalism to property or vehicle(s) (including theft from vehicle)	F(2, 67) = 1.712	.188	.048	Remained same in all zones (upward trend in 100m and DT zone but did not achieve significance)
Vandalism	F(1, 67) = 2.222	.141	.032	
Vandalism*Zone	F(2, 67) = .062	.940	.002	
Theft or attempted theft of property or vehicle(s)	F(2, 67) = .653	.524	.019	Remained same in all zones (upward trend in 100m and 500m zone but did not achieve significance)
Theft	F(1, 67) = 2.978	.089	.042	
Theft*Zone	F(2, 67) = .944	.394	.027	
Break and enter, or attempted break and enter of business	F(2, 67) = .582	.562	.017	Remained same in all zones
Break-In	F(1, 67) = .113	.738	.002	
Break-In*Zone	F(2, 67) = 1.726	.186	.048	
Unmaintained properties (e.g. broken windows, boarded up shops, weeds out of control)	F(2, 67) = 1.527	.225	.043	Upward trend in all zones but did not achieve significance
Unmaintained	F(1, 67) = 2.452	.122	.035	
Unmaintained*Zone	F(2, 67) = .012	.988	.000	

*Statistically significant *p* < .05
**Statistically significant *p* < .005
‡If overall ANOVA significant

Feelings of Safety

Respondents were asked about their feelings of safety in the area around their business, during the day and during the evening or night. Respondents were asked to indicate the degree to which they agreed or disagreed with each of the statements (5=strongly agree, 4=agree, 3=neither agree nor disagree, 2=disagree, 1=strongly disagree). Data was skewed but because the skew was not universally positive or negative, it could not be transformed. The means and standard deviations (see Appendix B) indicate that in general, feelings of safety declined during the time frame of the study. Findings were significant for all indicators, with the 500m zone eliciting the highest reports of feeling safe, and the 100m and DT zones the lowest. The greatest decreases in feelings of safety occurred in the 100m and DT zones (see Table 11 and Figure 6).

Feelings of safety during the day were consistent between males and females, but a statistically significant difference emerged for male and female respondents when reporting feelings of safety after dark in their business and the area around their business, $F(3, 445)^2 = 11.295$, $p < .001$, with females feeling much less safe after dark.

Table 11. Main Effects by Zone: Feelings of Safety (Survey 1 and 5)

	ANCOVA	*p*	η²	Pairwise Comparisons‡ / Interpretations
FEELINGS OF SAFETY				
I feel safe walking in this area during the day	F(2, 67) = 1.293	.281	.037	↓ in 100m zone and DT zone; remained the same in 500m zone
Walking in Day	F(1, 67) = 12.682	.001**	.159	
Walking in Day*Zone	F(2, 67) = 4.659	.013*	.122	
I feel safe in my place of work during the day	F(2, 67) = 1.182	.313	.034	Highest in 500m zone; lowest in DT and 100m zone
Work during Day	F(1, 67) = 6.654	.012*	.089	
Work during Day*Zone	F(2, 67) = .991	.377	.028	
I feel safe walking in this area after dark	F(2, 67) = 3.101	<.001**	.084	Greatest ↓ in DT and 100m zones; highest in 500m zone where it remained the same; lowest in 100m zone
Walking after Dark	F(1, 67) = 10.683	.002*	.136	
Walking after Dark*Zone	F(2, 67) = 4.863	.011*	.125	
I feel safe in my place of work after dark	F(2, 67) = 5.542	.004**	.024	Greatest ↓ in DT zone, followed by 100m zone; highest in 500m zone where it remained the same; lowest in 100m zone
Work after Dark	F(1, 67) = 4.139	.020*	.109	
Work after Dark*Zone	F(2, 67) = 5.914	.004*	.148	
I think my customers/clients feel safe walking in this area during the day	F(2, 67) = 4.083	.021*	.107	Greatest ↓ in 100m zone, followed by DT zone; highest in 500m zone where it remained the same; lowest in DT, followed by 100m zone
Customers during Day	F(1, 67) = 20.068	<.001**	.228	
Customers during Day*Zone	F(2, 67) = 2.481	.091	.068	
I think my customers/clients feel safe walking in this area during after dark	F(2, 67) = 1.929	.153**	.054	Greatest ↓ in 100m zone, followed by DT zone; highest in 500m zone; lowest in DT zone
Customers after Dark	F(1, 67) = 26.117	<.001**	.277	
Customers after Dark *Zone	F(2, 67) = .810	.449	.023	

*Statistically significant *p* < .05
**Statistically significant *p* < .005
‡If overall ANOVA significant

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[2] Entire study sample included in this particular analysis
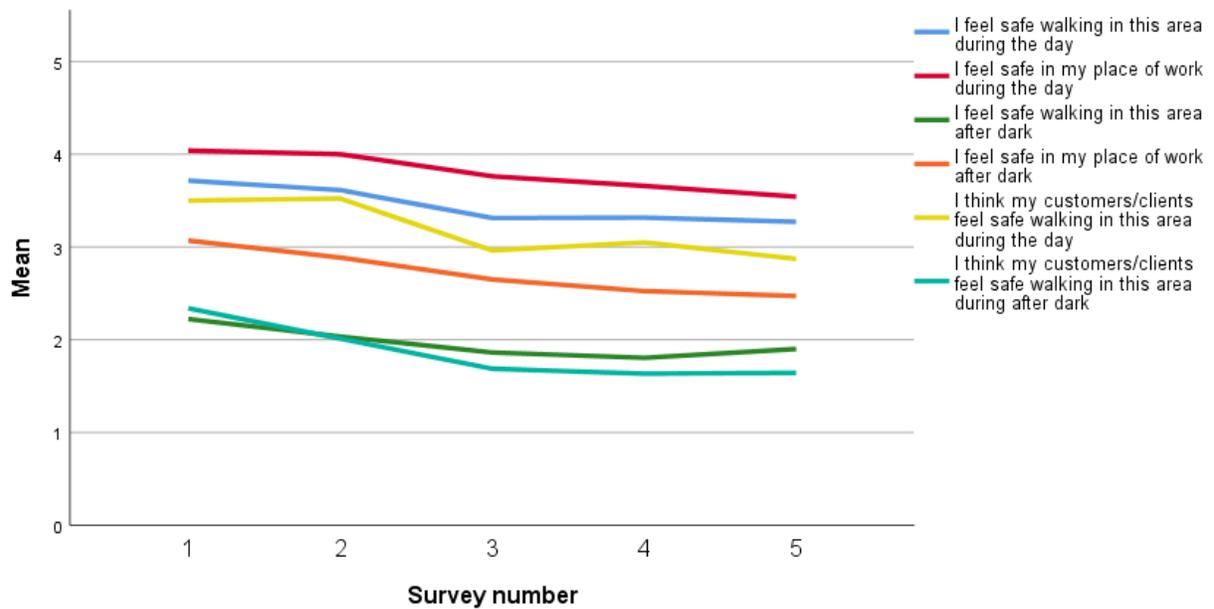
Figure 6. Feelings of Safety (All Zones)

Perceptions of Crime

Respondents were asked about their perceptions of crime in the area around their business: *In your opinion, over the past* 3 months *has crime increased, decreased, or stayed about the same in the area around your business?* A second question asked about their perceptions of crime over the past year. Response options were: 1=decreased a lot, 2=decreased a little, 3=stayed about the same, 4=increased a little, and 5=increased a lot (see means and standard deviations in Appendix B). The first and fifth survey in all three study zones revealed nonsignificant changes in perceptions of crime over the 3 months prior to each of those surveys. The 100m and 500m zone respondents reported that crime had significantly increased *over the past year*, however.

Satisfaction Operating Business in Area

Respondents were asked about how satisfied they were overall operating a business in the area and were asked to select from a series of five smiley emojis (Figure 7): "*Looking at the face scale, which face best shows how you feel about running your business in this neighbourhood?*" (see Figure 8). Means and standard deviations are in Appendix B. Data were compared as well between the first (baseline) and last surveys, as these surveys occurred in near identical weather conditions. Respondents in all three study zones (100m, 500m and downtown Southwest) reported a statistically significant decrease in their level of satisfaction being in their area (see Table 12).

Table 12. Overall Satisfaction with Location in Surveys 1 and 5 in Each Study Zone

OVERALL SATISFACTION IN AREA	Survey 1 M (SD)	n	Survey 5 M (SD)	n	Comparison t-test	$p^{\ddagger}$	Change
100m zone	3.22 (0.833)	9	1.78 (0.833)	9	$t(8) = 3.506$	.008*	↓
500m zone	3.57 (0.835)	37	2.95 (1.053)	37	$t(36) = 3.851$	<.001**	↓
Downtown	3.60 (1.190)	25	2.20 (1.041)	25	$t(24) = 4.850$	<.001**	↓

‡ 2-tailed
*Statistically significant $p < .05$
**Statistically significant $p < .005$

(1)　　　(2)　　　(3)　　　(4)　　　(5)
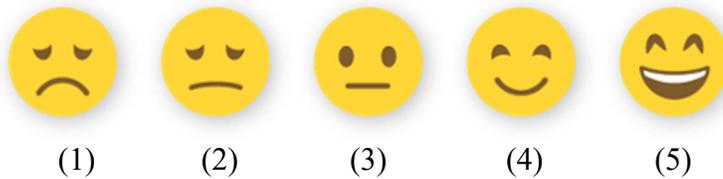
Figure 7. Emoji Likert Scale for Degree of Satisfaction in Running Business in Area
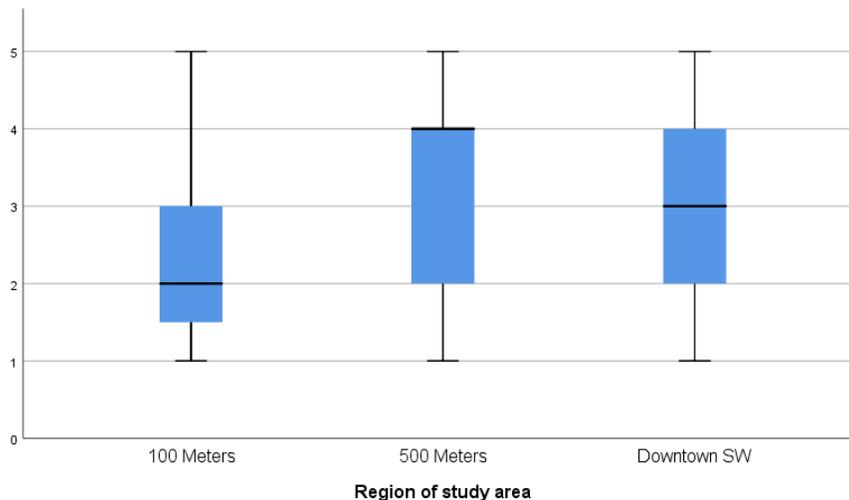
Figure 8. Overall Satisfaction with Location, by Study Zone

Respondents were asked about their intent to move their business out of their current area in the next 5 years. Results between surveys 1 and 5 did not differ in a statistically significant way. A chi-square test was conducted to evaluate whether businesses in the three different zones differed in their intent to move out of the area. The chi-square statistic was not significant, $\chi2 (4, N = 131) = .307$, $p = .989$, indicating that the intent to leave did not differ between study zones.

Analysis of Survey Proportions across the Five Time Periods

Several survey items were subjected to additional analysis: people using drugs in public, people dealing drugs in public, people being drunk or high in public places, discarded needles or syringes lying around, and discarded drug paraphernalia (items other than needles) lying around. The

proportion of survey respondents observing each of these items across the five quarterly surveys were analyzed using a Bernoulli model (Appendix C).

These analyses revealed two trends. First, the proportion of respondents who have never observed all types of antisocial behavior or physical disorder decreased between Survey 1 (baseline) and Survey 5 with the exception of *observing intoxicated persons*. Second, the proportion of respondents observing all types of antisocial behavior or physical disorder within the last month increased between Survey 1 and 5; however, only *people dealing drugs* had a statistically significant change. It is important to note that it is not possible to determine if these results were due to survey bias (i.e., people not observing drug use did not continue with the survey), by study respondents becoming more aware of these issue, or by factors associated with downtown change and the SCS.

Figure 9 shows the proportion of respondents observing people using drugs in public across the five surveys. There was a significant decrease in the proportion of respondents never observing drug use from Survey 1 (baseline) to Surveys 2, 3, 4, and 5. This proportion decreased by approximately 0.22 (95% Credible Interval: -0.10 – -0.33) between Survey 1 and Survey 5. There was also a significant increase in the proportion of respondents observing drug use within the most recent day from Survey 1 to Surveys 3 and 4, but there was no meaningful difference between Survey 1 and Survey 5. One explanation for this is that people observe recent drug use more frequently in months with warmer weather (August and November) than they do in months with cold weather (February). There was an overall increase in the proportion of respondents observing drug use within the last month from Survey 1 to Survey 5; however, there were no statistically significant differences amongst these proportions (Figure 9).
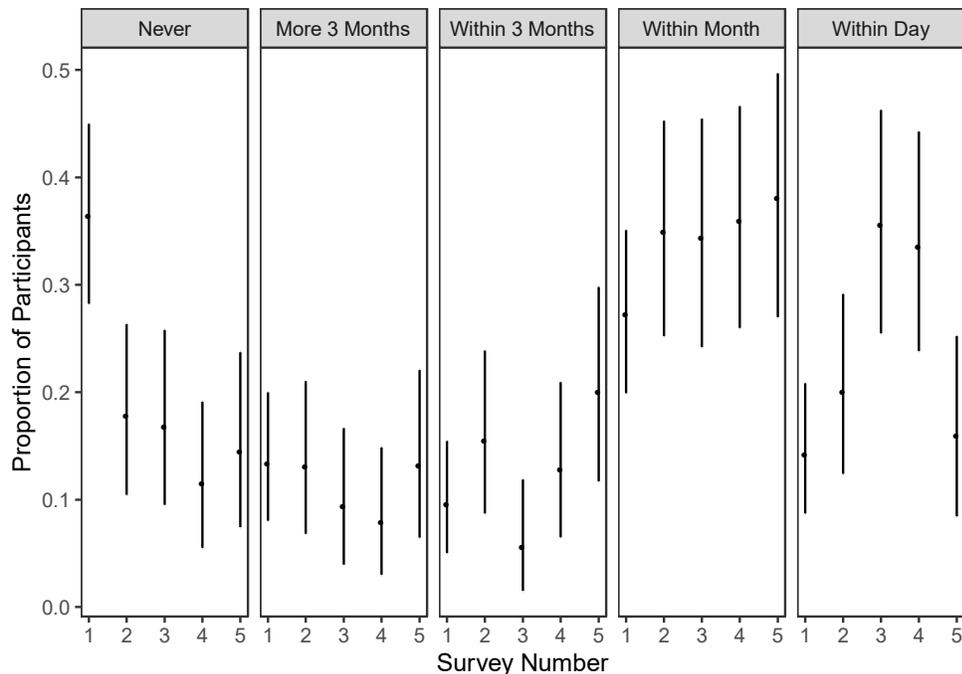
Figure 9. Variations in Observing People Using Drugs in Public

Figure 10 shows the proportion of survey respondents observing drug deals in public. In general, there was an overall decreasing trend across all survey periods, with a statistically significant decrease between Survey 1and Survey 5 (-0.20 with 95% Credible Interval: -0.33 – -0.09). This is consistent with observations of drug use in public (Figure 9). There was also a significant increase in the proportion of respondents observing drug deals within the most recent month when comparing Survey 1 and Survey 5 (0.18 with 95% CI: 0.05 – 0.32). This may indicate that the opening of the SCS between Survey 1 and Survey 2 led to an increase in the frequency of drug deals observed by study respondents; however, it is also possible that this change is due to survey response bias (i.e., respondents were more likely to stay enrolled in the study if they had recently observed a drug deal in public). There was no significant increase or decrease in the proportion of respondents observing drug deals more than three months ago, within the last three months, and within the last day.
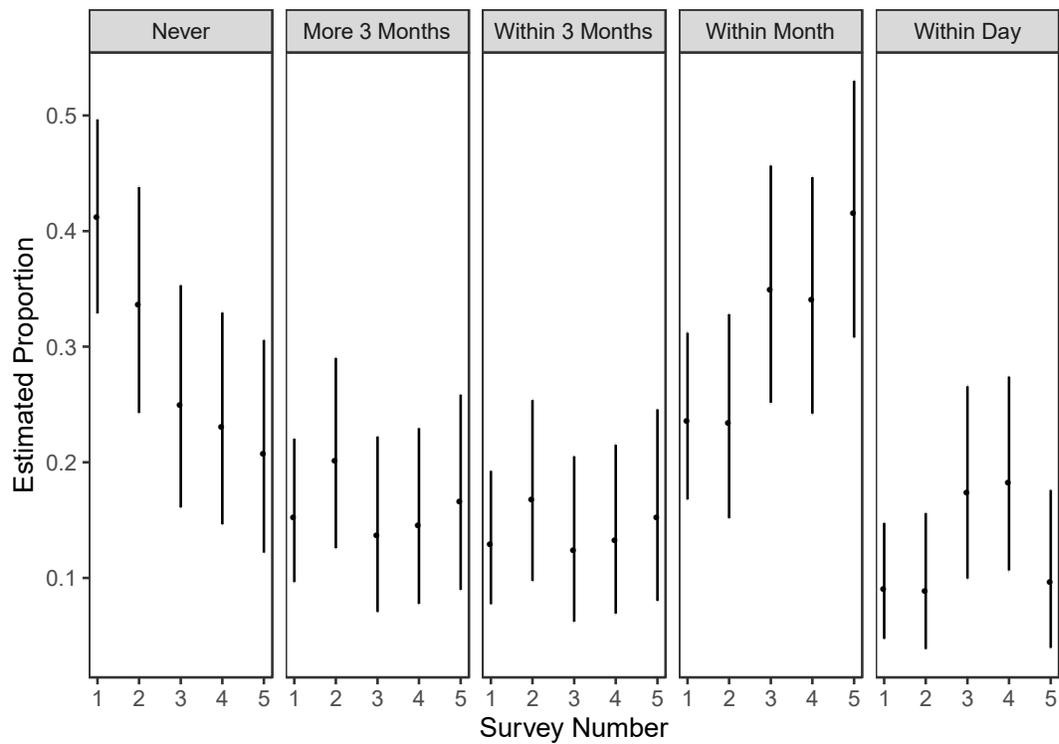
Figure 10. Variations in Observing People Dealing Drugs in Public

Figure 11 plots the proportion of study respondents observing drug use and indicates that the proportions in each category were relatively consistent over time. For example, almost no respondents had *never* seen intoxicated persons or seen intoxicated persons *more than three months ago* whereas a larger proportion of respondents had observed intoxicated peoples within the last month or day (see Figure 11). Note that the proportion of respondents observing intoxicated persons within the most recent day increased in Survey 3; however, this survey was administered during the summer and so this variation may be explained by more frequent observations and/or more intoxicated people being outside during warm temperatures.
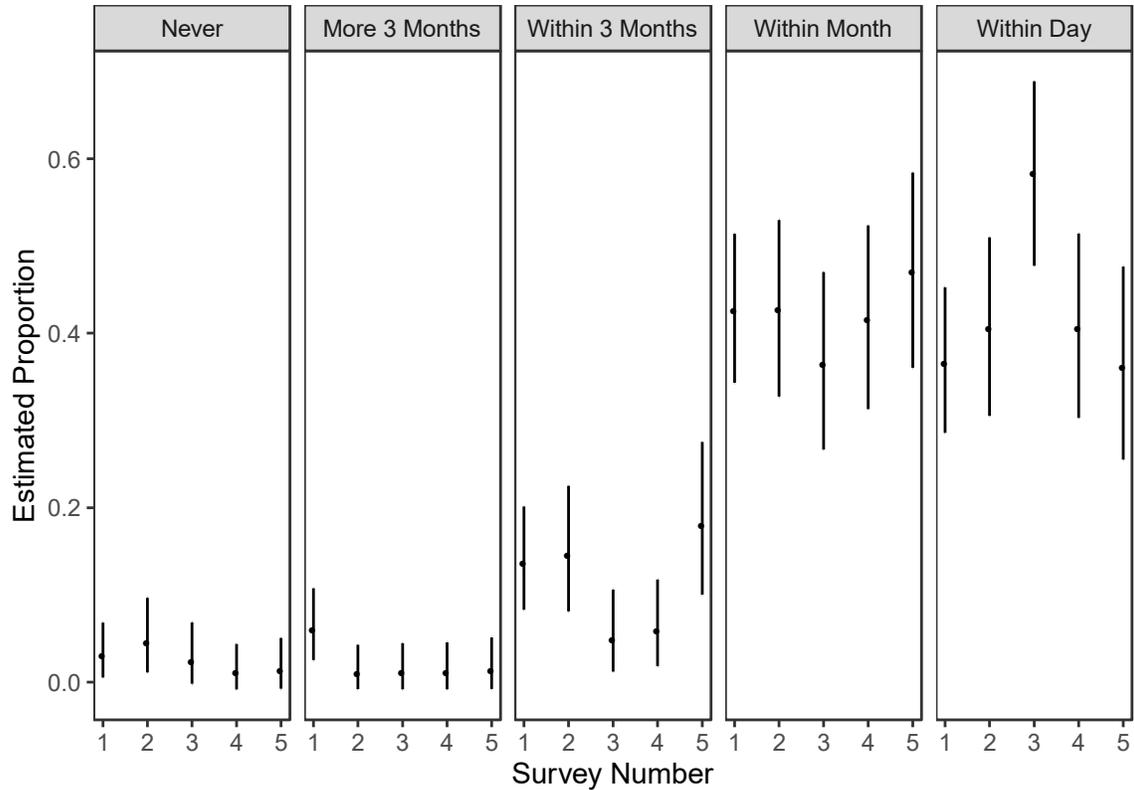
Figure 11. Variations in Observing People Who Are Intoxicated

Like observations of drug use and drug deals, the proportions of study respondents *never* observing needles significantly decreased from Survey 1 to Survey 5, with a difference of 0.19 (95% Credible Interval: -0.28 – -0.10) (Figure 12). This decrease was accompanied by increasing observations of needles *within the most recent month* between Survey 1 and Survey 4, with a difference of 0.17 (95% Credible Interval: 0.04 – 0.30), and an increase in respondents observing needles *within the last three months* from Surveys 4 and 5, with a difference of 0.16 (95% Credible Interval: 0.05 – 0.28). Combined these findings suggest that the prevalence of needles increased following the opening of the SCS but that this measure of social disorder had stopped increasing as of February 2019.
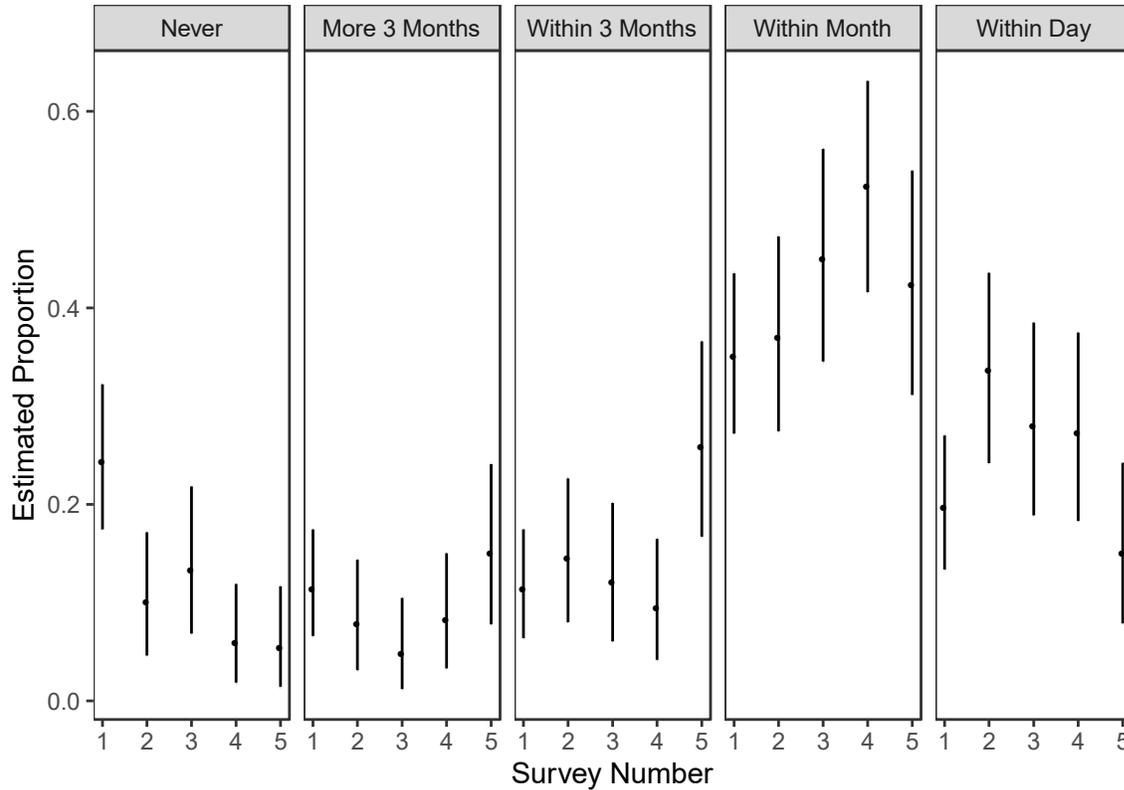
Figure 12. Variations in Observing Discarded Needles

Figure 13 shows the proportions of respondents *never* observing drug paraphernalia (not including needles) and indicates that this measure decreased significantly between Survey 1 and Survey 5, with a difference of -0.21 (95% Credible Interval: -0.32 – -0.10). There were no statistically significant changes in the proportion of respondents observing drug paraphernalia more than three months ago or within the last three months. There was an increase in the proportion of study respondents observing paraphernalia *within the last month* but this was not significant at the 95% Credible Interval.
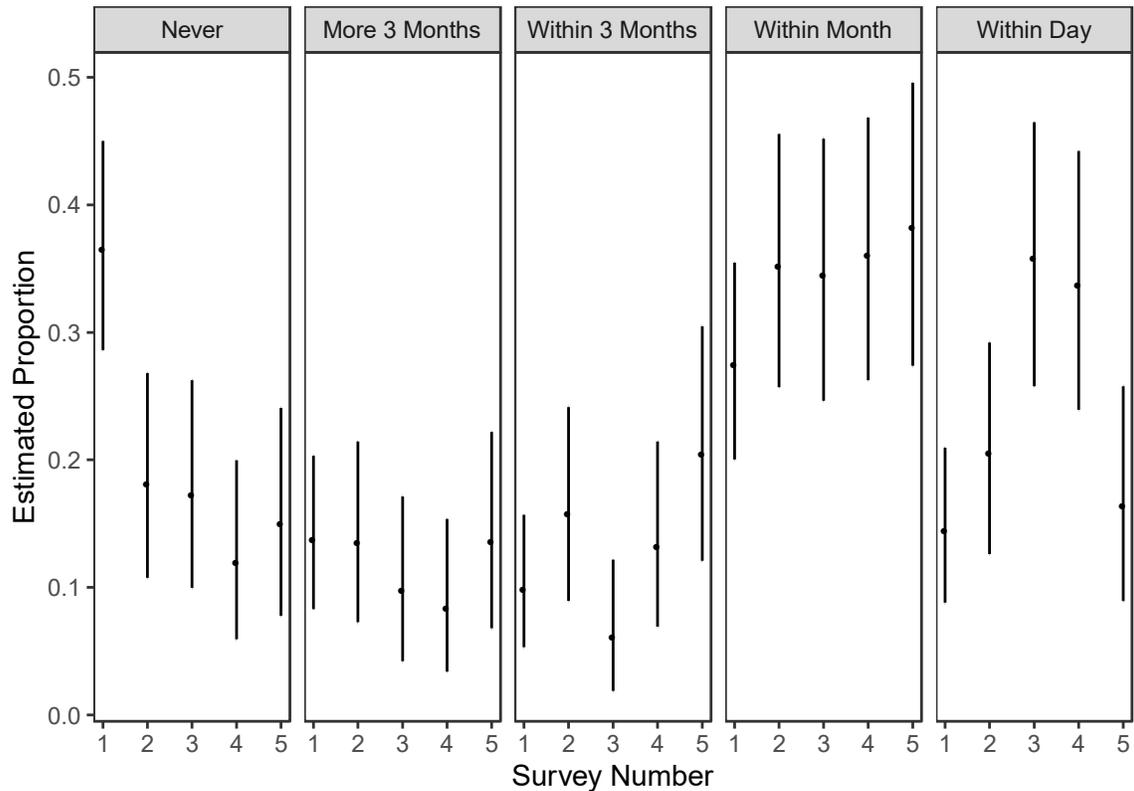
Figure 13. Variations in Observing Discarded Drug Paraphernalia

Next, we compared trends for *never* observing all types of antisocial behavior or physical disorder. Four of the five variables showed statistically significant decreasing trends across the five surveys (see Figure 14) with only observations of intoxicated people showing no change. Similarly, all variables showed an increase in the proportions of respondents observing within the month between Survey 1 and Survey 5 (see Figure 15). However, only *people dealing drugs* was found to be statistically significant.
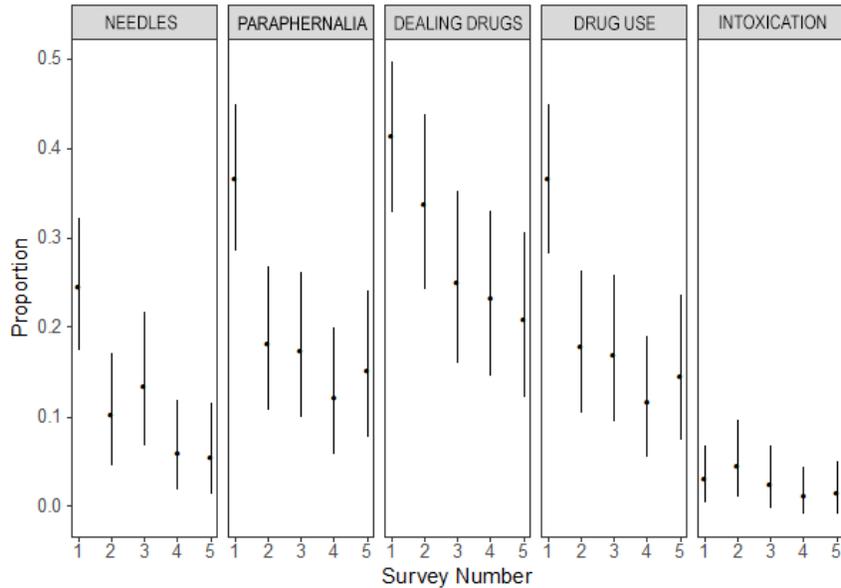
Figure 14. Proportion of Respondents who have Never Seen Selected Factors
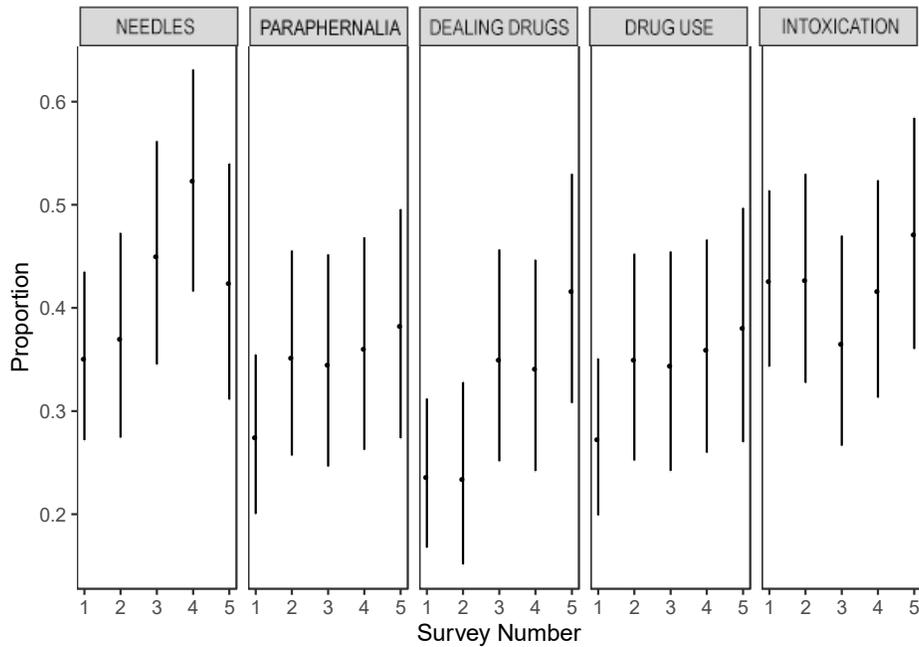
Figure 15. Proportion of Respondents who have Seen Selected Factors in the Past Month

Spatial Analysis

Following the item-by-item analysis in the section above, a spatial analysis was conducted to look for the geographical patterns of survey respondents on specific variables of interest: (1) People using drugs in public; (2) People dealing drugs in public; (3) People drinking alcohol in public; (4) People yelling or fighting outside; (5) People verbally assaulting, harassing or intimidating you, your customers or employees; (6) People trespassing in the area around your business; (7) Discarded needles or syringes lying around; (8) Discarded drug paraphernalia other than needles lying around; (9) Vandalism to property or vehicle(s); and (10) Theft or attempted theft of property or vehicle(s).

For interpretation, the descriptive maps below focus specifically on two conditions: Infrequent observations (respondents never observing antisocial behaviour and respondents observing antisocial behaviour more than 3 months ago) and recent observations (the respondents observing antisocial behaviour within the last one month and within the last day). All maps follow the same scale and color scheme, where dark blue colors indicate a low density of responses (i.e., few people observing drug use) and where yellow colors indicate a high density of responses (i.e., many people observing drug use). The red dot is the approximate location of the SCS.

The spatial pattern of respondents infrequently and recently observing public drug use is shown in Figure 16. In general, the number of survey respondents recently observing drug use relative increased during the study period and the number of survey respondents infrequently observing drug use decreased. From Figure 16, it appears that much of the increase in recent observations of drug use was located around the SCS in Surveys 3, 4, and 5.
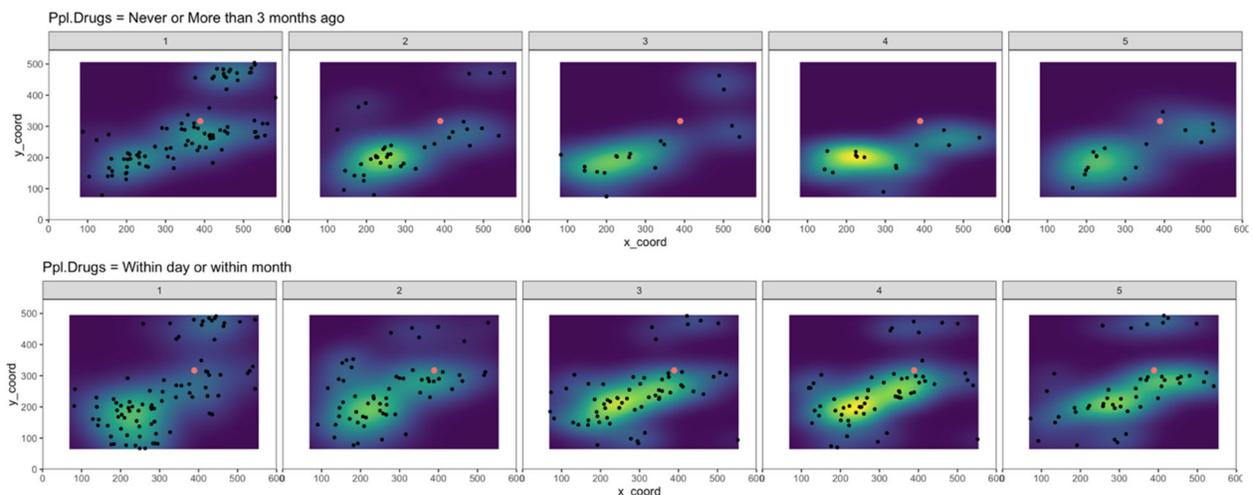
Figure 16. People Using Drugs in Public

Figure 17 shows the distribution of respondents infrequently and recently observing drug dealing in public. Across all surveys, there was a cluster of respondents who recently observed drug dealing located near to the downtown Southwest of the study area. In Survey 4 and 5, there appears to be an increasing density of respondents who recently observed drug dealing close to the SCS; however, there was also an increase in the density of respondents who never observed drug dealing close to the SCS.
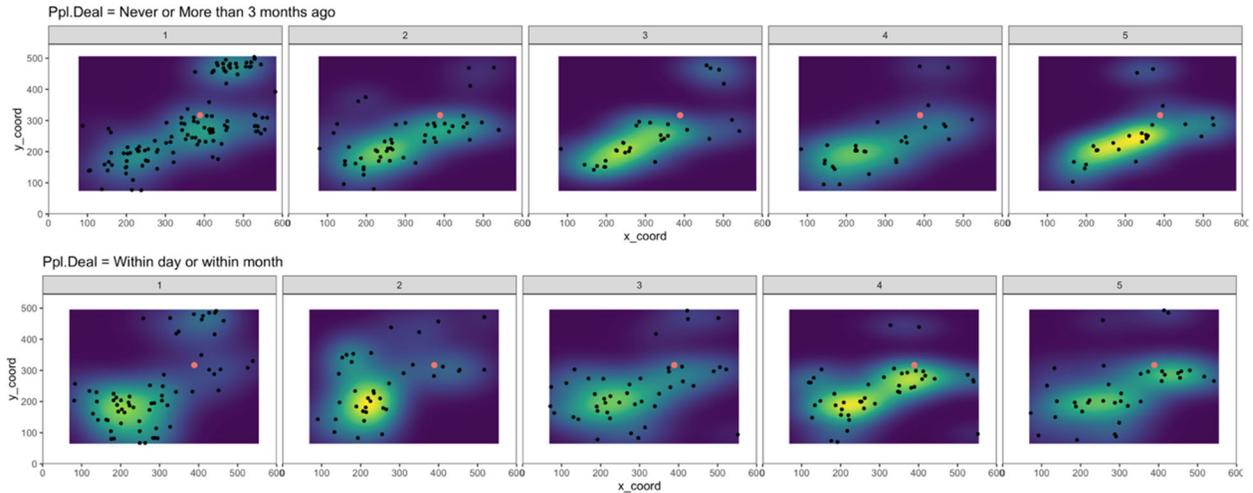
Figure 17. People Dealing Drugs in Public.

Figure 18 maps infrequent and recent observations of people drinking alcohol in public. The most identifiable pattern observed in Figure 18 is the cluster of respondents who have never observed alcohol use located close to the SCS in Survey 5. There was also a relatively consistent cluster of respondents indicating recent observations of alcohol consumption in and around the downtown Southwest area of the study area across all survey periods.
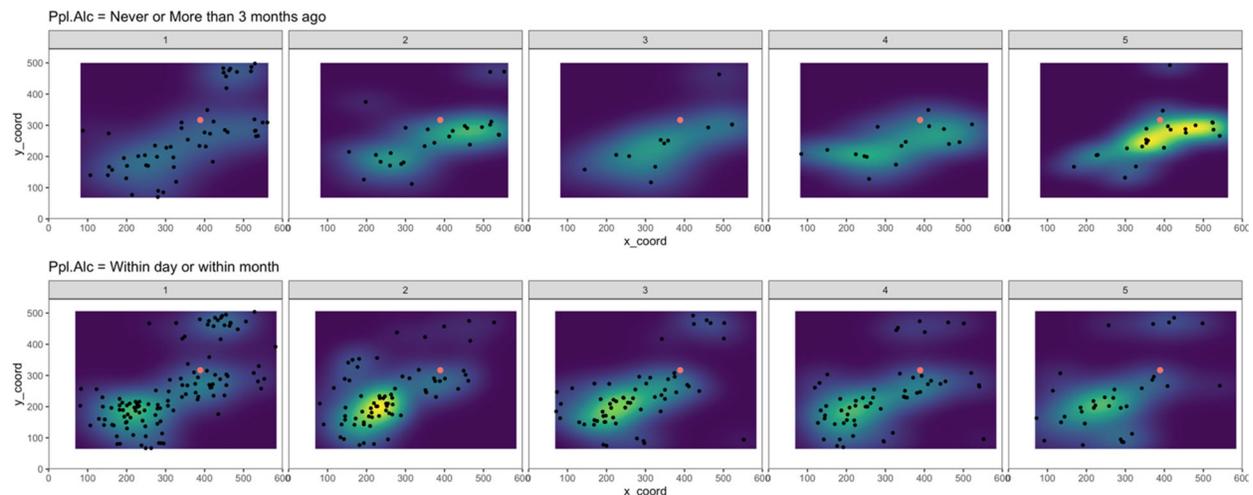
Figure 18. People Drinking Alcohol in Public

There was very sparse data for survey respondents indicating that they had infrequently observed yelling and fighting in public (top of Figure 19). This number decreased substantially across the five survey periods; however, it is not clear to what degree this decrease is due to changing responses (e.g., people who had never seen fighting in Survey 1 have observed fighting in Survey 2) or due to biases in survey response (i.e., only people who had seen fighting recently stayed enrolled in the study). Figure 19 also suggests that there was an increasing density of respondents who recently observed fighting close to the SCS in Surveys 4 and 5 compared to Surveys 1 and 2 (Figure 19).
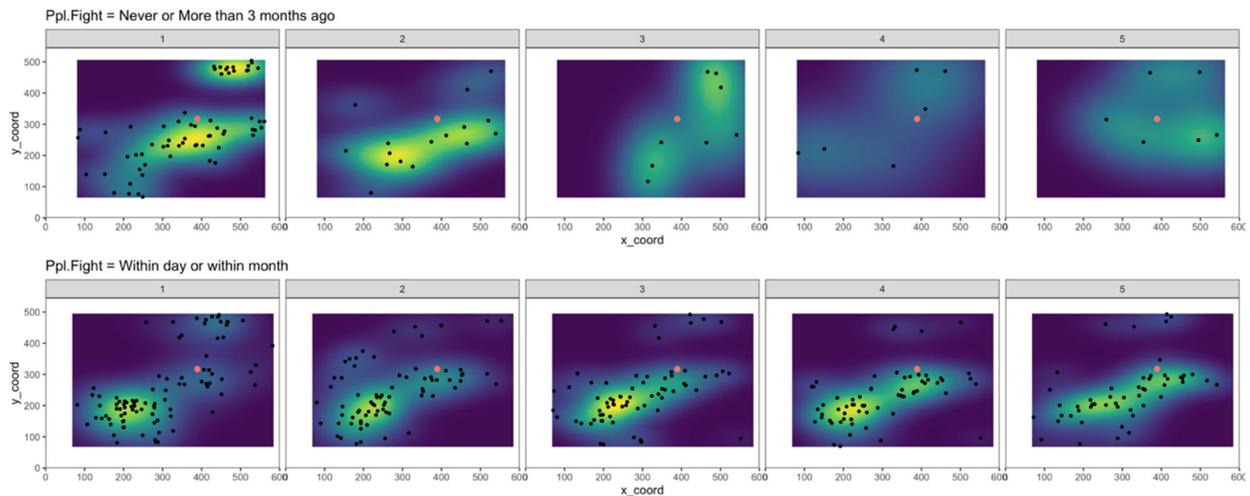
Figure 19. People Yelling or Fighting Outside

Focusing on the respondents who have infrequently observed verbal assault or intimidation, there was a consistent concentration of respondents located in the downtown Southwest of the study area through all survey periods (Figure 20). In contrast, there appears to be an increase in the number of respondents recently observing verbal assault or intimidation located close to the SCS in Surveys 4 and 5 relative to the concentration of respondents recently observing verbal assault or intimidation in the southwest of the study area in Survey 2.
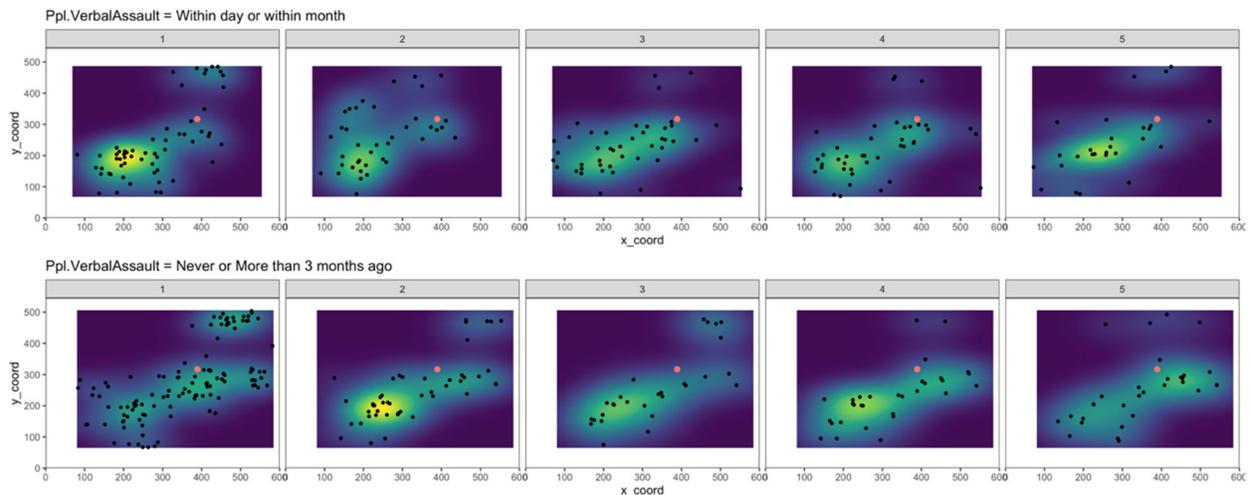
Figure 20. People Verbally Assaulting or Intimidating You or Customers

The spatial pattern of respondents observing people trespassing is mapped in Figure 21. With the exception of small cluster of respondents infrequently observing trespassing located in the downtown Southwest zone in Survey 4, there was a relatively dispersed pattern of infrequent trespassing observations for all Surveys. In contrast, there were noticeable clusters of recent observations of trespassing in the southwest of the study region in Surveys 2, 3, 4, and 5 and located in close proximity to the SCS in Survey 4, in particular.
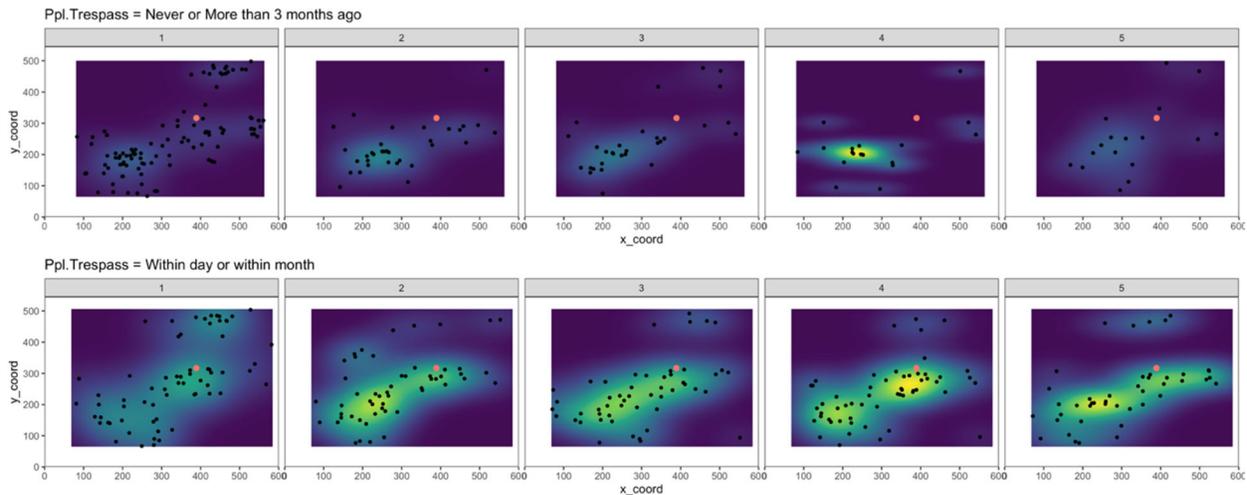
Figure 21. People Trespassing in the Area Around Your Business

Figure 22 maps the pattern of respondents infrequently or recently observing discarded needles or syringes lying around across the five surveys. Like observations of people trespassing, there were almost no clusters of infrequent observations of discarded needles in the study area for all surveys. Also like observations of people trespassing, there were relatively stable clusters of recent discarded needle observations in the downtown Southwest zone in Surveys 2, 3, 4, and 5.
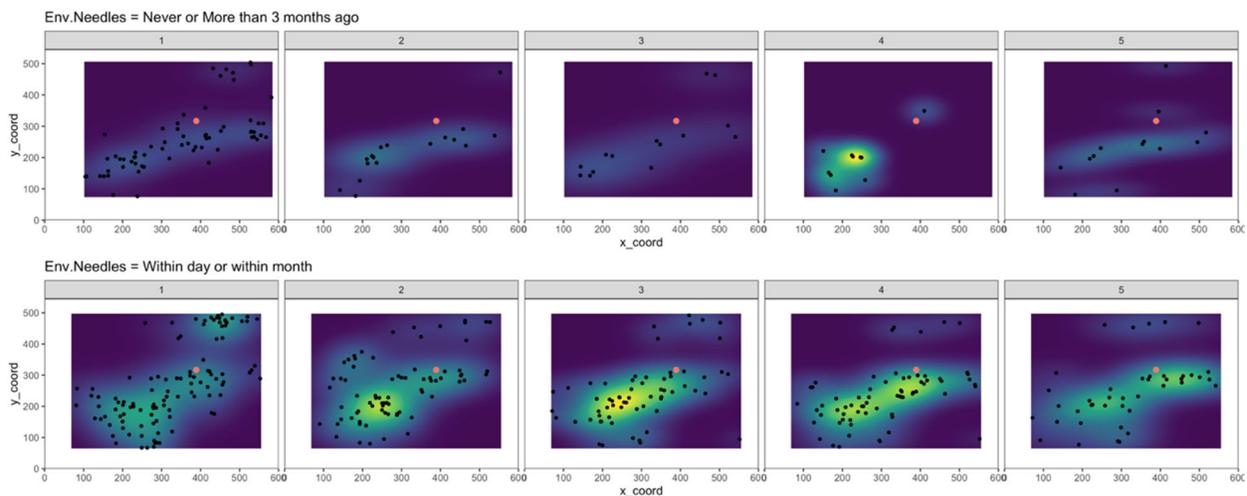
Figure 22. Discarded Needles or Syringes Lying Around

Recent and infrequent observations of discarded drug paraphernalia other than needles is mapped in Figure 23. In general, there were few concentrations of respondents infrequently observing discarded drug paraphernalia through all of the survey periods but high clustering of respondents recently observing discarded drug paraphernalia in the downtown Southwest zone in Surveys 1, 2 and 3, and with an emerging cluster located around the SCS in Surveys 4 and 5.
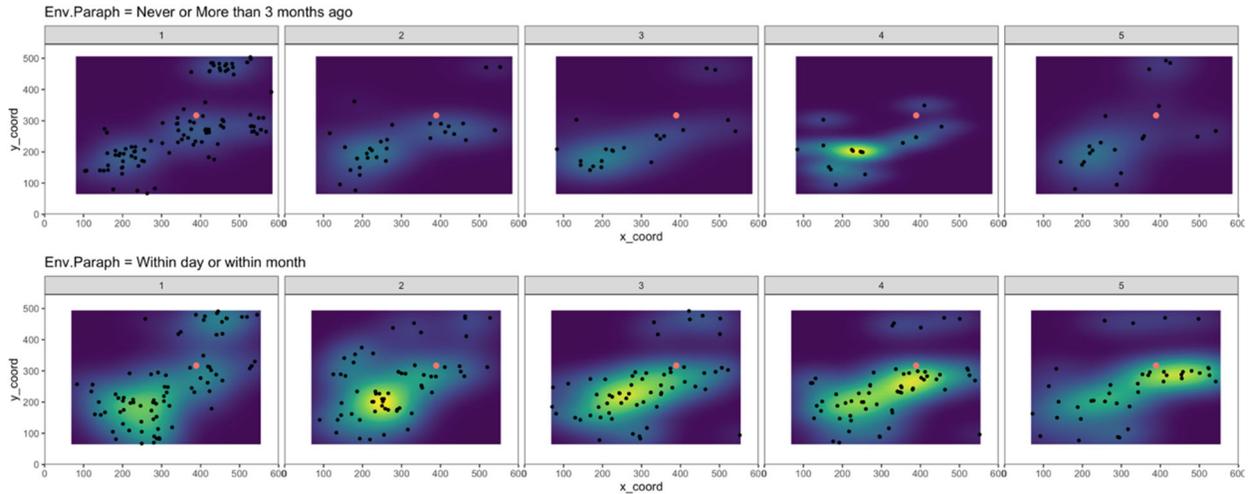
Figure 23. Discarded Drug Paraphernalia other than Needles Lying Around

The spatial pattern of respondents infrequently and recently observing vandalism to property or vehicle(s) is shown in Figure 24. There were clusters of respondents who had infrequently seen vandalism located in the downtown Southwest zone in Surveys 1, 2, and 4, whereas there was a single cluster of respondents who had recently observed vandalism in the downtown Southwest zone in Survey 5.
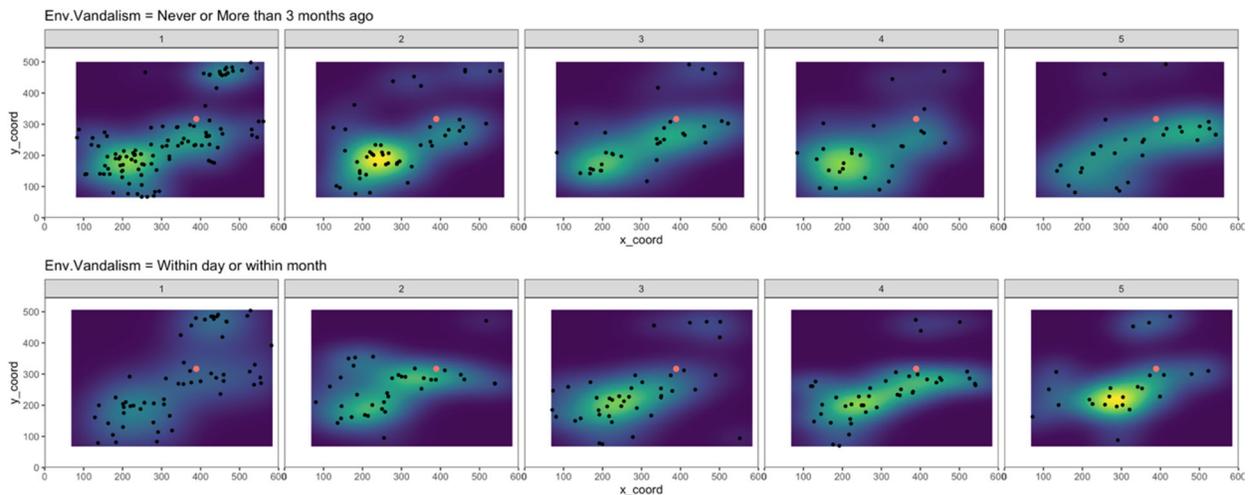
Figure 24. Vandalism to Property or Vehicle(s)

Figure 25 maps respondents who had infrequently or recently observed theft or attempted theft of property or vehicle(s). In Surveys 2, 3, and 4 there was a cluster of respondents who had never observed theft located close to the downtown Southwest zone; however, this pattern becomes more dispersed in Survey 5. For the respondents who had recently observed theft or attempted theft, there was a relatively dispersed pattern in Survey 1, an increase in the overall clustering pattern through Surveys 2, and 4, and a cluster of recent theft observations located in the downtown Southwest zone in Survey 5.
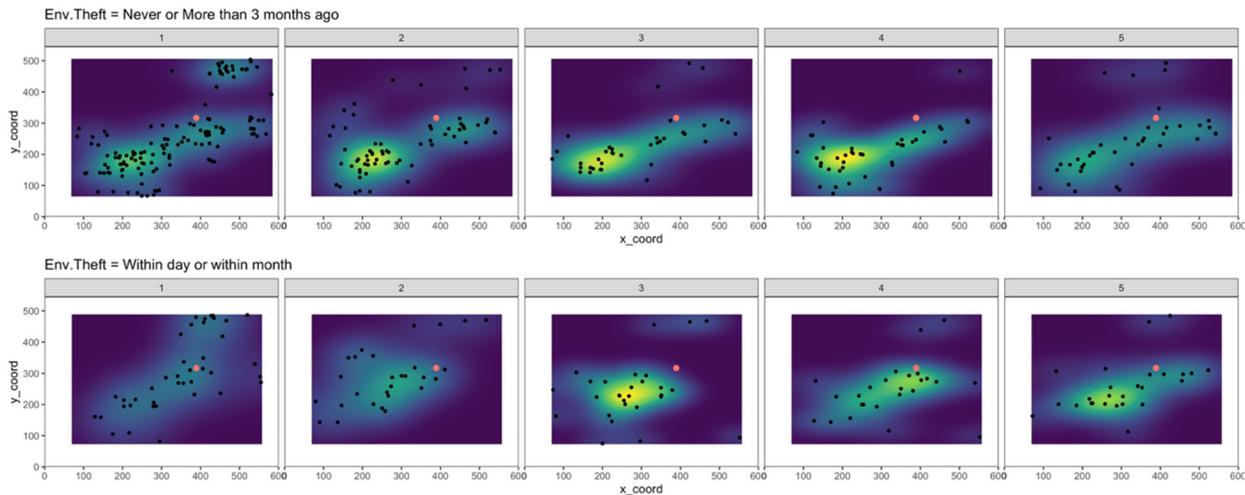
Figure 25. Theft or Attempted Theft of Property or Vehicle(s)

Other External Data Sources

DOT Van (CMHA Lethbridge)

The Diversion Outreach Team (DOT) van usage statistics were used as a proxy measure for social disorder and were analyzed for trends, from one year before the SCS opened to one year after, by month. These pickup and dropoff data are displayed by study zone (100m, 500m, homeless shelter, and the entire study area) in Table 13. The sharpest increase in DOT van pickups was in the 100m zone in March 2018, going from a maximum of two pickups per month, to 29 pickups that month and increasing to 58 in February 2019. These trends are captured in Figures 26-31 below.

Table 13. DOT Van Pickups and Dropoffs by Zone

Month	100 metre		500 metre		Shelter area		Entire study area	
	Pickups	Dropoffs	Pickups	Dropoffs	Pickups	Dropoffs	Pickups	Dropoffs
FEB. 2017	0	0	65	11	53	277	363	368
MAR. 2017	2	0	81	48	100	266	399	110
APR. 2017	0	0	78	30	74	225	318	325
MAY 2017	0	0	127	53	79	317	425	485
JUN. 2017	0	0	97	25	38	290	336	403
JUL. 2017	1	0	120	18	48	232	308	349
AUG. 2017	1	0	103	26	31	225	296	326
SEP. 2017	0	0	84	16	30	211	297	284

Month	100 metre		500 metre		Shelter area		Entire study area	
	Pickups	Dropoffs	Pickups	Dropoffs	Pickups	Dropoffs	Pickups	Dropoffs
OCT. 2017	0	0	49	20	53	201	251	273
NOV. 2017	0	0	86	56	64	237	346	353
DEC. 2017	1	0	60	18	55	250	293	336
JAN. 2018	0	0	65	27	69	351	367	473
FEB. 2018	1	5	72	19	93	301	395	448
SCS Opened								
MAR. 2018	29	8	82	55	100	270	417	461
APR. 2018	21	17	88	20	34	213	298	331
MAY. 2018	26	6	73	12	31	200	259	300
JUN. 2018	37	16	87	8	43	210	284	326
JUL. 2018	35	28	85	16	29	244	318	352
AUG. 2018	32	21	70	17	21	170	242	279
SEP. 2018	26	31	94	9	26	273	346	466
OCT. 2018	50	15	84	18	31	337	420	483
NOV. 2018	53	17	82	38	54	309	435	495
DEC. 2018	54	20	52	28	32	219	297	341
JAN. 2019	44	27	42	20	34	212	301	384
FEB. 2019	58	41	63	9	55	234	346	396
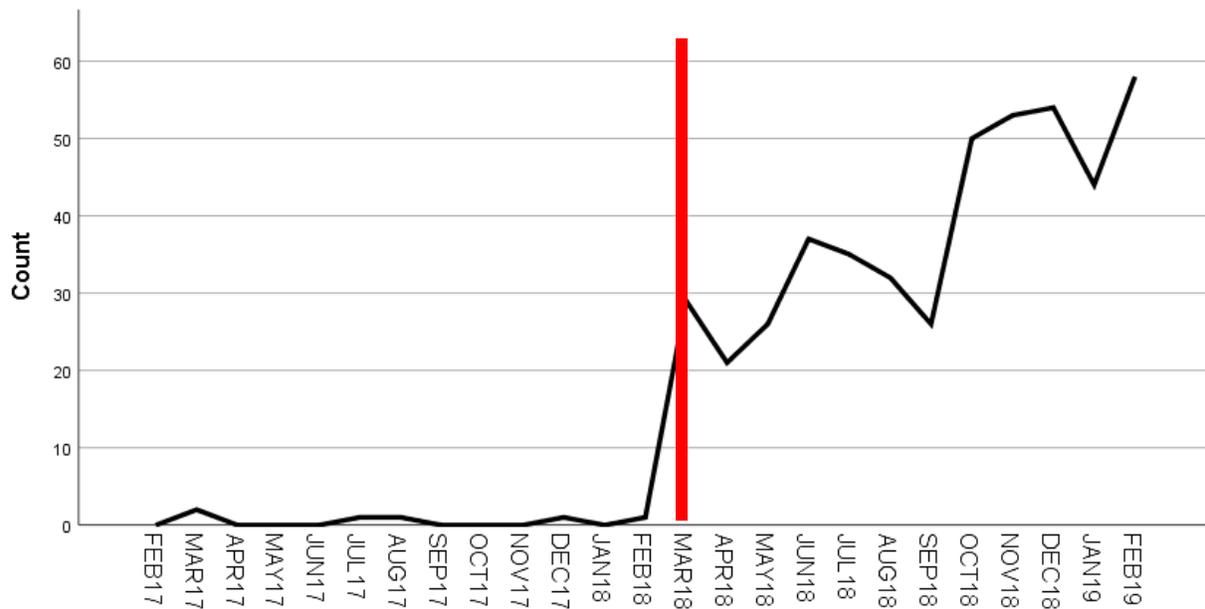
Figure 26. DOT Van Pickups in 100m Zone, 1 Year Prior and 1 Year After Site Open
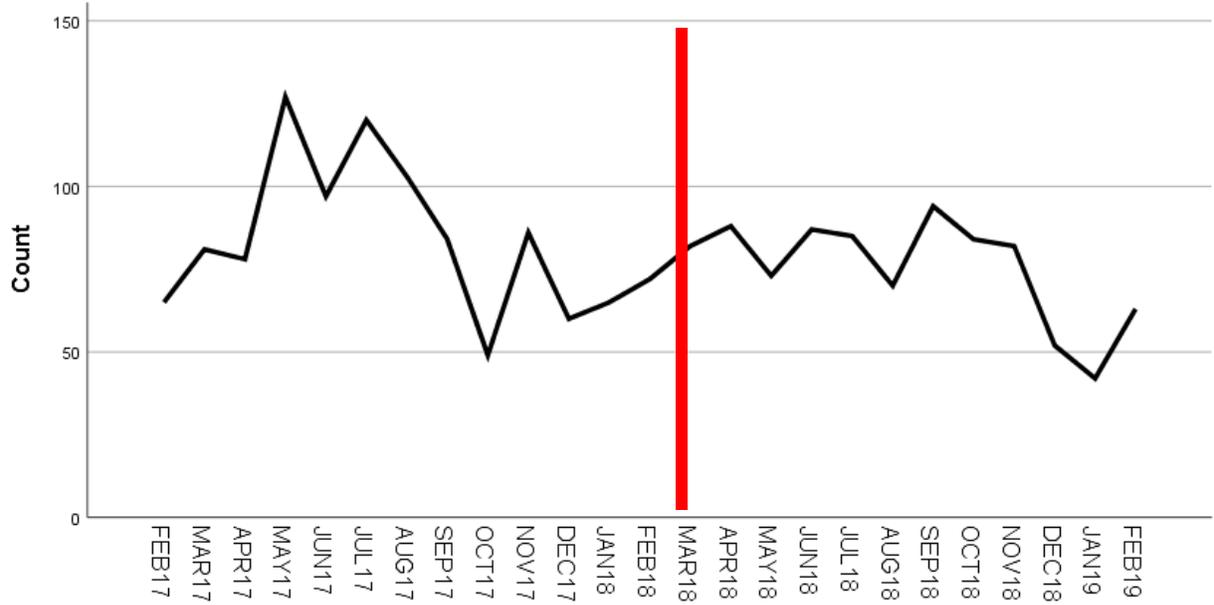
Figure 27. DOT Van Pickups in <u>500m</u> Zone, 1 Year Prior and 1 Year After Site Open
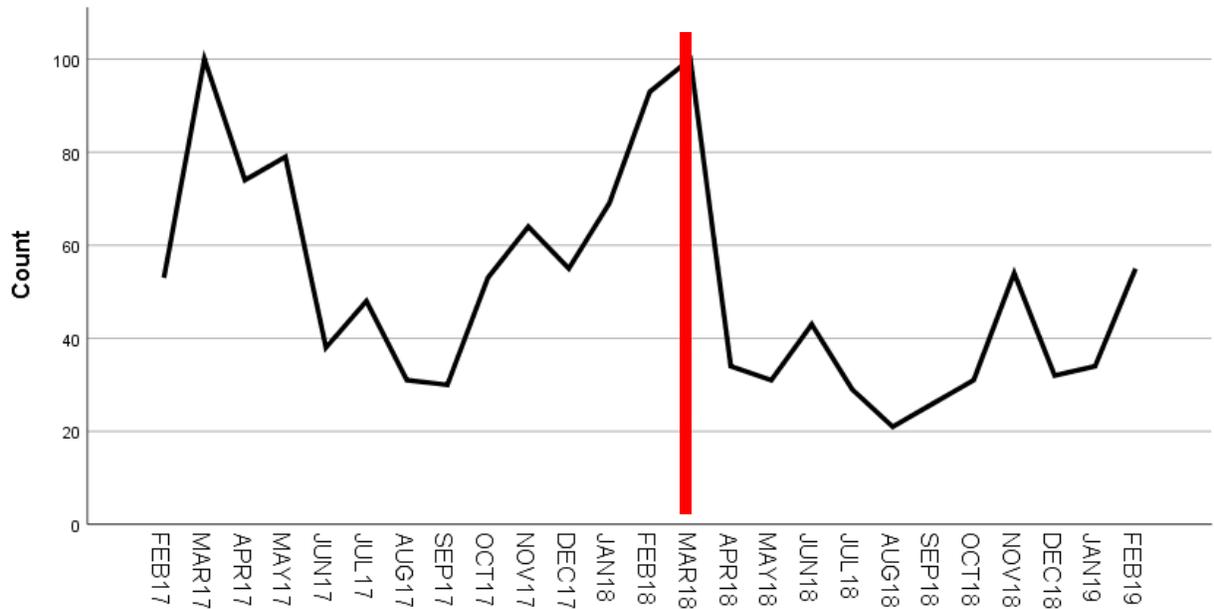
Figure 28. DOT Van Pickups from <u>Shelter</u>, 1 Year Prior and 1 Year After Site Open
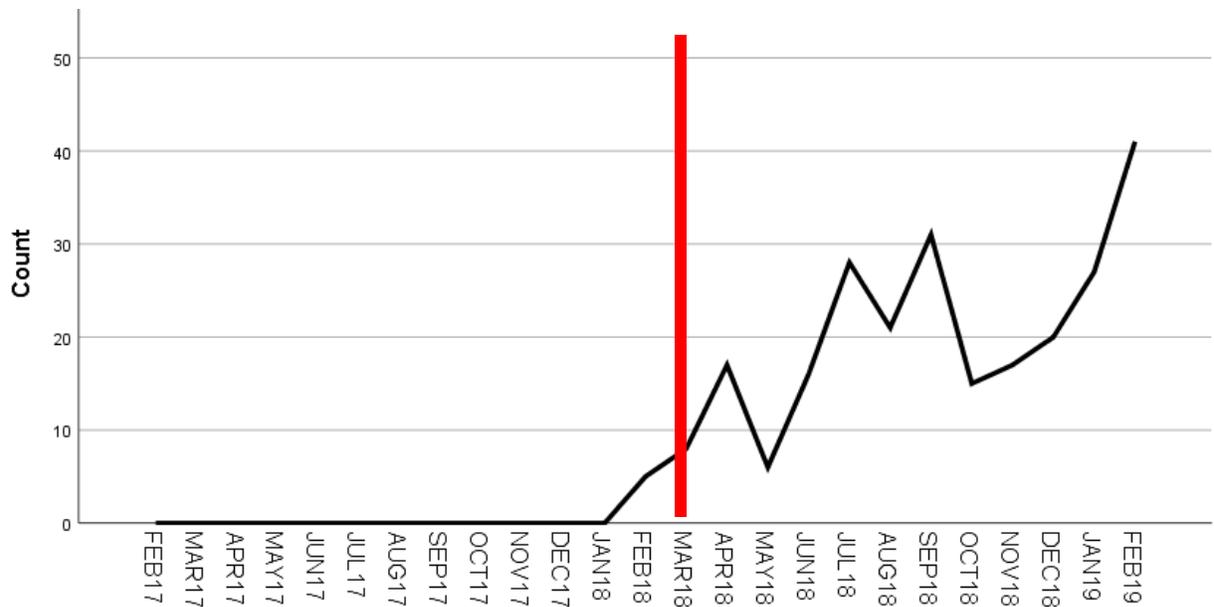
Figure 29. DOT Van Dropoffs in <u>100m Zone</u>, 1 Year Prior and 1 Year After Site Open
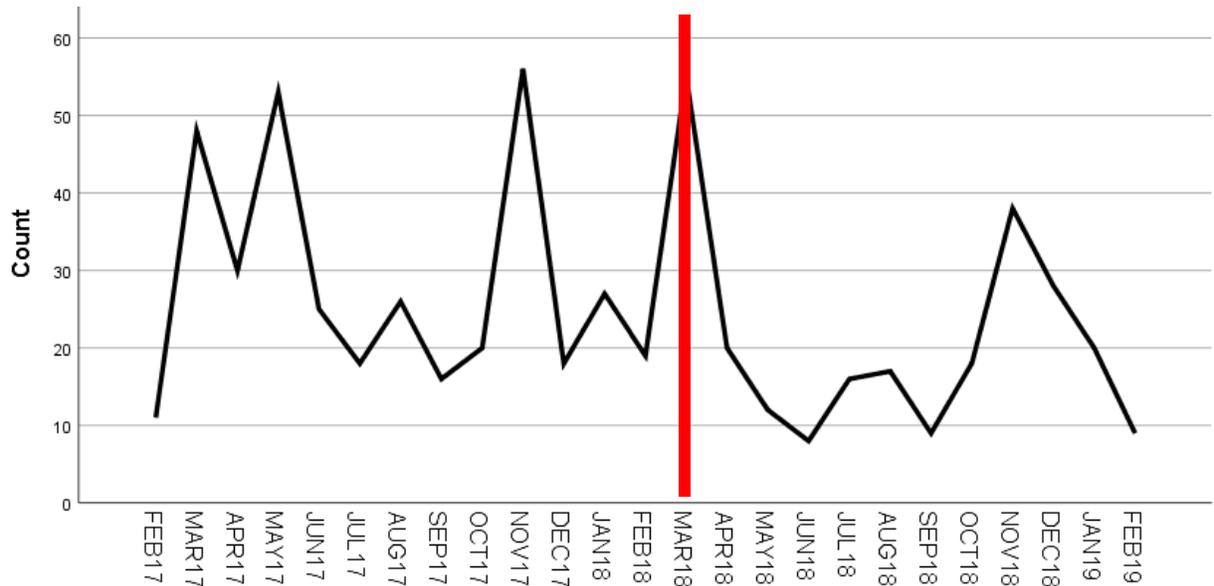
Figure 30. DOT Van Dropoffs in <u>500m Zone</u>, 1 Year Prior and 1 Year After Site Open
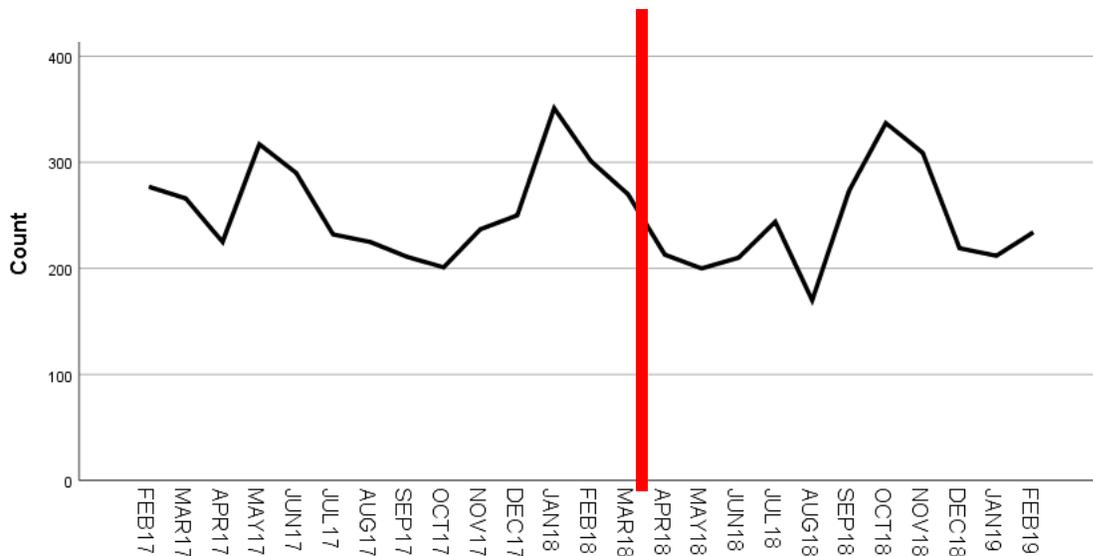
Figure 31. DOT Van Dropoffs at <u>Shelter</u>, 1 Year Prior and 1 Year After Site Open

These data indicate a well-used public service that is of great value to Lethbridge. They also reveal a shift in service pattern, with the 500m zone having fewer calls and the proportional calls for service increasing in the 100m zone.

Lethbridge Public Library

The Lethbridge Public Library offers unfettered public access, quiet areas, and opportunities for solitude. These qualities also make the Library an appealing location for people who use substances. Lethbridge Public Library collects data regarding needles found on their site and these data were used as a proxy measure for social disorder. In 2017, a total of 954 needles were found at the Library; in 2018, this number was lowered to 719. The monthly counts are in Figure 32.

The Library also records critical incidents, such as events relating to substance use, disruptive behaviour, or violence within the Library. The data regarding the most common incidents (> 5 incidents per year) are in Table 14. While the available data is not granular enough to see a shift directly related to the SCS, what is significant is the change from alcohol being the main substance of abuse, to illicit drugs, a change that occurred between 2015 and 2016, as the opioid epidemic was worsening.

Table 14. Critical Incidents at the Lethbridge Public Library

Incident Type	2014	2015	Year 2016	2017	2018
Drugs	8	5	14	35	58
Disruptive Behaviour	24	13	10	8	13
Medical	15	5	13	12	13
Suspicious Behaviour	2	3	3	5	9
Ban	1	5	0	0	7
Assault	2	2	9	0	5
Existing Ban	7	7	1	4	5
Fighting	5	4	4	7	5
Alcohol	36	33	7	2	3
Theft	4	4	8	1	2
Threat	4	0	7	4	1
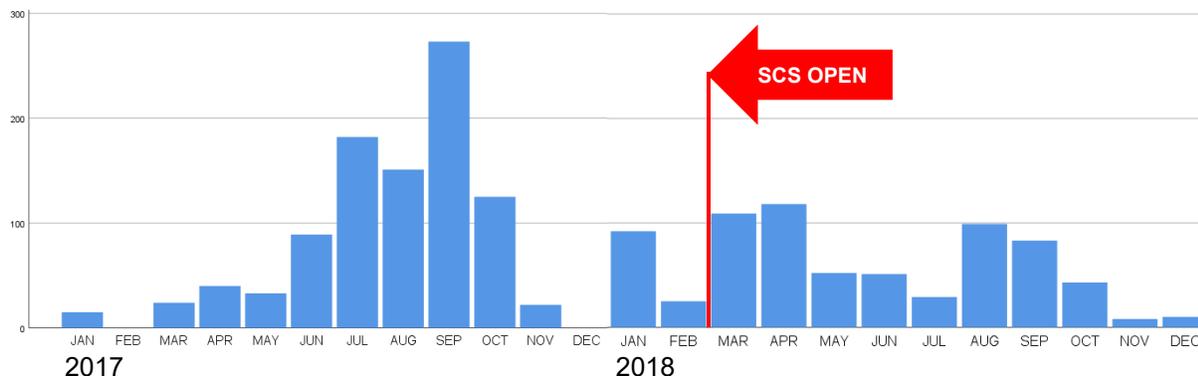
Figure 32. Needle Finds at the Library, 2017 and 2018

ARCHES Needle Pickup Service

ARCHES provided data from their needle pickup service, for the time period April 2017 to June 2018. Data were recoded from actual pickup address to the zones delineated for the study (100m, 500m and downtown Southwest). Areas outside of these zones, and service calls in which the address was missing from the record, were excluded from analysis, resulting in 318 calls for service during April-December 2017 and 542 calls during January-June 2018 (totalling 860 calls in the study area between April 2017 and June 2018). The number of calls for service, and the number of needles retrieved (by month), are in Table 15. These data reveal a low number of calls in the 100m zone prior to the SCS opening, and markedly higher after, corroborating business owner/operators' survey responses indicating that they are increasingly finding needles.

Table 15. ARCHES Needle Pickup Service: Calls for Service and Number of Needles

		100 Meter Zone		500 Meter Zone		Downtown SW Zone	
		# Calls	# Needles	# Calls	# Needles	# Calls	# Needles
2017	April	0	0	6	27	2	53
	May	0	0	5	38	4	24
	June	1	1	17	124	18	138
	July	1	1	17	62	39	243
	August	0	0	31	115	17	53
	September	0	0	16	42	33	240
	October	1	1	13	95	18	50
	November	0	0	13	30	31	139
	December	2	3	16	102	17	43
2018	January	2	5	15	29	14	23
	February	0	0	1	2	3	8
SCS Opened							
	March	6	7	25	38	16	53
	April	19	58	53	122	43	93
	May	29	63	94	237	53	128
	June	11	11	99	181	59	83

Comparing the four months prior to the SCS opening and four months after, there is a clear pattern of increase in needle calls and actual needle counts (see Table 16), although the increases in the 500m and downtown Southwest zones may be indistinguishable from the drug crisis in general or from the weather warming up. It was unclear why the needle calls for service and retrieval counts are disproportionately low in February 2018. The 100m zone experienced a 16-fold increase in calls for needle pickup and a 17-fold increase in actual number of needles retrieved. The 500m zone saw a 6-fold increase in calls for needle pickup with a 3.5-fold increase in actual number of needles retrieved. The downtown Southwest had the lowest (but still significant) increase, with a 2.6-fold increase in calls and 1.7-fold increase in actual number of needles retrieved. Using the downtown Southwest as a standard then, both the 100m zone, and to a lesser extent the 500m zone, had significant increases in calls for needle service and actual needles retrieved, indicating that the 100m and 500m zones around the SCS had a much greater increase in improperly discarded needles.

Comparing April, May and June 2017 with those same months in 2018, there is a clear pattern of increase in the 100m and 500m zones, differentiating it from the downtown Southwest which only saw a modest increase (141%) in discarded needles. Since the weather was similar over April, May and June of both years (2017 and 2018), this comparison is useful to eliminate the impact of weather from actual impacts (see Table 17). Using the downtown Southwest as the standard comparator, the 100m zone was most heavily affected, with nearly a 60-fold increase in needle calls and over a 132-fold increase in actual needles retrieved between those months, one year apart. The 500m zone had increases in needle calls (8.8-fold increase) and number of needles retrieved (2.9-fold increase), but these increases were somewhat comparable to those in the downtown Southwest (6.5-fold increase in needle calls, and 1.4-fold increase in needles retrieved). Although the 100m zone is considerably smaller than the other zones, the proportional increase in needle debris would be something noticed by business owners/operators.

Table 16. Needle Calls and Counts, Four Months Before and After SCS

		100 Meter Zone		500 Meter Zone		Downtown SW Zone	
		# Calls	# Needles	# Calls	# Needles	# Calls	# Needles
2017	November	0	0	13	30	31	139
	December	2	3	16	102	17	43
2018	January	2	5	15	29	14	23
	February	0	0	1	2	3	8
	Total	**4**	**8**	**45**	**163**	**65**	**213**
SCS Opened							
	March	6	7	25	38	16	53
	April	19	58	53	122	43	93
	May	29	63	94	237	53	128
	June	11	11	99	181	59	83
	Total	**65**	**139**	**271**	**578**	**171**	**357**
	% Increase	1,525%	1,638%	502%	255%	163%	68%

Table 17. Needle Calls and Counts, April-June 2017 and April-June 2018

		100 Meter Zone		500 Meter Zone		Downtown SW Zone	
		# Calls	# Needles	# Calls	# Needles	# Calls	# Needles
2017	April	0	0	6	27	2	53
	May	0	0	5	38	4	24
	June	1	1	17	124	18	138
	Total	**1**	**1**	**28**	**189**	**24**	**215**
2018	April	19	58	53	122	43	93
	May	29	63	94	237	53	128
	June	11	11	99	181	59	83
	Total	**59**	**132**	**246**	**540**	**155**	**304**
	% Increase	**5,800%**	**13,100%**	**779%**	**186%**	**546%**	**141%**

The ARCHES needle pickup service is a highly valued service in our community. Respondents in the survey, and participants in the focus groups, were all very supportive of and grateful for this excellent service.

EMS Ambulance Callouts

Emergency Medical Services (EMS) calls were used as a proxy measure for social disorder and were analyzed for the study from November 2017 to February 2019. There were 460 callouts with missing location values so these cases were omitted from analysis, resulting in 3,092 cases remaining for analysis. Seniors' residences and lodges (n=9) were also omitted from analysis as these locations would skew the data because seniors tend to have greater need for health services. One hotel was excluded because the fluctuating population was not local. ARCHES, the Lethbridge Public Library, and the Homeless Shelter were identified and tallied separately, and included in the analysis but excluded from the study zone to which they belong (to avoid double counting). These data are in Table 18. (Locations were converted manually to categorical zone codes for analysis.)

Table 18. Number of EMS Calls by Study Zone

				Study Zone / Location			
Year	Month	100m‡	ARCHES	500m	Shelter	Library	Downtown SW*
2017	November	2	-	26	31	3	55
	December	3	-	31	37	2	72
2018	January	3	-	34	38	3	52
	February	3	-	34	47	5	56
	SCS OPENS						
	March	2	4	38	67	3	91
	April	11	11	38	52	3	72
	May	16	22	41	39	8	73
	June	8	35	48	61	4	90
	July	11	38	46	66	1	101
	August	7	36	46	54	3	95
	September	10	27	53	30	10	100
	October	14	33	50	47	5	89
	November	11	37	46	50	5	82
	December	6	28	25	26	7	78
2019	January	12	17	53	26	4	64
	February	5	19	40	33	2	70
	Total (%)	124 (4.0%)	307 (9.92%)	649 (20.98%)	704 (22.76%)	68 (2.2%)	1,240 (40.1%)

‡ Excluding ARCHES
* See Figure 2 for zone demarcations

The data reveals disproportionately higher EMS callouts to the downtown zone (40.1% of calls during November 2017 to February 2019), followed by the 500m zone around the SCS (20.98% of callouts) and the Shelter (22.76% of callouts). The rising numbers over 2018 are likely indicative of the drug crisis which is acutely seen in these zones.

Because the three zones (100m, 500m and downtown Southwest) were different sizes, data were examined proportionally. Proportionally, the downtown experiences 4.81 callouts, the 100m zone 4.13 callouts, and the 500m zone 2.08 callouts *per business address*, supporting the observation that there is more social disorder in the 100m and downtown Southwest zones per capita. Additionally, the 100m zone went from very infrequent EMS callouts (.083 calls per business address per year) to 3.76 callouts per address which is a significant increase (see Figure 33).
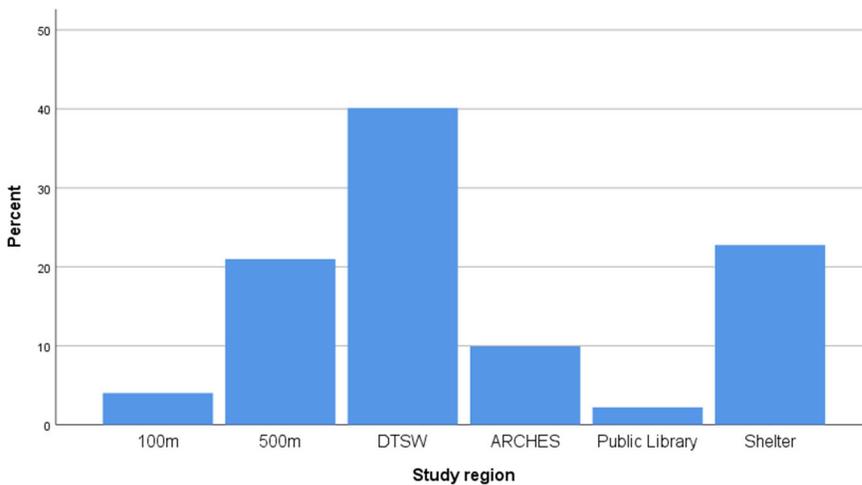
Figure 33. Number of EMS Callouts by Zone or Location

Priority Dispatch Codes were re-coded from alphanumeric codes to categorical consecutive integers for analysis. Codes with fewer than 15 calls between November 2017 and February 2018 were omitted from analysis to focus on the more common Codes. (This process may have contributed to bias, as many of the codes are overlapping conceptually. As well, callout codes do not always align with diagnostic codes.) These resulting Codes were analyzed by zone. Table 19 itemizes the type of EMS calls by zone, indicating the number of events by dispatch code category, and a breakdown of the percentage of the events by type. These data indicate a downtown beleaguered by a drug crisis, and a Shelter that provides temporary accommodation for people with complex needs.

Table 19. EMS Call Types by Zone

Dispatch Code Category	100m		ARCHES		500m		Shelter		Library		Downtown SW*	
	n	%	n	%	n	%	n	%	n	%	n	%
Unconscious	24	5.7%	10	2.4%	91	**21.7%**	36	8.6%	19	4.5%	239	**57.0%**
Unknown Problem (Man Down)	9	4.9%	5	2.7%	60	**32.6%**	10	5.4%	2	1.1%	98	**53.3%**

Dispatch Code Category	100m		ARCHES		500m		Shelter		Library		Downtown SW*	
	n	%	n	%	n	%	n	%	n	%	n	%
Sick Person (Specific Dx)	12	4.8%	12	4.8%	51	**20.3%**	68	**27.1%**	7	2.8%	101	**40.2%**
Alarm Protocol	1	1.4%	1	1.4%	38	**51.4%**	1	1.4%	0	0.0%	33	**44.6%**
Overdose or Poisoning	28	6.3%	73	16.4%	54	12.1%	169	**37.9%**	19	4.3%	103	**23.1%**
Cardiac or Resp. Arrest or Death	0	0.0%	8	12.9%	10	16.1%	14	**22.6%**	2	3.2%	28	**45.2%**
Assault or Sexual Assault	6	9.7%	3	4.8%	8	12.9%	18	**29.0%**	0	0.0%	27	**43.5%**
Abdominal Pain	0	0.0%	2	4.8%	4	9.5%	26	**61.9%**	0	0.0%	10	**23.8%**
Falls	3	2.0%	1	0.7%	48	**32.7%**	19	12.9%	2	1.4%	74	**50.3%**
Breathing Problems	1	1.5%	0	0.0%	17	**25.8%**	18	**27.3%**	2	3.0%	28	**42.4%**
Traumatic Injuries	1	1.4%	3	4.3%	12	17.1%	33	**47.1%**	0	0.0%	21	**30.0%**
Chest Pain (Non-Traumatic)	2	2.0%	3	2.9%	19	18.6%	32	**31.4%**	1	1.0%	45	**44.1%**
Psych / Behaviour / Suicide Attempt	7	9.3%	9	12.0%	15	**20.0%**	15	**20.0%**	3	4.0%	26	**34.7%**
Hemorrhage or Laceration	0	0.0%	1	4.5%	2	9.1%	11	**50.0%**	1	4.5%	7	**31.8%**
Seizures or Convulsions	2	4.3%	5	10.6%	5	10.6%	13	**27.7%**	0	0.0%	22	**46.8%**

* See Figure 2 for zone demarcations

When explored by event category and zone, the 100m zone around the SCS (and excluding the SCS) was the only study zone (comparing 100m, 500m and downtown Southwest) that ranked overdose as the leading cause of EMS callout, since the dramatic increase in dispatches from 2017 to 2018 (Figure 34). The 500m and downtown Southwest ranked 'unconscious' as the leading cause of EMS callout. These rankings of main causes for EMS dispatch are in Figure 35.
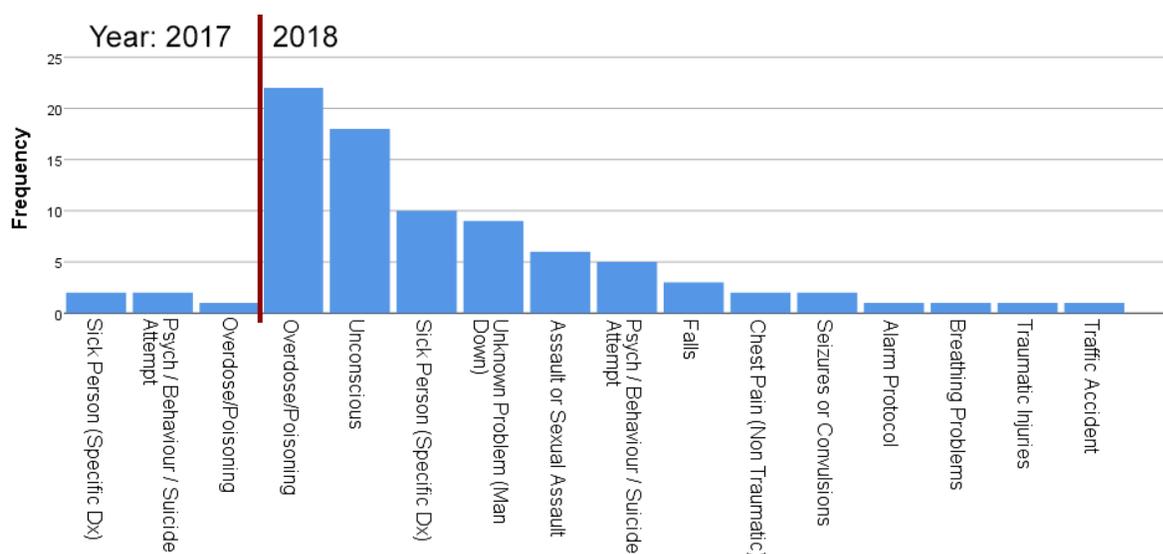
Figure 34. EMS Dispatches to 100m Zone, End of 2017 and All of 2018

Study region: 100m

Study region: 500m

Study region: DTSW
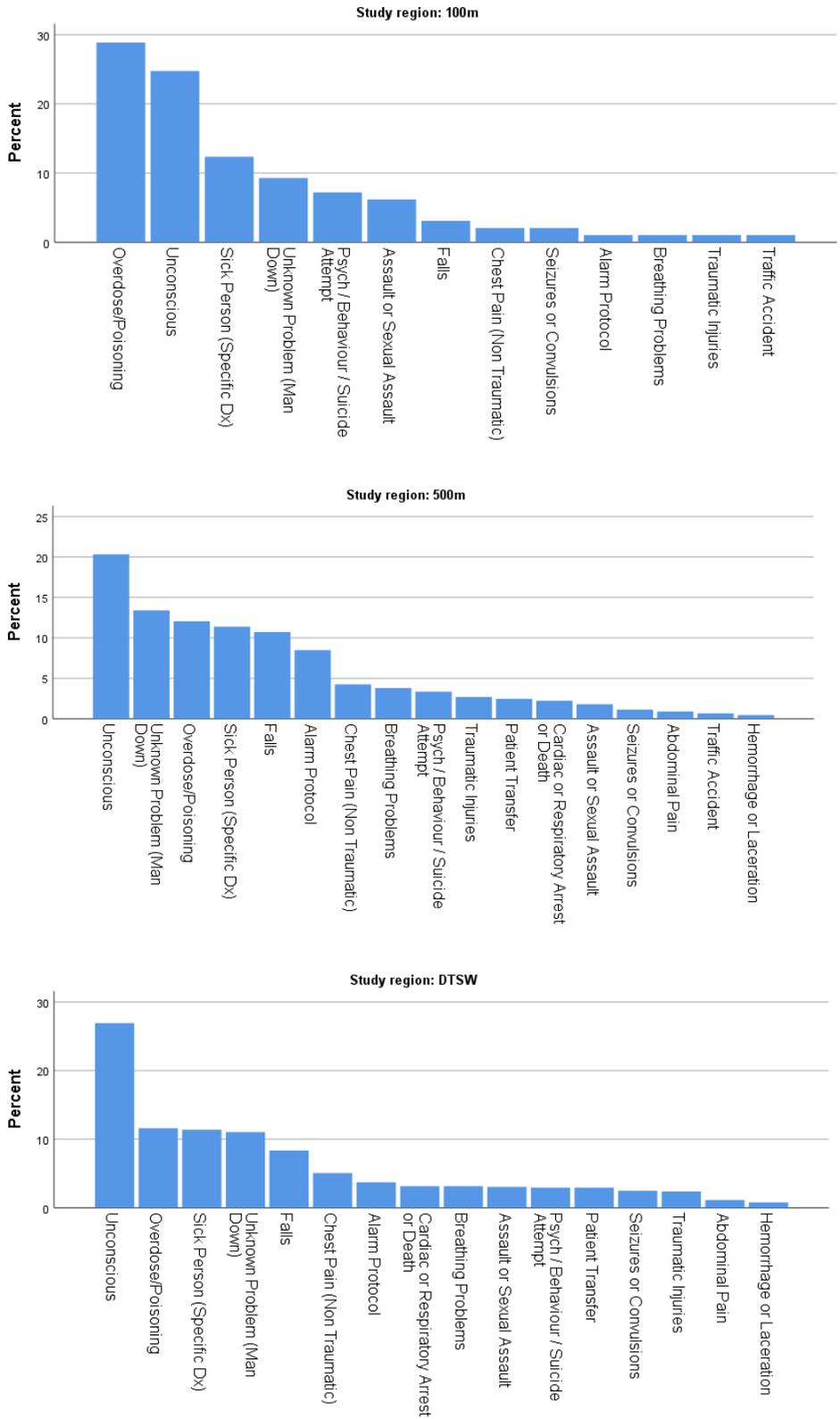
Figure 35. Rank Order of EMS Dispatch Codes by Zone, 2018

Focus Groups

A focus group was conducted, comprised of 10 business owners/operators from the 100m zone. Participants were invited in person by the principal investigator. Managers and owners who could not be reached in person had a letter left at the business with contact information. The focus group was held at the University of Lethbridge's Penny Building downtown.

Participants ranged in age from 28 to 65 and were responsible for a wide range of business types, including repair shops, bars, restaurants, health care and household goods and appliances. Several themes emerged from the qualitative focus group data (see Table 20). Each theme is discussed below, including direct quotes from participants.

Table 20. Themes from 100m Zone Focus Group

Themes
Perceived evacuation and ghettoization of the neighbourhood
Social disorder inciting apprehension, uncertainty and fear
Antisocial behaviours diminishing quality of life
Disorder in physical environment
Misuse of public and private space
Compromising business/service
Inability to act and not being heard
Mitigation strategies are helping
Process issues in siting the SCS

Perceived evacuation and ghettoization of the neighbourhood

Focus group participants described a previously stable and quiet neighbourhood that has rapidly changed.

> "It was a great place to be. Easy access. You're off 3rd Avenue. People can come in off 2nd."

> "Prior to the site going in, there were no vacant building in our neighbourhood. Every place was occupied. Now if you travel through our neighbourhood, there's property kitty-corner--it's vacant. The price was just reduced. They have no [potential occupants]."

> "…the other restaurant is moving. Catholic Charities right beside the site is empty. The bike shop…disappeared overnight."

> "No one wants to be there, no one wants to buy buildings there, nobody wants a business there. It's just negative, negative, negative, negative, 24 hours a day."

Participants described a business neighbourhood in which people used to go for walks and even walk their dogs:

> "People used to walk their dogs [here]. Now nobody walks around [except] security, drug addicts, and the guys in the yellow vests."

> "There's nobody walking around here anymore."

Participants expressed the concern that the area was devolving into a "shithole" and skid row district akin to Main and Hastings in Vancouver. Participants expressed dismay over the current state of the neighbourhood, and attributed its downfall to the siting of the SCS there:

> "It's killed the neighbourhood. It has absolutely killed it."

> "No one's there to help you and something has to be done or we're just going to be a ghost town."

Participants were asked to articulate how they could correlate the negative events with the arrival of the SCS and not with the socioeconomic downturn, the end of a recession, the drug crisis in general, or high rates of homelessness. They indicated:

> "The problems in our neighbourhood did not exist before the site. That's my answer. We've been through recessions and economic downturns before."

> "I've been there since 2001, so 18 years, and we never had an issue with tons of garbage, then it was an issue overnight."

> "I've been there 18 years and I mean …I never saw one person who [was] intoxicated or high in the whole time I've been there until the site opened. I don't think I ever saw that once."

> "I've been in business as long as some of these guys here too and I've seen those [downturns and recessions]. I have been in business there for 19 years so I know single downturns, I've seen the ups and downs in the neighbourhood. Never have we faced challenges as business owners as we are facing now."

> "Well you can imagine going from seeing nobody intoxicated or drug-induced until all of a sudden it's a daily occurrence of several dozen and that's just what I see."

> "[There's] the prostitution there, the drug dealing, the thefts, the violence that's going on and stuff like that. Basically, that was not there before that consumption site. At all."

There was some nostalgia for the days when the main substance of choice was alcohol and the population somewhat consistent, so that relationships could be formed:

"I actually caught myself saying the other day that I kind of missed the days of dealing with the old homeless drunk guys because they were easier to deal with than the [people] that are out there right now that are whacked out on meth or heroin. I miss the old days where you'd sit the old boys down and give them a coffee and say, 'Okay it's 30 below, warm up, but stay here and then head out the door.' But you can't do that with any of these other guys. So, it's kind of funny…"

Social disorder inciting apprehension, uncertainty and fear

Participants described a high level of social disorder in the neighbourhood that was both distressing to watch and fear-inducing. Sometimes they or their customers had encounters with people that were angry or high, sometimes individually or in groups as small as two or three or up to over a dozen people in various states of inebriation or distress:

> "I have people on my corner who would actually have to stop on the street for 5 minutes while a myriad of drug addicts ran across the street. So we just sit there. You can watch them out of the window."

Participants described a wide range of antisocial behaviours that made the neighbourhood feel unsafe, such as "guys freaking with their arms in the air, yelling, in the middle of the street." To keep staff feeling safe, and to prevent problematic encounters with people who are high, many businesses now keep their front door locked at all times, even during open hours. The sudden change in neighbourhood composition, and the unpredictable behaviours associated with particularly crystal meth use, had many participants altering their work behaviours to enhance their sense of safety:

> "…the door gets locked. And, of course, that never ever happened before but since the site's been there there's a couple of times where people come in unannounced, unexpectedly and quite dramatically. We just can't have that happening."

> "…when they're wired on meth, they have so much power, you're scared of them. I mean it's just scary."

Participants described customers being afraid to come in to a service or business because of the social disorder that makes people feel threatened. Participants described how the discomfort that customers and clients can experience, due to the social disorder in the area, is negatively impacting the service/business:

> "…a 74-year-old woman, who was terrified and would not get out of her car. Even though the people had moved, they were still about 20 yards away. She would not get out of her car." (This participant ended up escorting the woman into the business.)

> "When your customers are made to feel that uncomfortable, when the environment has changed so dramatically they're afraid to get out of their vehicles…. People can say it's irrational but I don't believe that for a second. That's a problem. It's a major,

major problem, and that was never the experience until the site opened. Not ever were people uncomfortable getting out of their cars and now it's probably close to a daily experience for at least somebody in our office because there's people that are hanging around."

Some participants describe how customers cars have been broken into and windows smashed, which is negatively impacting business because customers cannot conduct their business and enjoy the services they once did. Overall, participants described what was once a quiet business district now feels unsafe. Some business owners described an inability to keep staff, as some staff—some new, some long-term—are afraid and resign.

"Shortly after the site opened, I had just hired a young lady. The site opened and she was accosted. She came to me after 3 months [and] said, "'I really love my job but I'm afraid. I've had a few people approach me and I'm afraid that somebody's going to hurt me.'"

A nearby business was described by a participant as having trouble finding staff, because the people who use drugs:

"… they go into his place, they hang out, they panhandle, they come in drunk and high. If you ask them to leave, they sit outside on the sidewalk. Customers won't go in and I mean it's younger girls and guys that tend to work [there] and he's having a lot of difficulty getting people to come there. He's even considering closing."

Participants described encountering unusual situations and being increasingly vigilant:

"There was this old motor home parked in the parking lot. I'm sitting outside and I'm [thinking] this looks creepy. It's just an old motor home and I see the guy get out... He looks over and he goes, and then I see two girls get in and I thought, 'Do I phone somebody?' This just isn't right."

Participants reported that they are having to adapt how they conduct and operate their business, to accommodate how the neighbourhood had changed:

"I sit in my office upstairs and instead of worrying about how things are going downstairs within the building, I'm too busy watching my security cameras to see what's going on outside my building or what's coming into my building, because I can see them across the street… [The] come right into the building and then my staff have to go and confront them to get them to move on. We've found a few tricky ways that we can do it without getting confrontational but we've had to adapt, we've had to modify our behaviour and our lifestyles and our businesses because this thing showed up in our neighbourhood."

"This is not your regular business problem that you have to deal with. …I've got to spend most of my shift … watching what's coming and going. I've got to watch people doing drugs in the back. Are they going after my customers out there for

money or anything? What's going on? A couple of years ago, I didn't have to do that."

Antisocial behaviours diminishing quality of life

Participants described a wide range of antisocial behaviours exhibited by people who frequented the SCS. They described high rates of drug dealing, trespassing, panhandling, and sex work. Some participants had had a number of individuals overdose on their property. People relieving themselves in public was a particularly distressing situation:

"They unzip right in front. They don't try to hide or anything. They just stand there and pee. Just right there."

"At one point it smelled like a sewer back there because they would come out of [ARCHES], they didn't have bathrooms, so they just come right out there and they just pee right there."

Behaviours associated with active drug use were also described by participants as problematic.

"There's people that come out of that site and they are so jacked, they're pretending to fly or whatever. What do they do? They go into the back alley and do it again and the site is allowing that type of person to leave them."

"They were behind my shop doing drugs back there and so I just go out and I just try to shoo them on… I come out and I look and he's still there. He won't leave. Well, he grabs something off the ground and he comes at me with a piece of metal or something."

"Two security guys were trying to take down this one guy. They couldn't take him down. They called the cops. Five cop cars showed up; they were there right away because the security guards were getting their asses kicked by one little tiny guy. He was on PCP or something. It wasn't meth."

"The front grass must have a thousand cigarette butts in it. We always take them out. They can see themselves in the glass so they all strip naked and stuff in the middle of the day and at night."

Participants also described how prior to the SCS, vehicle break-ins and vandalism were infrequent but had escalated sharply once the SCS was operational:

"I left a nickel on my console and the first one started there, smashed a window for a nickel, and then every vehicle that has been smashed and a lot of vehicles stolen in the middle of the day."

Finally, criminal events were also described as more frequent since two years ago. One participant described his car being stolen from behind his business:

"I hear my car start. I go out, there's some wacked out guy in my car and he makes it about six blocks and runs into somebody, smashes the car up and so they phone the police, hit and run, described my car, he made it out on the highway and he finally ran out of gas. The cops got a hold of him and he was so drugged out, they took him to the hospital. I think it was because he was on drugs, they just kind of let him walk and of course my insurance didn't cover my car because I didn't have theft on it so it just constantly costs everybody money."

Disorder in physical environment

A major concern for participants was the amount of litter and debris deposited around their businesses:

"[They have] parties, basically leaving drug debris and stuff all around the properties. The ARCHES group have been pretty good about getting that stuff out of the way before we get there."

Participants valued the clean-up program, and said that before ARCHES gets there to clean up the debris, it looks "horrible" and is "just disgusting". Participants wished people would deposit debris and trash in garbage cans. However, many of the garbage bins are locked to prevent people from rummaging in them and spreading more litter around:

"The whole place is just littered with garbage. Why don't you know to put your garbage in the garbage can? They just walk by and they … throw their garbage. It just infuriates me."

"I get that a lot too behind my place there. They'll get their goody pack from the ARCHES place and they'll walk around the back and they'll tear it all apart and they just leave all the garbage on the back parking pad and everything back there and then away they go, and my dumpster is like *right there*. Walk ten steps and throw it in the dumpster. I wouldn't mind as much, but I mean it's every day."

Littered items include discarded garbage, wrappers, 'party packs', cups, saucers, candy wrappers, clothes, shoes, and condoms. Participants also reported cleaning up vomit, defecation, and urine. Needle debris was reported by participants to be fairly well managed by the ARCHES and Clean Sweep programs dedicated to needle management:

"I was there before it opened [at the] beginning of 2018, and I've been there 17 years now…. I can count on one hand the numbers of needles I found in all that number of years. Now, you find more than that every morning in the parking lot."

Misuse of public and private space

Participants described how public and private space was changing in its quality and usage. One business owner described how the nearby green space was trampled and destroyed, so the City allowed this business owner to pave it. Another described how a public payphone for his customers had to be removed:

> "We had to rip out our payphone out of our business … because they were coming over and setting up their drug deals there and then meeting their clients out in front of [our business]."

Participants also described how other private property was destroyed:

> "We used to park all our work trailers in the back there and then they just started destroying it. We had guys working on the roof and they looked down on top of the trailers and there's this bag with 3 long guns, a sword and a whole bunch of drugs, on top of the trailers."

Trespassing was also described as an issue, with scores or even over 100 people trespassing over night at one business.

Participants described a marked increase in people stopping in their business to use the washroom, which is generally forbidden because washrooms are often used as substance use sites and overdoses occur:

> "I said, 'Sorry ma'am,' and she's like, 'Oh you're a snot,' and walked out. And then she scooted across the road and peed in [name of business] parking lot."

Compromising business/service

Participants described feeling frustrated that, despite having been in business in the area for decades, now that the neighbourhood had changed their business was declining:

> "So it's difficult, because people may be very happy with your service and your product but when they're made to be that uncomfortable, they are not going to come to you. So you can provide the best service, the best environment inside the door, but if they aren't comfortable leaving their vehicle, that's a problem."

Some participants described a considerable slow down in business:

> "You started seeing business just kind of slowly slow down, slow down, slow down, like the last few days you get days … I've been in business 40 years, I get days where nobody comes in at all."

> "I get a week without customers coming in."

"[Name of business] is down [business] 90%. And they're moving. They're also moving."

Participants expressed concern that their property values were falling, as indicated in decreased values in the City's tax assessments, and diminished valuation by professional appraisal. Participants conveyed dismay that despite these decreasing property values, their taxes continue to rise:

"I know that I'm going to have a hell of a time selling my building if I decide that I'm just going to walk. So I'm going to have to sell my building for less than I bought it for, probably, so I'm going to lose money there. But then on top of it all, my tax bill for the city keeps going up because it's the annual increase. We just have to add that on there, so my tax bill is going up but because they ramrodded this thing into our neighbourhood, my property values are going through the floor."

Some participants felt that their work was becoming futile and their losses too great:

"Why should I work 40 years and lose $100,000? Well why? What am I getting out of it?"

"Me and my family have been there since 1945, and I built that building years ago. I used to walk into that building and go, *I'm proud of this place, I'm proud of …* now it's just *I hate coming to work.*" [to which another participant replied: "And see that's not right. This shouldn't happen to us. This is just not fair."]

Inability to act and not being heard

Participants described feeling frustrated that they are unable to improve their situation, even on a case-by-case basis:

"I just want them off my land. I don't want to have to take the time constantly, interrupt work, and try to phone the police. The last time I phoned the police, they want to take you through a two-page questionnaire and I had a guy dying behind my building."

"I told [the police] my story. Right away it's like, 'No you cannot be aggressive towards these people. You cannot be aggressive. Do not do that to these people. Leave them be, phone us.' That's all they can say. I have no rights."

Participants described feeling powerless to act to improve their situation, and how they struggled to accept that this state of social disorder was their new normal:

"Now we're all used to it, just a common thing happening all the time now. Now we're all used to it. It happens all the time. Whereas, two years ago, it happens and you go, *oh my God what happened*? Now it's like, *well it's just normal life now*."

"This is not normal. It's not normal."

"It's unacceptable that there's needles in the park, and I need a mayor to say, 'Yeah, you know, it's unacceptable there's needles in the park.' It's unacceptable that our neighbourhood has become unsafe and it's becoming rundown because of the site. That is unacceptable. We need to fix this thing. Let's work together and fix it so people don't have to check needles in the park. It's unacceptable. But he says, 'Well guess what, you're going to have to check the park for needles now.' That is bullshit. Whatever happened to 'Let's fucking take it back'?"

"We're being told to get used to it. This is the new normal. No, it's not. I'm done with that. It's just I'm sick and tired of being told that this stuff is the way it is now. It's not okay, nor should it ever be."

Participants felt ignored and silenced, particularly by City administration:

"Why kill all these businesses? I don't get it. And no one cares. Nobody does anything. You've just got to deal with it yourself. And we don't want to go to these meetings constantly but we have to if we want to survive."

Participants were concerned that the City has turned a wilfully blind eye towards the community impacts and that City representatives are misrepresenting the issues:

"The site didn't work out the way we thought—can they not see that? Of course they can. It hasn't worked out the way anybody thought it would and now they're just trying to keep the genie in the bottle — until somebody gets hurt and killed."

Participants also felt it was disingenuous of officials to maintain that they were 'saving lives' when they felt their livelihoods were being sacrificed for the cause, pitting lives against livelihoods. When probed about why they thought their livelihoods and investments were not being protected, they responded:

"Because you're not going to die because of going broke."

"It doesn't matter that you've spent 40 or 50 years to get to where you're at. That means nothing. We're going to save this guy's life 5 times in a week. He's not gonna make it the 6th time."

Mitigation strategies are helping

Participants believed that the mitigation strategies (Table 1) had "absolutely" improved the situation and that it is much better than it would be otherwise:

"If those guys weren't monitoring it, it would be all hell. You would have us against them. They're the buffer, keeping me in my chair and not killing them."

"They're all helping out but they're throwing hundreds of thousands of dollars out there."

"If they didn't do it, it would be remarkably different."

"They're getting rid of the debris that if it wasn't picked up every single day, it would be awful. It would be awful."

However, the participants were concerned that the City had not done enough to mitigate the issues:

"The City knows there's increased risk and yet they do not have a dedicated police force that patrols that area in terms of a visible force. Unmarked cars are fine but it doesn't stop things from happening. If you had a visible presence, that's a bigger deterrent than an unmarked car. So here we are as businesses and as people relying on 18-year-old and 19-year-old security guards who have a week of training because they've had 80% of their staff quit because of stuff going on at the site, this increased gang activity…"

"So here we are depending for our literal safety on a security force of basically untrained individuals when the police know damn well the perceived increased risk and the real increased risk is around that site and they don't do anything about it."

"That security guard thing is a joke too because they're scheduled to go around every 45 minutes or half an hour or whatever it is, and say what you will about them, but the junkies aren't stupid. They watch and they see their patrol. Like, okay, well they're going by now, we've got 45 minutes to ransack and do whatever we gotta do before they're back around again. They know what they're doing and they don't care."

Participants also acknowledged that ARCHES' foot patrols must keep going further beyond their service boundaries to address the expanding social disorder footprint.

Process issues regarding siting the SCS

Participants described feeling like they were "sold a bill of goods" that did not deliver. Participants indicated that they were told that an SCS would not have any negative impact on the neighbourhood and that there would be no drug use in the area:

"I go back to my interaction with [name] who is saying how it's all going to be pie in the sky. 'Drug use? Why would there be debris? They have a site right here they can use.' I don't know, because they take drugs. Is that rational? Why would they be rational after [taking drugs]?"

"It's just a gong show… We were told it's going to be all, like the previous research says, it doesn't have a negative impact on the community. And she was telling me,

all these studies show this and that we were being too…alarmist. 'All these studies have shown this and this and all these European things and I've been to Europe and I've seen them and they're wonderful and they're this and that.' So whether they truly believe that or not is another matter. Like I said, either by ignorance or deceit, neither one is right."

"We were all told, in the paper and in person, that there was a mandatory supervision time of 15-20 minutes afterwards. Then, it magically came out that, 'Oh no, we can't do that because we can't detain them.' And yet they have a code of conduct that they all have to sign before they can use the site, which says they're going to stay for 15 or 20 minutes for observation because the whole point of this is so we can observe people after they use. [But] now it's just to say they can use and can come and go as they please. So there's none of what they said was management initially, how they sold it to everybody, publicly and privately and what they told us all. It's not run like that at all. It's not what happens there."

While business owners were supportive of harm reduction services, there was significant concern about the impacts on their substantial investments into their livelihoods, which they felt were being threatened.

Discussion

The purpose of this study was not to determine *if* supervised consumption should be a public health service in Lethbridge, but rather, to explore any unintended consequences of these services on the surrounding neighbourhood. The data indicates that members of the business community are increasingly observing antisocial behaviours and environmental factors that detract from a previously positive experience in the downtown areas of Lethbridge. This experience was not completely consistent between all adjacent businesses, which suggests that observing, perceiving and experiencing social disorder is impacted by other factors, such as the type of business it is and individual characteristics, among others. Social disorder is a social construct that is perceived differently by different people, and people with different demographic backgrounds and life experiences may have sharply differing perceptions of the same social and environmental conditions, which further muddies the waters of measurement (Hinkle & Yang, 2014). The current drug crisis—and underlying social issues that continue to fuel it—is having a clear impact on those who live, work, or conduct business or social activities in the downtown areas of Lethbridge. Businesses are impacted in numerous ways by the drug crisis: economic viability, enjoyment of the neighbourhood, sense of security, and altered social interactions.

There were widespread impacts related to the drug crisis in general as well as impacts in the 100m vicinity of the SCS. Overall, the 100m zone had the sharpest increase in some antisocial behaviours, followed by the downtown zone; the 500m zone had considerably lower levels of antisocial behaviours overall. What remains unclear is the degree to which the 100m zone effects are due to migration of clientele to the SCS or due to a concentration of that foot traffic into a single area around the SCS. These impacts in the 100m zone were problematic for the business community and particularly noticed because the area had had little action prior to the site opening. Either way, antisocial behaviour and social disorder make people feel unsafe, sometimes independent of actual risk. It can be hypothesized that the various mitigation strategies (see Table 1) suppressed many of the items assessed in this study, although not to the point of complete elimination. Certainly, the respondents and participants in this study thought that the many mitigation programs were very valuable, although they also thought these programs could be improved.

While in general, the 100m zone had the sharpest increases in antisocial behaviours, followed by the downtown Southwest, this trend differed when it came to needle calls for pickup. The 100m zone had the highest increase in improperly discarded needles, followed by the 500m zone and the downtown Southwest. Using the downtown Southwest zone as a control or comparator, the 100m zone was significantly impacted by an increase in discarded needles, and to a lesser extent the 500m zone (similar to but greater than the downtown Southwest).

What is also unclear is whether people are willing to travel any distance to use the SCS. The fact that in general antisocial behaviours were highest in the 100m zone, followed by the downtown Southwest and then the 500m zone, suggests a sort of buffering effect—that people who want to access the SCS generally come from within the 500m radius of the site. This theory is also supported by the needle discard data, but is not definitive. Similarly, it is unclear why people who use substances would choose to do so in the Public Library, even though the SCS is within 500 meters (walking distance).

Previous studies that explore the impacts of SCS demonstrate that SCS have few, if any, negative impacts on their surrounding neighbourhood and enhance the immediate neighborhood by reducing public drug use and public disorder (KPMG & NSW Health, 2010; E. Wood et al., 2006). The experience in Lethbridge has differed somewhat in this regard. In Lethbridge, there was a statistically (in many cases) and practically (in others) significant increase in some antisocial behaviours and discarded needles near the SCS. However, this is also not unexpected, given two important considerations. First, prior to the SCS, this neighbourhood was largely a bar and club district, active mainly in evenings and nights (especially on weekends). As such, some of the increase in antisocial behaviours can be explained by the fact that there was little opportunity for the scale of antisocial behaviour that would be seen with a 24/7 service that draws a large group of disenfranchised individuals into its care. In other words, in some ways there was bound to be a difference from before the SCS opened to after.

Second, the KPMG and NSW Health (2010) report of the Kings Cross SCS in Sydney, Australia and the E. Wood et al. (2004) publication reporting Vancouver's lack of negative impacts around that SCS both have several characteristics that differentiate it from Lethbridge. Both Sydney and Vancouver are very large urban centres that have distinct 'skid row' and red-light districts. Both cities are major centres, with Sydney having a population of 5.23 million (as of 2018) and the city of Vancouver having a population of 675,218 (as of 2017)[3]. Vancouver is one of the most densely populated cities in Canada, with over 5,400 people per square kilometer. Its infamous downtown Eastside ("Main and Hastings") represents an historic neighbourhood that began as a bar and seasonal worker district and has become an entrenched open drug scene that is unique in all of North America for its density of poverty, mental illness, drug addiction, homelessness and HIV/HCV rates. Lethbridge, on the other hand, is a small city that is considered a rural centre by many definitions. With a population just over 100,000, there are some places in Lethbridge that do have more social disorder occurring; however, this disorder has not been highly concentrated in an historical skid row district. This concentration of people with complex needs into one or two areas is fairly recent. Because of these notable differences between Sydney's SCS experience (KPMG & NSW Health, 2010) and Vancouver's (E. Wood et al., 2004), caution is needed when generalizing findings to other contexts that lack similar features and defining histories. It could be posited that because Lethbridge is a small urban or even rural centre it may experience the drug crisis—and its solutions—differently as well. Jenkins and Hagan (2019) describe how rural and urban contexts differ in resources and social structures and as such, these contexts require solutions appropriate to each.

An additional complexity in Lethbridge is that it is a regional service hub for several rural communities in Southern Alberta, including two First Nations communities, one of which (Kainai Nation) is the largest reserve by landmass in Canada. Small rural communities often face considerable resource constraints, particularly in the social services sector (Browne et al., 2016; Komiti, Judd, & Jackson, 2006; Timko et al., 2017). Additionally, people who use substances often face considerable stigma in their rural communities (P. Wood, Opie, Tucci, Franklin, & Anderson, 2019). Both of these realities may result in people who use substances (or who require substance use services) moving to Lethbridge from their home communities, although the present study does not explore the degree to which this is the case in Lethbridge. The Lethbridge SCS

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[3] The Greater Vancouver area had a population of 2,463,431 in 2016.

(ARCHES) is one of the busiest in the world, which seems disproportionate for the size of the population. This warrants further investigation into the causes of Lethbridge's immense need.

The antisocial behaviours and some of the environmental factors described in this report cannot be unequivocally and entirely attributed to the SCS, due largely to the small sample size and an ongoing drug epidemic. However, it is not unreasonable to consider that drawing a diverse group of disenfranchised individuals with complex social and health needs into a single service, the primary focus of which is to reduce the harms associated with problematic substance use, would result in a rise in antisocial behaviour and clashes with those businesses who have been in that relatively quiet neighbourhood for between 2 and 85 years. Other research has identified that when diverse groups of people with widely differing values, lifestyles and behaviours (some of which is perceived as threatening) are forced into ongoing contact, tensions can arise (Baum et al., 2015). Similarly, in the case of Lethbridge, the heterogeneity of the study population (business staff and visitors to the neighbourhood with different values, behaviours and lifestyles) contributes to elevated observations and perceptions of antisocial behaviour (Sampson & Raudenbush, 2004, 2005; Taylor et al., 2010).

The respondents and participants in this study were not opposed to harm reduction or supervised consumption, per se. There was, in fact, a range of support for these services. However, particularly in the 100m zone around the SCS, many individuals were concerned that their substantial investments into their livelihoods and into the Lethbridge community were significantly threatened by their proximity to the SCS and by the antisocial behaviours demonstrated by the clientele of the SCS, including threatening behaviours, public urination, vandalism, and public drug use. In general, people can accept harm reduction, given appropriate information; but they cannot accept a real or perceived threat to their personal, familial, material or commercial interests. This perceived threat (of negative impacts) is more acutely experienced the closer one is situated to the area in question. This tendency reflects the proximity hypothesis: those nearest a controversial development are most likely to reject it, since they bear a disproportionate burden of any negative consequences from it. Individuals further from the area, and thus largely removed from most or all negative impacts, are more likely to be supportive of it in theory. While the rest of the city benefits from localizing a social issue into a single neighbourhood, the area around the site disproportionately bears the burden of improvements seen elsewhere in the city. This situation warrants redress at the civic level.

Limitations

The findings of this study are not intended to diminish the value of SCSs and should not be used as evidence to indicate whether or not supervised consumption services have a place in the continuum of care. Rather, they provide context to a social problem and to an approach to address that problem. Overall, the findings point to the need for system-wide and community-based solutions to the social and health crises of problematic substance use.

This study has several limitations. Convenience sampling may have led to both response bias and non-response bias. This survey captured a relatively small proportion of business owners and operators in downtown Lethbridge. The longitudinal nature of the study over the course of a year resulted in participant dropout and survey fatigue which resulted in attrition bias. Study zones were unequal in size and population, which was accounted for in analysis but nonetheless detracts from the study. This Survey collected respondents' perceptions of antisocial behaviour and social disorder, which may be subject to intrinsic biases. The focus group was by invitation and several people came forward to participate; however, the principle investigator was made aware of one prospective participant who was unable to contact her for unknown reasons. She reached out to this individual but did not hear back. Thus, the focus group data may be biased with negative opinions when any number of positive opinions were not heard.

Several mitigation programs were implemented over the course of the study year to address environmental and social concerns of the business community; however, the Survey data was not granular enough to be able to control for those service additions. While we know which strategies were implemented when and by whom, the study data is not granular enough to pinpoint the impact of these strategies on changes to antisocial behaviour or environmental events. It can, however, be assumed (and the participants agreed) that these mitigation strategies suppressed some of the negative impacts.

Since Lethbridge is experiencing a drug crisis, not unlike other cities in Canada, the increasing incidence and prevalence of drug use is largely inseparable statistically from the impacts of the SCS on drug use. Additionally, it is not known what percentage of people drawn to the SCS are from Lethbridge or are newly arrived in Lethbridge to attend various services. The number of homeless people in Lethbridge has also seen an increase over the past couple of years, and it is unclear the degree to which the SCS is drawing this population into the 100m zone from other parts of town or from other communities.

Several confounding variables tend to detract from previous research as well as the present study. First and foremost, the impacts of a worsening drug crisis are inseparable from the real and perceived impacts of the SCS. Additionally, the quantity and type of drugs in circulation impacts the antisocial behaviours seen on the street. Uppers like crystal meth, which seem to be eclipsing downers like opiates (fentanyl, etc.), lead to more erratic behaviours and require more frequent use than do downers. Opioid use is flattening but the reason for this change is unclear: it may be a supply issue, people may be more hesitant to use opioids and have turned to meth as a safer high, or perhaps people are finally getting the help and treatment they need.

Changes in police deployment around the SCS have also been shown to alter needle discard patterns and emergency medical services use (Romanski, 2013; Tieu, 2011). Due to many harm reduction efforts—as well as programs to mitigate unintended consequences—being implemented throughout the past couple of years, any changes in environmental factors cannot be attributed solely to the SCS.

The Survey did not ask for business respondents to indicate their type of business (i.e. NAICS category). This information might have explained some of the variation in Survey item scores, as some business have greater interaction with the public through storefronts and through clients or customers attending the business. These businesses may have experiences that differ from those without this type of public interaction.

The changing weather was responsible for some of the variation in mean scores. Warmer weather naturally resulted in more antisocial behaviours and foot traffic, while melting snow revealed drug debris previously concealed by snow. Additionally, it is unclear the degree to which changes in antisocial behaviour was more *visible* versus more *present*.

Another limitation of this study is that a major source of data was consistently denied by the Lethbridge Police Service, resulting in some of the research questions going unanswered. While the Police did eventually provide a very short document, it was unusable as a data source. While the findings of this study are supported through triangulation of data types and sources, the author cautions that the data is incomplete due to the failure of a key stakeholder to participate meaningfully. As such, the findings cannot be used in isolation for decision making.

Given these limitations, the results should be considered with equal parts caution and empathy. This complex social issue needs the cooperation of the entire Lethbridge community to address it and improve the downtown area and everyone's quality of life in our city.

Conclusion

While the public in general understands the merits of harm reduction services, there remains the question of unintended consequences of these services. Measuring the unintended environmental and behaviour outcomes of supervised consumption services is an important factor in siting and operating these services; however, it is also difficult to measure these impacts because there are so many factors at play (such as weather, individual and commercial factors, and mitigation programs).

The present study explored perceptions and observations of social disorder by business owners, supervisors, and managers in downtown Lethbridge. Members of the business community are increasingly observing antisocial behaviours and environmental factors that detract from a previously positive experience. Overall, the 100m zone around the site had the sharpest increase in some antisocial behaviours, followed by the downtown zone. Similarly, the 100m zone had the sharpest increase in discarded needles, followed by the 500m zone, compared to the rest of the downtown. These findings differ from previous studies which did not find any negative neighbourhood impacts caused by SCS, suggesting that context may be a significant factor.

Appendix A. Questionniare (Urban Social Issues Survey)

Urban Social Issues Study (Lethbridge)

Q1 You have been emailed a link to this survey because you own or manage a business in the area indicated below and previously consented to participate. The purpose of this survey is to better understand your experiences as a business owner or manager in this area, particularly as it relates to social problems, crime and drug use in the area.

This is the study area, extending from 3 Avenue North, up 13 Street North/South, to 6 Avenue South, and down Scenic Drive:

Q3 What is this study about? This is a research study looking at your experiences and observations as a business owner or manager in an area that has social problems (crime, drug debris and litter, open drug use, and threats to safety) around your business.

What is expected of you? The survey will take approximately 10-12 minutes to complete. You will be asked to respond to statements asking you how often something happens or how much you agree with them. You may choose to skip any question you prefer not to answer.

Thank you in advance for your participation.

Principal Investigator:
Em Pijl PhD, RN
Assistant Professor
Faculty of Health Sciences
University of Lethbridge

Q4 In the first two sets of questions, we want to know when the **last** time you, your staff or your customers saw or experienced several activities.

Please tell us if you **last** saw this activity:
- Within the last day,
- Within the last month,
- Within the last 3 months,
- More than 3 months ago (this data will be captured on another survey), or
- Never

Please be as accurate as possible, or the study findings will not be useful.
For example, if someone had a fist fight outside your business during the summer, report this by selecting the response "More than 3 months ago". If you report that it happened "Within the last 3 months," the researchers will not be able to determine seasonal trends.

The following questions will be repeated every 3 months for one year, which will capture seasonal changes in social issues.

Q5 In the **area around your business**, when did **you, your staff or your customers** see or experience the following activities?

Item	Within the last **day**	Within the **last month**	Within the last **3 months**	**More than 3 months** ago	**Never**
People using drugs in public					
People dealing drugs in public					
People drinking alcohol in public					
People being drunk or high in public places					
People urinating or defecating in public (alleys, stairwells, etc.)					
People loitering or hanging around the area					
People asking for money					
People stopping in your business just to use the washroom					
People selling sex					

Item	Within the last **day**	Within the **last month**	Within the last **3 months**	**More than 3 months** ago	**Never**
People having sex in a public place					
People yelling or fighting outside					
People sleeping on the sidewalk, in doorways or other public places					
People verbally assaulting, harassing or intimidating you, your customers or employees					
People physically assaulting you, your customers or employees					
Someone robbing your business during open hours					
People trespassing in the area around your business					

Q6 In this next question, we want to know when the **last** time you, your staff or your customers saw or experienced several environmental problems.

Again, please be as accurate as possible in your responses, or the study findings will not be useful.

The following questions will be repeated every 3 months for one year, which will capture seasonal changes in social issues.

In the **area around your business**, when did **you, your staff or your customers** see or experience the following?

Item	Within the last **day**	Within the **last month**	Within the last **3 months**	**More than 3 months** ago	**Never**
Garbage or litter lying around					
Discarded needles or syringes lying around					

Item	Within the last **day**	Within the **last month**	Within the last **3 months**	**More than 3 months** ago	**Never**
Discarded drug paraphernalia <u>other than needles</u> lying around					
Cigarette butts on the sidewalk					
Empty beer cans or liquor bottles					
Vandalism (something was damaged on purpose) to property or vehicle(s) (including theft from vehicle)					
Theft or attempted theft of property or vehicle(s)					
Break and enter, or attempted break and enter of business					
Unmaintained properties (e.g. broken windows, boarded up shops, weeds out of control)					

Q7 In this next question, we want to know **how safe you currently feel in the area around your business.** Please indicate how much you agree or disagree with each of the following statements:

	Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**
I feel safe **walking** in this area during the **day**					
I feel safe **in my place of work** during the **day**					
I feel safe **walking** in this area **after dark**					
I feel safe **in my place of work after dark**					

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I think my **customers/clients** feel safe **walking** in this area during the **day**					
I think my **customers/clients** feel safe **walking** in this area during **after dark**					

Q8 In your opinion, **over the past 3 MONTHS** has **crime** increased, decreased, or stayed about the same **in the area around your business**?
- ◯ Decreased a lot
- ◯ Decreased a little
- ◯ Stayed about the same
- ◯ Increased a little
- ◯ Increased a lot
- ◯ I don't know

Q9 In your opinion, **over the past YEAR** has **crime** increased, decreased, or stayed about the same **in the area around your business**?
- ◯ Decreased a lot
- ◯ Decreased a little
- ◯ Stayed about the same
- ◯ Increased a little
- ◯ Increased a lot
- ◯ I don't know

Q10 In this next section we want to know a little bit about your business.

 If you do not want to answer a particular question, just **advance to the next screen** or select "**Prefer not to say**".

Q11 When did you begin working in this neighbourhood/part of Lethbridge?
    Year (e.g. 2008)   _____
    Month (e.g. May)   _____

Q12 What is **your role** in the business? Select **all** that apply.
- ❑ Owner
- ❑ Manager
- ❑ Supervisor
- ❑ Staff

Q13 Which statement **best** describes your situation?
- ◯ I am at the business full time
- ◯ I am at the business part time
- ◯ I check in on the business occasionally
- ◯ I rarely check in but can be contacted by phone

Q14 Please click your mouse at the approximate location of your business. This locating is necessary so the researchers can find the areas that have issues and track these issues over time and so that extra resources can be deployed to problem areas.
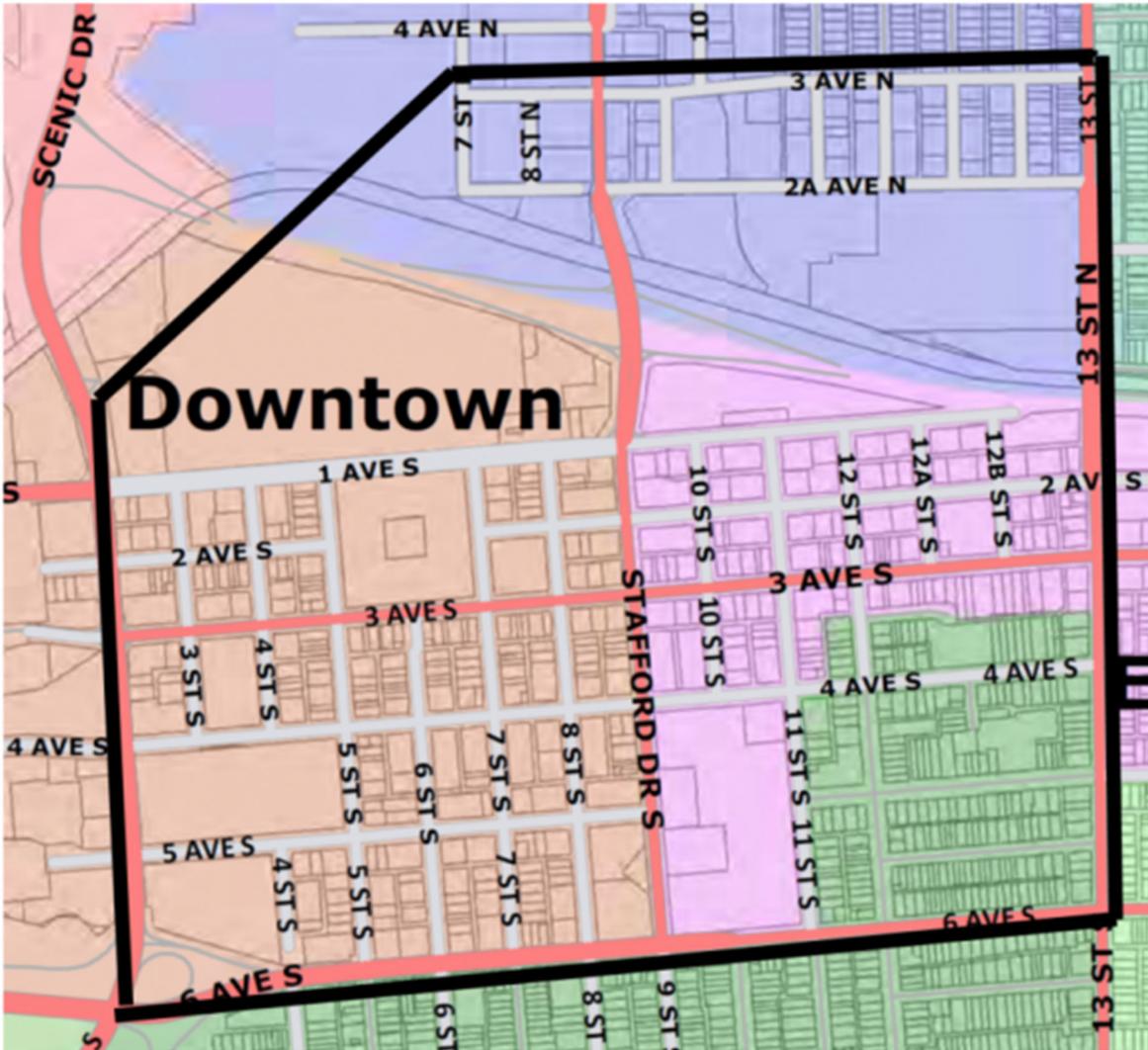
Q15 What is the postal code of your business?
    Postal Code _____

Q16 Are you planning to move your business out of this area **in the next 5 years**?
- O No
- O Yes
- O Not sure / Maybe / Prefer not to say

   If yes: [Display logic]
   Q17 May we ask why? Please select the **main** reason why you are planning to move your business out of this area.
   - O Expanding or changing the business
   - O Lease is up, need new location
   - O Too expensive (rent, lease, taxes, etc.)
   - O Neighbourhood social issues, crime
   - O Other (please specify) _____
   - O Prefer not to say

Q18 Are you a member of or participant in any business or neighbourhood associations or groups? Please select **all** that apply.
- ❑ Downtown BRZ
- ❑ Good Neighbour Group (with ARCHES)
- ❑ Other (please specify) _____
- ❑ Prefer not to say
- ❑ No/not applicable

Q19 How much does the Downtown BRZ help you with the issues your business is facing here?[4]
- O None
- O Very little
- O Some
- O Quite a bit
- O Very much

Q20 Please tell us how the BRZ can be of greater help to you.

_____

_____

_____

_____

_____

---

[4] The BRZ requested inclusion of this question and the one following it.

Q21 How much do the ARCHES Good Neighbour meetings (or ARCHES in general) help you with the issues your business is facing here?[5]
- ○ None
- ○ Very little
- ○ Some
- ○ Quite a bit
- ○ Very much

Q22 Please tell us how ARCHES can be of greater help to you.

_____

_____

_____

_____

_____

Q23 Looking at the face scale, which face best shows how you feel about running your business in this neighbourhood? Please select the face that best shows how you feel.
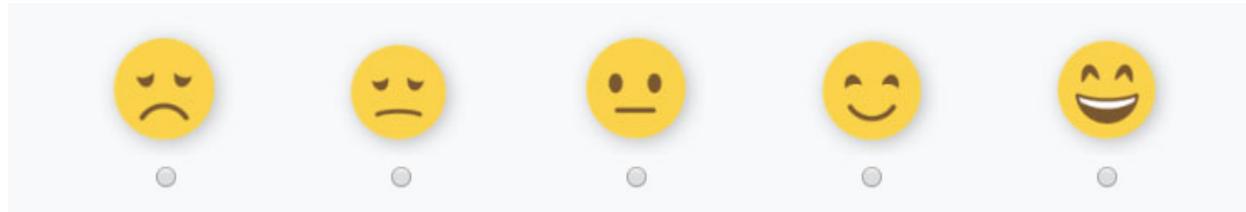
Q24 In this short section we want to learn a little more about you. If you do not want to answer a question, simply advance to the next screen, or select "prefer not to say".

Q25 What is your gender?
- ○ Male
- ○ Female
- ○ Trans
- ○ Other
- ○ Prefer not to say

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[5] ARCHES agreed to have this question and the one following it included in the survey.

Q26 How old were you at your last birthday?
- ○ 19-29
- ○ 30-39
- ○ 40-49
- ○ 50-59
- ○ 60-69
- ○ Over 70
- ○ Prefer not to say

Q27 What level of education have you completed?
- ○ Some high school, but did not graduate
- ○ **High school diploma**
- ○ Some college courses, but did not graduate
- ○ **Completed college diploma or certificate**
- ○ Some university courses, but did not graduate
- ○ **Completed university degree**
- ○ Some graduate studies (masters, MD or PhD), but did not graduate
- ○ **Completed graduate studies** (masters, MD or PhD)
- ○ Prefer not to say

Q28 Where do you currently live?
- ○ South side of Lethbridge
- ○ North side of Lethbridge
- ○ West side of Lethbridge
- ○ Outside of Lethbridge city limits
- ○ Prefer not to say

Q29 Do you have any other comments about your experience as a business manager or owner in this part of Lethbridge?

_____

_____

_____

_____

_____

Appendix B: Signs of Social Disorder – Means and SD

People-Related Events and Factors in Social Disorder

SURVEY PERIOD → ITEMS ↓ PEOPLE-RELATED FACTORS	JAN 2018 Mean (SD)		APR 2018 Mean (SD)		AUG 2018 Mean (SD)		NOV 2018 Mean (SD)		FEB 2019 Mean (SD)	
People using drugs in public										
100m zone	1.42	(1.38)	3.29	(1.50)	3.67	(0.52)	3.17	(0.75)	3.44	(0.53)
500m zone	1.70	(1.55)	1.98	(1.39)	2.63	(1.21)	2.84	(1.27)	2.47	(1.21)
Downtown*	2.15	(1.49)	2.14	(1.40)	2.68	(1.36)	2.58	(1.39)	2.24	(1.33)
People dealing drugs in public										
100m zone	0.92	(1.24)	1.14	(1.95)	2.33	(1.86)	3.17	(1.17)	2.67	(1.12)
500m zone	1.16	(1.38)	1.38	(1.27)	1.83	(1.50)	1.98	(1.42)	1.75	(1.38)
Downtown*	1.92	(1.43)	1.84	(1.34)	2.27	(1.33)	2.07	(1.48)	2.20	(1.22)
People drinking alcohol in public										
100m zone	2.67	(1.23)	2.14	(1.21)	3.00	(0.63)	2.67	(1.21)	1.78	(1.30)
500m zone	2.15	(1.41)	2.27	(1.18)	2.52	(1.24)	2.43	(1.15)	1.86	(1.22)
Downtown*	2.62	(1.33)	2.81	(1.10)	3.15	(0.89)	3.03	(1.10)	2.72	(1.17)
People being drunk or high in public places										
100m zone	2.92	(0.90)	3.14	(1.46)	3.83	(0.41)	4.00	(0.00)	3.67	(0.71)
500m zone	2.87	(1.10)	3.09	(0.85)	3.37	(0.83)	3.41	(0.54)	3.14	(0.64)
Downtown*	3.37	(0.69)	3.30	(0.88)	3.65	(0.49)	3.50	(0.67)	3.08	(0.76)
People urinating or defecating in public (alleys, stairwells, etc.)										
100m zone	1.75	(0.97)	2.14	(0.69)	2.17	(1.83)	2.00	(1.90)	2.22	(1.56)
500m zone	1.51	(1.35)	1.78	(1.33)	2.00	(1.40)	2.11	(1.43)	1.83	(1.40)
Downtown*	1.98	(1.51)	1.95	(1.35)	2.50	(1.11)	2.65	(1.23)	1.92	(1.26)
People loitering or hanging around the area										
100m zone	3.42	(0.51)	3.86	(0.38)	3.83	(0.41)	4.00	(0.00)	4.00	(0.00)
500m zone	2.87	(1.15)	3.18	(0.94)	3.58	(0.64)	3.45	(0.82)	3.28	(0.61)
Downtown*	3.65	(0.56)	3.43	(1.04)	3.76	(0.43)	3.77	(0.56)	3.56	(0.71)
People asking for money										
100m zone	1.50	(1.38)	2.57	(0.98)	3.00	(0.89)	2.67	(0.82)	2.33	(1.12)
500m zone	2.27	(1.35)	2.44	(1.18)	2.39	(1.39)	2.34	(1.31)	1.92	(1.27)
Downtown*	2.96	(1.24)	2.97	(1.12)	3.21	(1.07)	3.19	(1.17)	3.08	(1.08)
People stopping in your business just to use the washroom										
100m zone	2.92	(0.90)	2.00	(1.41)	1.67	(1.51)	2.17	(1.72)	2.33	(1.12)
500m zone	1.96	(1.49)	1.87	(1.42)	2.10	(1.50)	1.89	(1.47)	2.00	(1.37)
Downtown*	2.35	(1.55)	2.22	(1.36)	2.50	(1.44)	1.97	(1.49)	2.29	(1.40)
People selling sex										
100m zone	0.50	(1.00)	0.29	(0.76)	1.83	(1.47)	2.17	(1.72)	1.22	(1.39)
500m zone	0.42	(0.89)	0.47	(0.91)	0.97	(1.39)	1.12	(1.33)	.71	(1.15)
Downtown*	0.83	(1.17)	1.28	(1.32)	1.55	(1.30)	1.34	(1.34)	1.60	(1.41)
People having sex in a public place										
100m zone	0.45	(0.52)	0.29	(0.76)	0.80	(1.30)	1.00	(1.55)	0.44	(0.73)
500m zone	0.36	(0.87)	0.52	(0.90)	0.75	(1.10)	1.12	(1.16)	0.89	(1.09)
Downtown*	0.56	(1.02)	0.78	(1.05)	0.68	(0.94)	1.10	(1.19)	0.68	(1.07)

SURVEY PERIOD → ITEMS ↓ **PEOPLE-RELATED FACTORS**	JAN 2018 Mean (SD)	APR 2018 Mean (SD)	AUG 2018 Mean (SD)	NOV 2018 Mean (SD)	FEB 2019 Mean (SD)
People yelling or fighting outside					
100m zone	2.25 (0.75)	3.29 (0.76)	3.33 (0.52)	3.50 (0.55)	3.44 (0.53)
500m zone	1.79 (1.24)	2.43 (1.07)	2.83 (1.24)	2.73 (0.95)	2.61 (0.84)
Downtown*	2.67 (1.04)	2.97 (1.04)	3.21 (0.64)	3.13 (0.98)	3.00 (0.76)
People sleeping on the sidewalk, in doorways or other public places					
100m zone	1.92 (1.31)	3.14 (1.07)	3.00 (1.55)	3.17 (1.17)	2.78 (0.83)
500m zone	1.68 (1.37)	2.13 (1.34)	3.00 (1.09)	2.70 (1.23)	2.00 (1.17)
Downtown*	2.33 (1.01)	2.64 (1.22)	3.41 (0.74)	3.23 (1.09)	2.88 (0.97)
People verbally assaulting, harassing or intimidating you, your customers or employees					
100m zone	1.92 (0.90)	2.29 (1.38)	2.33 (1.21)	2.50 (1.64)	2.11 (1.05)
500m zone	1.16 (1.33)	1.44 (1.22)	1.98 (1.44)	1.77 (1.38)	1.58 (1.30)
Downtown*	2.10 (1.39)	2.05 (1.53)	2.44 (1.48)	2.20 (1.61)	2.09 (1.41)
People physically assaulting you, your customers or employees					
100m zone	.33 (0.89)	0.00 (0.00)	0.17 (0.41)	0.33 (0.82)	0.67 (1.00)
500m zone	.34 (0.83)	0.24 (0.53)	0.66 (1.26)	0.65 (1.07)	0.42 (0.81)
Downtown*	.56 (1.02)	0.73 (1.07)	0.74 (1.11)	0.42 (1.03)	0.48 (0.82)
Someone robbing your business during open hours					
100m zone	0.67 (1.37)	1.57 (1.99)	0.50 (1.22)	0.67 (1.63)	0.22 (0.67)
500m zone	0.42 (0.99)	0.36 (0.80)	0.58 (1.24)	0.35 (0.81)	0.22 (0.83)
Downtown*	0.83 (1.37)	0.84 (1.32)	0.88 (1.37)	0.87 (1.36)	0.80 (1.29)
People trespassing in the area around your business					
100m zone	2.42 (1.24)	2.71 (1.60)	3.33 (0.52)	3.50 (0.84)	3.00 (0.71)
500m zone	1.40 (1.44)	1.89 (1.42)	2.05 (1.61)	2.47 (1.32)	2.11 (1.37)
Downtown*	1.67 (1.48)	2.11 (1.49)	2.24 (1.63)	2.48 (1.46)	2.72 (1.10)

*Downtown = downtown southwest
Scale: 0=Never, 1=More than 3 months ago, 2=Within the last 3 months, 3=Within the last month, and 4=Within the last day

Environmental Factors in Social Disorder

SURVEY PERIOD → ITEMS ↓ **ENVIRONMENTAL FACTORS**	JAN 2018 Mean (SD)	APR 2018 Mean (SD)	AUG 2018 Mean (SD)	NOV 2018 Mean (SD)	FEB 2019 Mean (SD)
Garbage or litter lying around					
100m zone	3.83 (0.39)	4.00 (0.00)	4.00 (0.00)	4.00 (0.00)	3.67 (0.50)
500m zone	3.18 (1.17)	3.64 (0.77)	3.76 (0.43)	3.86 (0.35)	3.51 (0.65)
Downtown*	3.58 (0.78)	3.70 (0.62)	3.50 (0.93)	3.59 (0.80)	3.48 (0.65)
Discarded needles or syringes lying around					
100m zone	3.00 (0.74)	3.71 (0.76)	3.33 (1.63)	3.50 (0.55)	3.00 (0.87)
500m zone	1.97 (1.53)	2.84 (1.24)	2.73 (1.18)	2.98 (0.88)	2.35 (0.95)
Downtown*	2.17 (1.48)	2.59 (1.26)	2.62 (1.30)	2.66 (1.26)	2.48 (1.19)

SURVEY PERIOD → ITEMS ↓ ENVIRONMENTAL FACTORS	JAN 2018 Mean (SD)	APR 2018 Mean (SD)	AUG 2018 Mean (SD)	NOV 2018 Mean (SD)	FEB 2019 Mean (SD)
Discarded drug paraphernalia other than needles lying around					
100m zone	1.58 (1.16)	2.57 (1.81)	3.33 (1.21)	4.00 (0.00)	3.11 (0.60)
500m zone	1.55 (1.55)	2.42 (1.32)	2.68 (1.46)	2.75 (1.31)	2.08 (1.30)
Downtown*	1.90 (1.56)	2.11 (1.41)	2.48 (1.50)	2.45 (1.29)	2.28 (1.34)
Cigarette butts on the sidewalk					
100m zone	3.67 (0.49)	3.71 (0.49)	3.83 (0.41)	3.83 (0.41)	3.67 (0.50)
500m zone	3.17 (1.17)	3.60 (0.91)	3.68 (0.76)	3.52 (0.82)	3.27 (1.02)
Downtown*	3.87 (0.34)	3.76 (0.49)	3.76 (0.43)	3.52 (0.85)	3.52 (0.65)
Empty beer cans or liquor bottles					
100m zone	2.92 (1.08)	2.71 (1.25)	3.17 (0.75)	3.17 (0.75)	2.67 (1.12)
500m zone	2.28 (1.43)	2.64 (1.11)	2.43 (1.06)	2.68 (0.96)	2.30 (1.22)
Downtown*	2.79 (1.05)	2.73 (1.04)	3.09 (0.93)	2.84 (1.37)	2.67 (0.76)
Vandalism (something was damaged on purpose) to property or vehicle(s) (including theft from vehicle)					
100m zone	2.17 (0.94)	2.29 (1.38)	1.50 (1.22)	2.00 (0.89)	2.44 (1.01)
500m zone	1.40 (1.27)	1.67 (1.09)	2.05 (1.26)	2.36 (1.14)	1.78 (1.03)
Downtown*	1.62 (1.36)	1.89 (1.15)	2.09 (1.16)	1.97 (1.38)	1.76 (1.23)
Theft or attempted theft of property or vehicle(s)					
100m zone	1.50 (1.38)	1.71 (1.70)	1.17 (0.98)	2.17 (1.17)	1.67 (1.50)
500m zone	0.94 (1.27)	1.31 (1.22)	1.85 (1.39)	1.79 (1.28)	1.76 (1.23)
Downtown*	1.40 (1.32)	1.28 (1.23)	1.48 (1.28)	1.32 (1.28)	1.16 (1.40)
Break and enter, or attempted break and enter of business					
100m zone	1.25 (1.29)	0.43 (1.13)	0.17 (0.41)	0.50 (0.84)	0.67 (1.00)
500m zone	0.54 (0.82)	0.44 (0.62)	1.02 (1.23)	0.77 (1.09)	0.70 (0.91)
Downtown*	0.69 (1.00)	0.72 (0.88)	0.97 (1.16)	0.90 (1.11)	0.52 (0.59)
Unmaintained properties (e.g. broken windows, boarded up shops, weeds out of control)					
100m zone	0.67 (1.15)	0.57 (1.13)	1.00 (1.55)	0.83 (0.98)	1.00 (1.12)
500m zone	0.78 (1.20)	1.04 (1.19)	1.54 (1.53)	1.56 (1.47)	1.19 (1.37)
Downtown*	1.37 (1.55)	1.72 (1.50)	1.68 (1.47)	1.17 (1.37)	1.56 (1.36)

Scale: 0=Never, 1=More than 3 months ago, 2=Within the last 3 months, 3=Within the last month, and 4=Within the last day

Feelings of Safety

SURVEY PERIOD → ITEMS ↓ FEELINGS OF SAFETY	JAN 2018 Mean (SD)		APR 2018 Mean (SD)		AUG 2018 Mean (SD)		NOV 2018 Mean (SD)		FEB 2019 Mean (SD)	
I feel safe walking in this area during the day										
100m zone	3.83	(0.72)	2.43	(1.27)	2.17	(1.17)	2.33	(1.21)	2.67	(1.12)
500m zone	3.79	(1.08)	3.91	(0.85)	3.54	(1.25)	3.45	(1.21)	3.68	(1.08)
Downtown*	3.62	(1.24)	3.49	(1.24)	3.26	(1.26)	3.31	(1.23)	2.88	(1.45)
I feel safe in my place of work during the day										
100m zone	3.67	(0.78)	3.29	(1.60)	2.83	(1.33)	2.83	(1.60)	3.33	(1.12)
500m zone	4.10	(0.92)	4.16	(0.90)	3.85	(1.09)	3.75	(1.16)	3.76	(1.09)
Downtown*	4.06	(1.04)	3.95	(1.03)	3.85	(1.16)	3.69	(1.20)	3.32	(1.41)
I feel safe walking in this area after dark										
100m zone	2.00	(0.74)	1.43	(0.53)	1.17	(0.41)	1.17	(0.41)	1.00	(0.00)
500m zone	2.28	(1.18)	2.13	(0.97)	2.05	(1.07)	2.00	(1.10)	2.30	(1.18)
Downtown*	2.19	(1.17)	2.03	(1.07)	1.76	(0.96)	1.66	(0.90)	1.60	(0.91)
I feel safe in my place of work after dark										
100m zone	2.50	(1.31)	2.86	(1.46)	1.83	(1.17)	1.83	(1.17)	1.56	(0.73)
500m zone	3.01	(1.25)	2.84	(1.13)	2.73	(1.34)	2.66	(1.33)	2.95	(1.25)
Downtown*	3.29	(1.27)	2.92	(1.32)	2.70	(1.36)	2.47	(1.19)	2.16	(1.25)
I think my customers/clients feel safe walking in this area during the day										
100m zone	3.75	(0.45)	3.00	(1.29)	2.17	(0.75)	2.00	(0.89)	2.56	(1.13)
500m zone	3.70	(1.10)	3.73	(1.03)	3.20	(1.27)	3.27	(1.06)	3.32	(1.06)
Downtown*	3.21	(1.19)	3.35	(1.06)	2.79	(1.20)	2.94	(1.16)	2.36	(1.19)
I think my customers/clients feel safe walking in this area during after dark										
100m zone	2.50	(0.80)	1.86	(0.90)	1.00	(0.00)	1.17	(0.41)	1.44	(0.73)
500m zone	2.52	(1.02)	2.00	(0.77)	1.93	(0.91)	1.80	(0.90)	1.86	(0.95)
Downtown*	2.08	(0.99)	2.03	(0.93)	1.50	(0.66)	1.50	(0.80)	1.36	(0.57)

Scale: 5 = Strongly agree, 4 = Agree, 3 = Neither agree nor disagree, 2 = Disagree, 1 = Strongly disagree

Perceptions of Crime

PERCEPTION OF CRIME	JAN 2018 Mean (SD)		APR 2018 Mean (SD)		AUG 2018 Mean (SD)		NOV 2018 Mean (SD)		FEB 2019 Mean (SD)	
Over the past 3 months										
100m zone	3.50	(0.67)	3.86	(1.07)	4.67	(0.52)	3.67	(1.37)	3.78	(0.97)
500m zone	3.33	(0.86)	3.25	(0.74)	3.76	(1.07)	3.88	(0.97)	3.06	(1.07)
Downtown*	3.24	(0.79)	3.33	(0.92)	3.80	(1.06)	3.44	(1.13)	3.04	(1.15)
Over the past year										
100m zone	3.83	(0.72)	3.86	(0.90)	4.83	(0.41)	4.33	(1.63)	4.67	(0.71)
500m zone	3.40	(0.82)	3.53	(0.80)	3.97	(0.96)	4.31	(0.86)	3.97	(0.97)
Downtown*	3.66	(1.11)	3.62	(1.13)	3.93	(1.31)	3.94	(1.12)	3.88	(1.36)

Scale: 1 = Decreased a lot, 2 = Decreased a little, 3 = Stayed about the same, 4 = Increased a little, and 5 = Increased a lot

Overall Satisfaction Running Business in this Area

OVERALL SATISFACTION IN AREA	JAN 2018 Mean	(SD)	APR 2018 Mean	(SD)	AUG 2018 Mean	(SD)	NOV 2018 Mean	(SD)	FEB 2019 Mean	(SD)
100m zone	3.17	(0.83)	2.14	(0.90)	2.00	(0.63)	1.50	(0.55)	1.78	(0.83)
500m zone	3.55	(0.98)	3.41	(1.02)	2.95	(1.34)	3.05	(1.15)	2.95	(1.05)
Downtown*	3.27	(1.30)	3.03	(1.16)	2.65	(1.23)	2.44	(1.22)	2.20	(1.04)

Scale: 1-5 face scale, 1 = Very unsatisfied, 5 = Very satisfied

Weather Conditions from Environment Canada

	Survey #				
	1	2	3	4	5
Mean monthly outdoor temperature (°C)	-5.66	-5.03	15.77	10.80	-5.23
Total rainfall (mm)	.00	1.30	133.90	79.80	.00
Total snowfall (cm)	70.60	93.40	.00	.00	43.00

Appendix C. Analyzing Survey Proportions across Five Time Periods

Let O_{ijk} represent whether or not antisocial behavior or physical behavior was observed for participant i (= 1, .., 129), categorical response k (= 1, …, 5), and survey period j (= 1, …, 5). The categorical responses can take on five values regarding the time at which a survey participant most recently observed antisocial behavior or physical disorder: Never (1), More than 3 Months (2), Within 3 Months (3), Within a Month (4), and Within a Day (5). The responses are modeled as a Bernoulli random variable with the overall probability of a given participant observing antisocial behavior or physical disorder θ_{jk} (Model 1). The overall probability was assigned a prior distribution that assumes that the overall probability can take on any value between zero and one with equal probability (Model 2).

$$O_{ijk} \sim \text{Bernoulli}(\theta_{jk}) \qquad\qquad (1)$$
$$\theta_{jk} \sim \text{Beta}(1,1) \qquad\qquad (2)$$

The within-survey and between-category or between-survey and within-category differences between the modeled proportions can be assessed by comparing the overall proportions. For example, the (within-survey and between-category) difference between proportion of participants never observing antisocial behavior and the proportion of participants observing antisocial behavior within the most recent day or the first survey can be quantified via $\theta_{11} - \theta_{51}$. If this greater than zero and the associated 95% uncertainty interval is unambiguously different from zero, then there is evidence that the proportion of participants never observing antisocial behavior is significantly greater than the proportion of participants observing antisocial behavior within the most recent day for the first survey. Likewise, the (between-survey and within-category) difference between the proportion of participants never observing antisocial behavior in the first survey and the never observing antisocial behavior in the fifth survey can be assessed via $\theta_{11} - \theta_{15}$. If this difference is greater than negative and the associated 95% uncertainty interval is unambiguously different from zero, then there is evidence that a significantly smaller proportion of participants observed antisocial behavior in the first survey than in the fifth survey.

Appendix D: Original Zone Demarcation in Study Area

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