

Electric Vehicle Public Charging Infrastructure Pilot Project

CPTED Review Report



November, 2021

Community Services Department, Planning & Development

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1.0 General Background

Crime Prevention Through Environmental Design (CPTED) is a collaborative, multi-faceted approach to reducing opportunities for crime, improving perceptions of safety, and strengthening community bonds. CPTED emphasizes the relationship between the immediate physical environment and social behavior related to crime. CPTED strategies are typically developed jointly by a number of trained individuals to ensure a creative and balanced approach to problem solving.

The principles of CPTED were adopted into the City of Saskatoon's Official Community Plan in May 2008, and the Senior Management Team approved the CPTED Design Review Administrative Policy No. A09-034 in September 2008 (Attachment 1).

A CPTED Review of the plans for the Electric Vehicle Public Charging Infrastructure Pilot Project, was undertaken by the CPTED Review Committee (Committee) on Thursday November 4th, 2021. Two proposed sites were reviewed including locations at the Lawson and Lakewood Civic Centres. The purpose of the Committee is to review the project based upon the principles of CPTED, and to identify recommendations that would improve individual's real and perceived safety. The proposal was presented to the Committee by Amber Weckworth, Education and Environmental Performance Manager (Climate Change) with the Sustainability Department of the City of Saskatoon.

The CPTED Review Committee for this project included Michael Beresnack (Parks, Community Services); Brian Conway (Public Relations and Community Risk Reduction, Saskatoon Fire); Jeff Naughtengale (Saskatoon Police Service); Tonya Gresty (Saskatoon Police Services); Dave Mckenzie (Saskatoon Police Service); Cate Francis (Parks, Community Services); and Elisabeth Miller (Neighbourhood Planning, Community Services); Kenneth Weddige, Acting Chair (Neighbourhood Planning, Community Services).

There were no comments or submissions on this project from Saskatoon Light and Power. Danae Balogun (Transportation, Transportation and Construction) was unable to attend the meeting but provided written comments.

The purpose of this report is to summarize the findings and subsequent recommendations that were developed through the CPTED review process. The recommendations in this report will help to reduce the opportunity for crime to occur in these areas and ensure that the proposed project incorporates the relevant principles of CPTED.

2.0 Project Background

The Electric Vehicle Public Charging Infrastructure Pilot project includes the proposed installation of the City of Saskatoon's first public charging infrastructure. Specifically, this project includes the installation of electric vehicle (EV) charging stations at the Lawson and Lakewood Leisure Centres. This investment and accompanying infrastructure will help reduce barriers to adopting electric vehicles; including the availability of chargers.

The physical chargers were procured by the City of Saskatoon from an independent contractor. The chargers are noted to offer a range of capabilities including charging management, data capturing, and reporting and fee collection. It is important to note that at this stage in the pilot program there will be no cost for vehicle charging. This is likely to change as the program progresses and additional charging infrastructure is installed. Time limits for charging are not proposed at this time but may be introduced later contingent on the development of an enforcement strategy. A photo of the chargers was provided by the proponent and has been included below as Figure 1.



Figure 1: CT4000 Family ChargePoint Charging Stations

The proponent indicated that a communication strategy will be developed to promote the charging stations once installed. This strategy will help promote the benefits of electric vehicles and to dispel myths and barriers. Communication activities will include signage at the sites (using branding developed for the City's fleet vehicles), social media, news

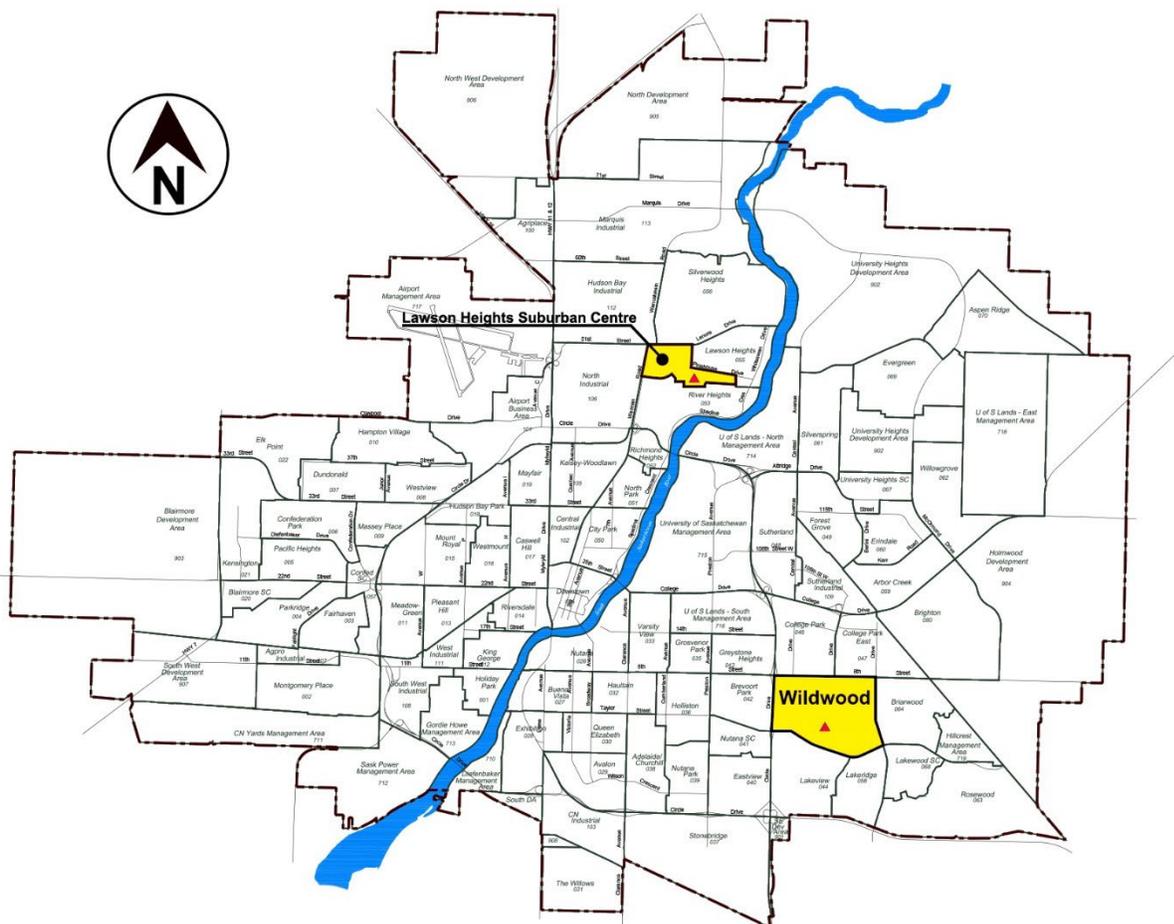
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media, and community events such as “Charged Up” which the City participated in on September 26, 2021.

According to the proponent the project team developed a set of criteria to determine appropriate locations to install the City’s first public charging infrastructure. Based on the established criteria, Leisure Centres were identified to be the most desirable locations to host the pilot charging stations. Some of the characteristics that the project team identified and that make the Lawson and Lakewood Civic Centres desirable locations include;

- Availability of Land owned by the City of Saskatoon.
- Adequate existing public parking.
- Adequate space to accommodate electrical trenching.
- Proximity to amenities and activity area

The Lawson Civic Centre is located in the Lawson Heights Suburban Centre while the Lakewood Civic Centre is located in the Wildwood Neighbourhood. A location map has been included below as Map 1. which represents where the sites are located within the City of Saskatoon.

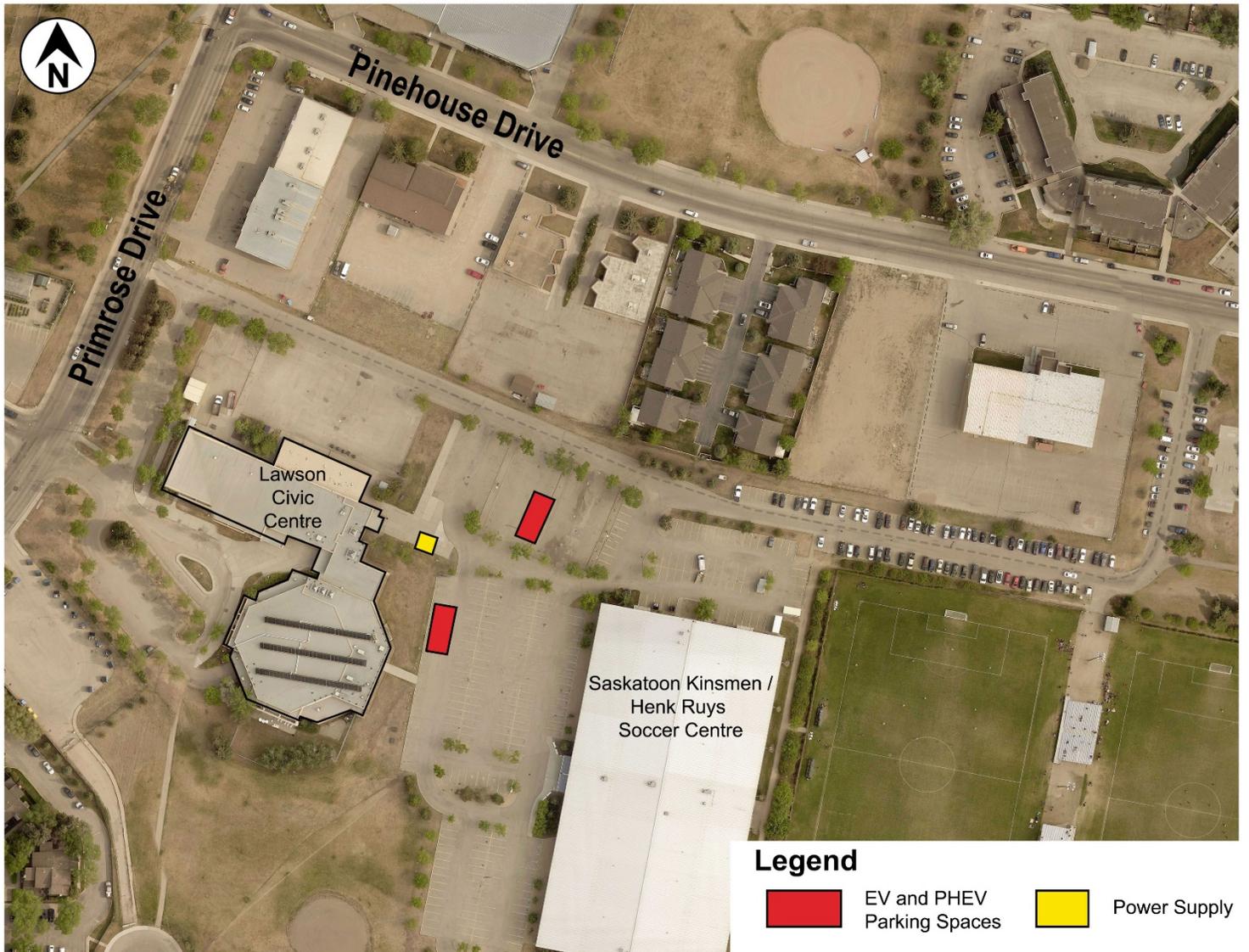


Map 1: EV Charging Station Location Map

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2.1. Lawson Civic Centre

Chargers are proposed to be installed in the parking lot near the entrance of the facility, between the Civic Centre and the Saskatoon Kinsmen/Henk Ruys Soccer Centre. Figure 2 shows where the chargers and accompanying power infrastructure is planned to be installed on the site.



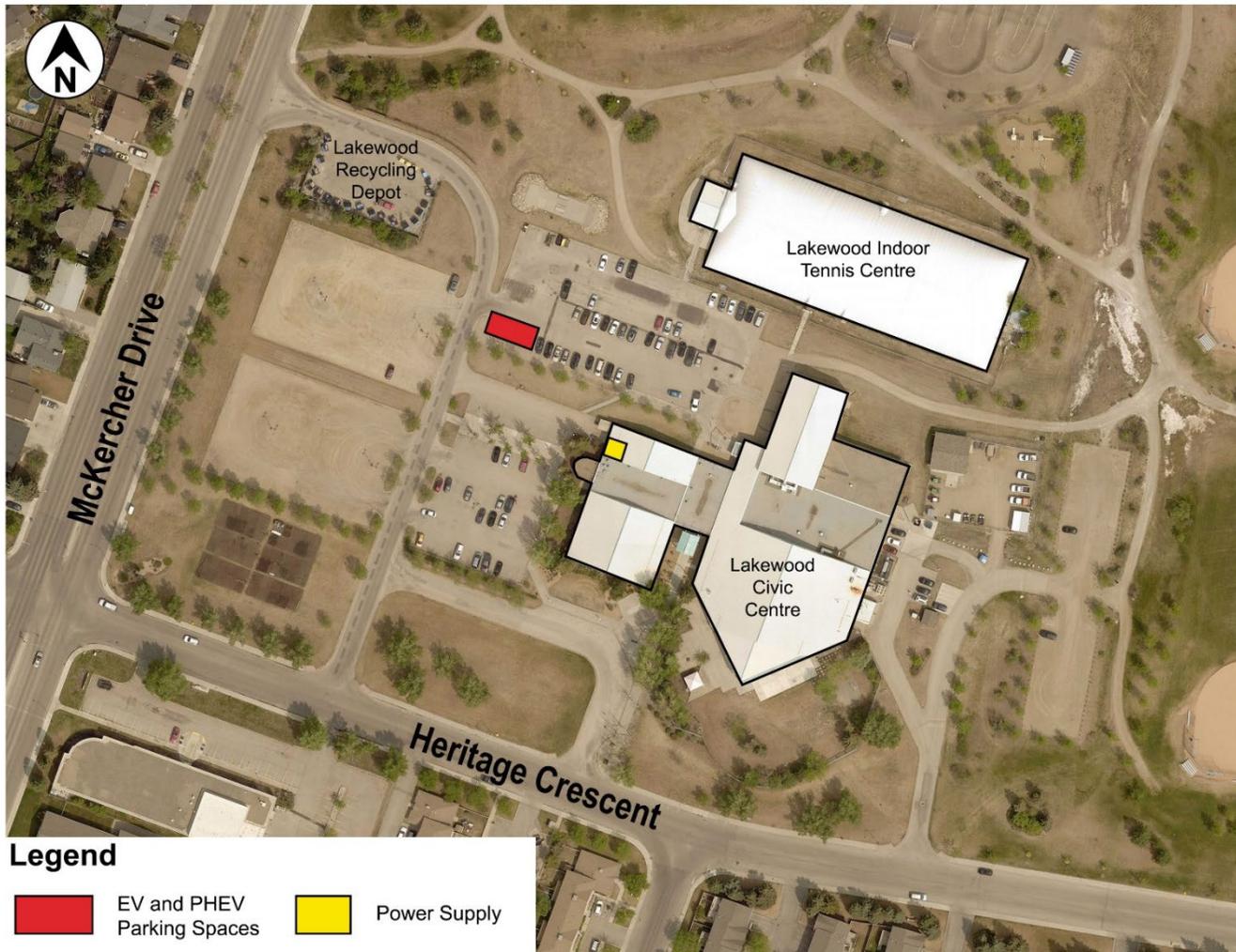
Map 2: Lawson Civic Centre Site Plan

The chargers are proposed to be installed in areas that are open and visible. There are a few trees within the parking area however they are high canopy deciduous trees and will not pose an issue for visibility. Power infrastructure will need to be installed, and a location has been identified near the main entrance. The power infrastructure is likely to take the form of a small utility box.

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2.2. Lakewood Civic Centre

Much like the Lawson Civic Centre, chargers are proposed to be installed at the Lakewood Civic Centre in an open and visible area. The chargers are proposed to be installed in the parking lot between the Civic Centre and the Lakewood Indoor Tennis Centre. The power infrastructure will be installed inside the building, within an existing utility area.



Map 3: Lakewood Civic Centre Site Plan

3.0 Crime Statistics

The goals of the Safe Growth/CPTED review are to support the reduction in the opportunity for crime to occur and to maintain or improve users' feelings of safety in the area. Crime maps are one tool that are used to identify undesirable activity in an area, and can assist in determining if there are environmental, management, or operational changes that can be made to reduce the opportunity for crime to occur and increase feelings of safety. Available crime statistics from 2019 and 2020 were reviewed for both sites. The crime maps are included at the end of this report as Attachment 2.

There was a significant change in the number of reported incidents between 2019 and 2020 with far fewer incidents reported in 2020. This discrepancy can be attributed to the restrictions associated with the Covid-19 pandemic. Many programs were postponed for 2020 which correlates with fewer people in the area and subsequently fewer opportunities to commit crimes. Based on the above the 2019 statistics were used for this review as they are anticipated to reflect typical behaviors when the facility is operating at capacity and under normal conditions.

The statistics indicate that the categories of crime with the highest number of reported incidents at both sites include theft under 5000\$, and mischief. Mischief also includes incidents of graffiti vandalism. The statistics indicate that there is a greater potential for mischief at Lawson while there is a greater potential for theft at the Lakewood Civic Centre. The higher rate of mischief at Lawson may be a result of the configuration of the parking area which can be described as more secluded compared to Lakewood. Based on the above it will be important that the chargers are monitored periodically to ensure they are clean and free of graffiti vandalism. Appropriate signage will also be important as it will provide valuable information for users including who to call to report any concerns with maintenance, including graffiti vandalism. Signage should also remind users to lock their vehicles and not to leave valuables in sight.

Beyond the more typical crimes that occur in public places, like mischief and theft, there are several concerning statistics that need to be identified for both sites. The statistics indicate that there were two incidents of violence at the Lawson Civic Centre in 2019 and a nearby sexual assault in 2020. In 2019 there was also a sexual assault reported at the Lakewood Civic Centre and another nearby sexual assault in 2020. It will be important to monitor the crime statistics following the installation of the chargers to see if there is a change in the concentration of reported incidents, specifically near the chargers. It will also be important to include visible signage indicating that the chargers are not monitored

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by video surveillance and to take caution while utilizing the chargers during non-peak hours where natural surveillance may be reduced due to fewer people in the area.

4.0 Significant Findings

This section identifies the significant findings based on the proposed plans for Electric Vehicle Public Charging Infrastructure Pilot project. It is important to note that not all the CPTED principles, which are set out in Attachment 1, apply to every project and some principles may overlap. To clarify this review, some of the CPTED principles have been combined or omitted.

The preliminary plans were reviewed and the following findings and recommendations identified for use in the ongoing design work and management plan for The Electric Vehicle Public Charging Pilot Project.

4.3. Natural Surveillance & Activity Support

Natural Surveillance is the concept of putting “eyes on the street”, making a place unattractive for potential illegitimate behaviour. Street design, landscaping, lighting and site design (i.e. neighbourhood layout) all influence the potential for natural surveillance.

Activity Support is the concept of filling an area with legitimate users (by facilitating or directly scheduling activities or events) so potential offenders cannot offend with impunity. Places and facilities that are underused can become locations with the potential for criminal activity.

The charging stations at both sites are located in public parking areas that are open and visible. They are located near the entrances to the respective facilities and other associated amenity areas including the Soccer Centre near the Lawson Civic Centre and the Indoor Tennis Centre near the Lakewood Civic Centre. The location of the chargers near these busy activity areas will support the principles of Natural Surveillance and Activity Support as there is likely to be people around to informally monitor the area throughout the day. There are some trees located throughout both parking lots however they have small trunks and higher canopies that will not restrict visibility or provide cover to hide behind.

The committee did identify a potential concern with natural surveillance in the evening or early morning hours and/or when the respective facilities are closed. At this stage in the pilot project there will be no time limits or restricted hours of operation. It will be important that highly visible signage is installed on or near each charger. The signage would need to communicate to users that the area is not monitored or patrolled regularly. There is some lighting in the parking lot however lighting itself may not be a detractor for criminal

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activity if there are few people around to report a crime or there are no facilities open where an individual could seek refuge.

4.4. Access Control

Access Control is controlling who goes in and out of a neighbourhood, park, building, etc. Access control includes creating a sense of “turf”, for legitimate users, while focusing on formal and informal entry and exit points.

Both sites, and specifically the proposed location of the chargers are easily accessible from the adjacent roadways. The chargers are also located near the entrances to the adjacent facilities.

The committee did discuss and express concern with the proximity of the chargers to the entrance of the Lawson Civic Centre. The concern was specific to the potential for a fire to occur that would impact users that are using that door of the facility.

According to Saskatoon Fire, fires associated with electric vehicles, electric charging infrastructure, and large batteries in general, typically burn hotter and longer compared to vehicle fires associated with traditional internal combustion engines. Upon receiving further information it was determined that the location of the chargers near the Lawson Civic Centre is appropriate and does not contradict any established municipal policy. In the event that there is a fire that limits access there are alternative access points to the facility that would allow patrons to exit, and emergency responders to enter the facility if needed.

4.5. Image

Image is the appearance of a place and how this is instrumental in creating a sense of place or territory for legitimate users of the space. A place that does not appear to be maintained or cared for may indicate to criminals that the place will not be defended and criminal activity in the area will be tolerated.

During an informal site visit on November 4th, 2021 a committee member noted that the area is well maintained. There was no accumulated debris or evidence of graffiti vandalism on the existing infrastructure near the proposed locations of the chargers.

It will be important that the chargers and accompanying infrastructure, specifically the proposed power supply box at the Lawson Civic Centre, are appropriately maintained so that they do not detract from the positive image in the area. As noted in section 3. it is

important that highly visible information signage is included on or near the chargers that would include information on where and how to report any maintenance concerns.

4.6. Conflicting User Groups

Conflicting User Groups refers to instances where different user groups may conflict (e.g. a school near industrial development or a seniors centre near a nightclub). Careful consideration of compatible land uses can minimize potential conflicts between groups.

There is the potential for conflict between individuals who may be parking non-electric vehicles in spots that are intended for electric vehicle charging. One of the primary criteria for determining a preferred location to launch the pilot program was the availability of space. The conversion of parking spaces to electric vehicle charging stations is not anticipated to impact the availability of parking for non-electric vehicles. However signage and asphalt painting may help inform all users that these are designated parking stalls with a specific use.

Regardless of the availability of parking it will be important to monitor any reported violations of non-electric vehicles parking in spots that are designated for electric vehicle. Information could be included on the chargers indicating who to call to report non-electric vehicles parking in spots designated for electric vehicle charging. Though there is no mechanism for enforcement at this time this information should be collected to inform future stages of the project including the possible need for an enforcement strategy.

4.7. Culture

Culture is the overall makeup and expression of the users of a place. Also known as “placemaking”, it involves artistic, musical, sports, or other local cultural events to bring people together in time and purpose. Physical designs that can encourage this include public multi-purpose facilities, sports facilities, and areas that local artists and musicians might use. Community memorials, public murals, and other cultural features also enhance this. These features create a unique context of the environment and help determine the design principles and policies that best support the well-being of all user groups and contribute to their cohesiveness.

The installation of public EV charging stations should communicate to the public the City’s commitment to supporting alternative forms of energy. Further, the installation of EV charging stations confirms the City’s commitment to exploring opportunities for the purpose of reducing harmful chemicals that are the byproduct of traditional internal combustion engines.

5.0 Recommendations

- 5.1** That the proponent installs highly visible signage on or near the charging stations that communicates the following;
- Information on who to call to report any issues with the chargers including general maintenance and vandalism;
 - Information on how to report non-electric vehicles parked in spots designated for electric vehicle charging; and
 - That owners are responsible for any lost stolen or damaged property.
- 5.2** That the proponent identify a logo, wording, or colour, similar to accessible parking spots, that can be painted on the asphalt to identify the specific use for these parking stalls.
- 5.3** That the chargers are monitored as part of regular facility monitoring to ensure the infrastructure is well maintained.
- 5.4** That the proponent collect data beyond straight usage and look at complaints, damage, criminal incidents, or anything that could help in evaluating the pilot project and transferring that knowledge to subsequent sites.

6.0 Appendix

Attachment 1: Appendix A to City of Saskatoon Administrative Policy A09-034 – Principles of Crime Prevention Through Environmental Design (CPTED) Principles.

Attachment 2: Selected 2019 and 2020 Crime Statistics Map of Electric Vehicle Public Charging Infrastructure Pilot

Attachment 1

APPENDIX A TO CITY OF SASKATOON

ADMINISTRATIVE POLICY A09-034 – CPTED Review

Principles of Crime Prevention Through Environmental Design (CPTED):

Natural Surveillance: is the concept of putting “eyes on the street”, making a place unattractive for potential illegitimate behaviour. Street design, landscaping, lighting and site design (i.e. neighbourhood layout) all influence the potential for natural surveillance.

Access Control: is controlling who goes in and out of a neighbourhood, park, building, etc. Access control includes creating a sense of “turf”, for legitimate users, while focusing on formal and informal entry and exit points.

Image: is the appearance of a place and how this is instrumental in creating a sense of place or territory for legitimate users of the space. A place that does not appear to be maintained or cared for may indicate to criminals that the place will not be defended and criminal activity in the area will be tolerated.

Territoriality: is the concept of creating and fostering places that are adopted by the legitimate users of the space (i.e. take ownership), making it less likely for people who do not belong to engage in criminal or nuisance behaviour at that location.

Conflicting User Groups: refers to instances where different user groups may conflict (e.g. a school near industrial development or a seniors centre near a nightclub). Careful consideration of compatible land uses can minimize potential conflicts between groups.

Activity Support: is the concept of filling an area with legitimate users (by facilitating or directly scheduling activities or events) so potential offenders cannot offend with impunity. Places and facilities that are underused can become locations with the potential for criminal activity.

Crime Generators: are activity nodes that may generate crime. For example, a 24 hour convenience or liquor store may not be a problem in itself but where it is located in the community may cause conflict or unforeseen secondary activity. The location of some land uses is critical to ensuring an activity does not increase the opportunities for crime to occur or reduce users and residents’ perceptions of their safety in the area.

Land Use Mix: is the concept that diversity in land uses can be a contributor or detractor for crime opportunities. Separating land uses (i.e. residential) from each other can create places that are unused during certain times of the day.

Movement Predictors: force people, especially pedestrians and cyclists, along a particular route or path, without providing obvious alternative escape routes or strategies

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for safety. Potential attackers can predict where persons will end up once they are on a certain path (e.g. a pedestrian tunnel or walkway).

Displacement: can be positive or negative so it is critical to understand how crime may move in time or space and what the impact may be. In general, the displacement that must be considered is:

Negative displacement – crime movement makes things worse;

Diffusion of benefits – displacement can reduce the overall number of crimes more widely than expected;

Positive displacement – opportunities for crime are intentionally displaced which minimizes the impact of the crime.

Cohesion: is the supportive relationships and interactions between all users of a place to support and maintain a sense of safety. Though not a specific urban design function, design can enhance the opportunity for positive social cohesion by providing physical places where this can occur, such as activity rooms, park gazebos, or multi-purpose rooms in schools and community centers. In some cases property owners or building managers can provide opportunities for social programming. This will increase the ability of local residents or users of a space to positively address issues as they arise.

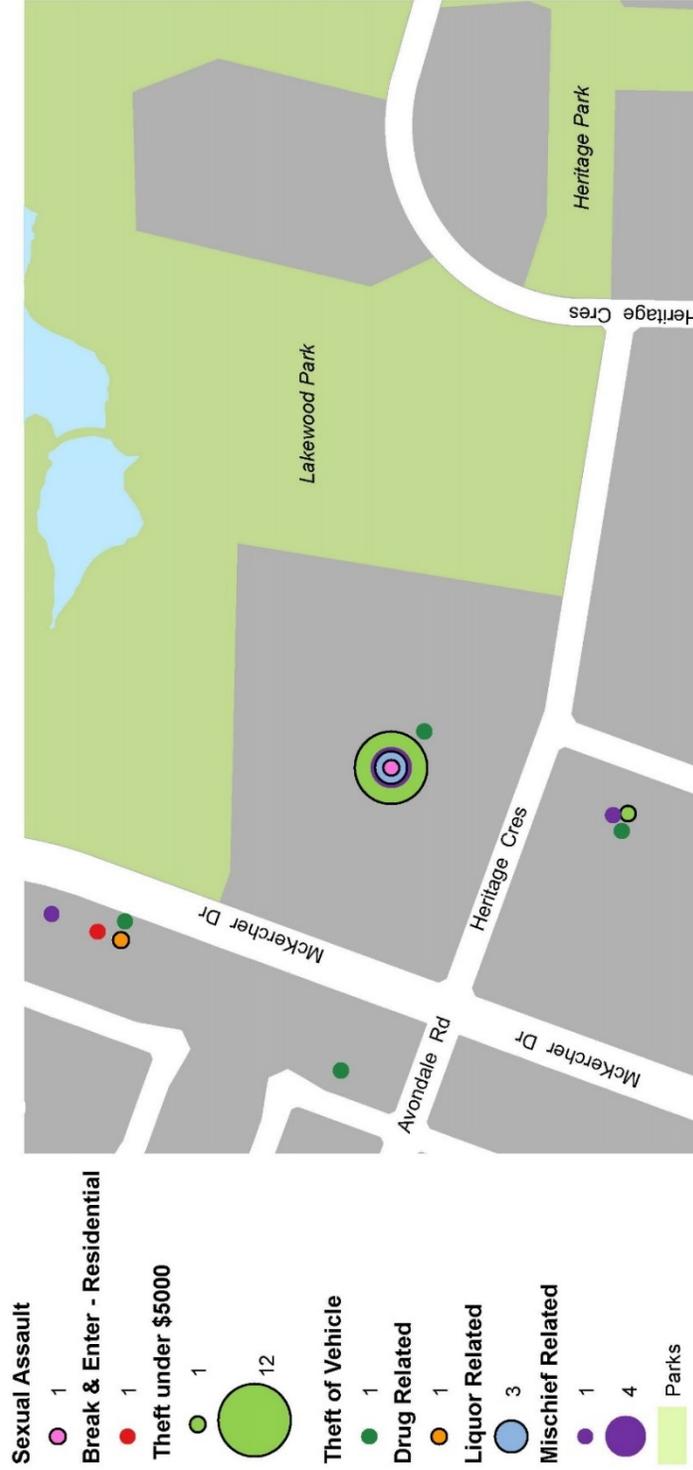
Connectivity: refers to the social and physical interactions and relationships external to the site itself. It recognizes that any given place should not operate in isolation from surrounding neighbourhoods and/or areas. Features such as walkways and roadways connecting a particular land use to the surrounding neighbourhoods and/or areas can accomplish this. Features such as centrally located community centers or program offices can also encourage activities to enhance this.

Capacity: is the ability for any given space or neighbourhood to support its intended use. For example, excessive quantities of similar land uses in too small an area, such as abandoned buildings or bars, can create opportunities for crime. When a place is functioning either over or under capacity, it can be detrimental to neighbourhood safety.

Culture: is the overall makeup and expression of the users of a place. Also known as “placemaking”, it involves artistic, musical, sports, or other local cultural events to bring people together in time and purpose. Physical designs that can encourage this include public multi-purpose facilities, sports facilities, and areas that local artists and musicians might use. Community memorials, public murals, and other cultural features also enhance this. These features create a unique context of the environment and help determine the design principles and policies that best support the well being of all user groups and contribute to their cohesiveness.

Attachment 2:

Lakewood Civic Centre Area
Selected Crime Statistics for 2019



11/5/2021
Data Source: Saskatoon Police Service
Document Path: N:\Planning\ESRI\Crime\requests\Wildwood\LakewoodCivicCentre_2019-2020\incidents.mxd

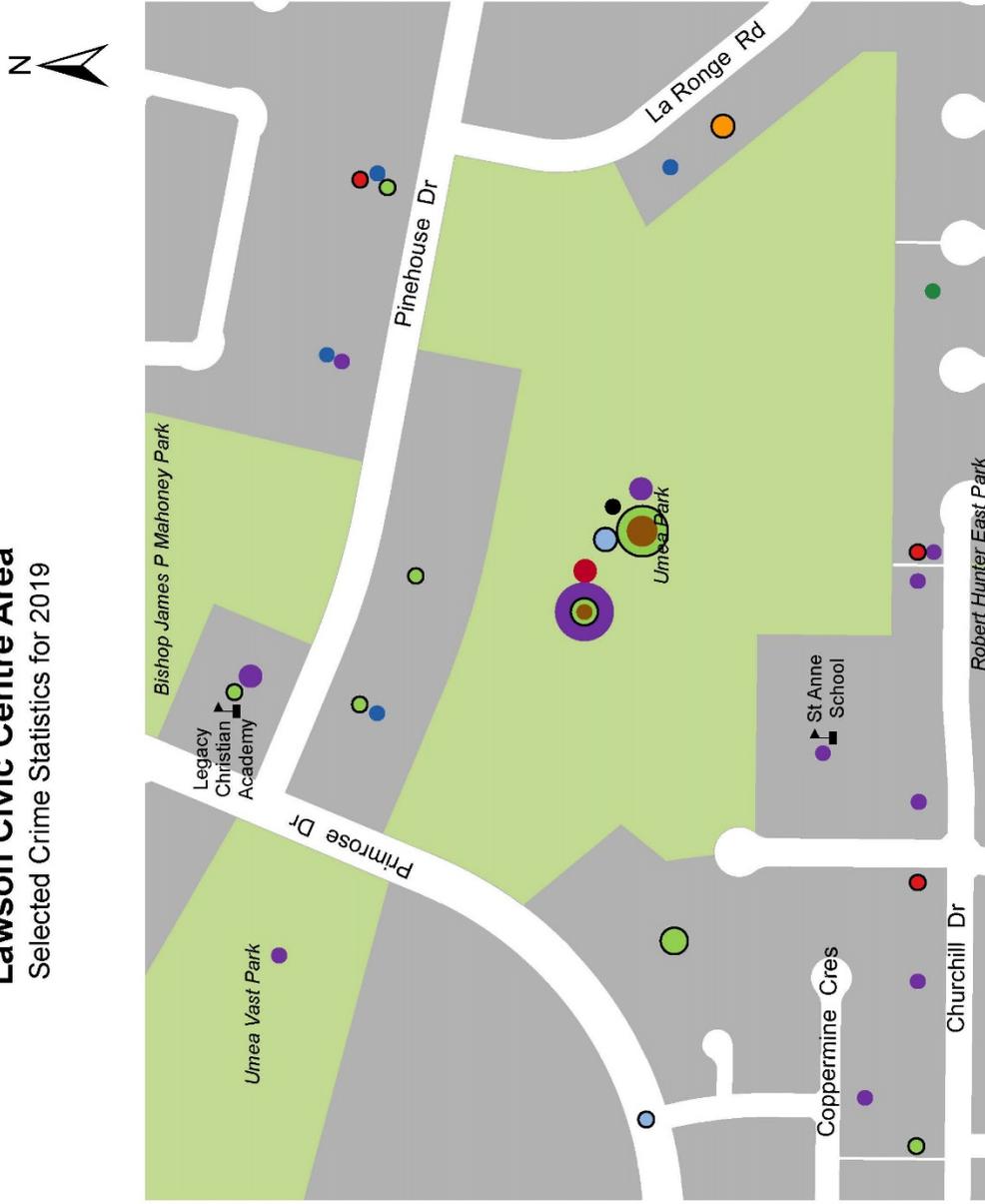
Lakewood Civic Centre Area

Selected Crime Statistics for 2020



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Lawson Civic Centre Area
Selected Crime Statistics for 2019



- Break & Enter - Residential**
 - 1 (Red circle)
- Break & Enter - Non Residential**
 - 1 (Blue circle)
- Theft over \$5000**
 - 1 (Green circle)
- Theft of Vehicle**
 - 1 (Brown circle)
 - 3 (Dark Brown circle)
- Theft under \$5000**
 - 1 (Light Green circle)
 - 2-3 (Medium Green circle)
 - 7 (Large Green circle)
- Violence Related**
 - 2 (Red circle)
- Drug Related**
 - 2 (Orange circle)
- Liquor Related**
 - 1 (Light Blue circle)
 - 2 (Medium Blue circle)
- Mischief Related**
 - 1 (Purple circle)
 - 2 (Dark Purple circle)
 - 10 (Very Large Purple circle)
- Arson**
 - 1 (Black circle)
- School** (Black triangle icon)
- Parks** (Green square icon)



11/8/2021
Data Source: Saskatoon Police Service
Document Path: N:\Planning\ESR\Crime\requests\Lawson Heights\LawsonHeightsSC_2019-2020\incidents.mxd



11/8/2021
Data Source: Saskatoon Police Service
Document Path: N:\Planning\ESR\Crime\requests\Lawson Heights\LawsonHeightsSC_2019-2020\incidents.mxd