Municipality of Chatham-Kent

Chatham-Kent Police Service

Office of the Chief of Police

To: Mayor and Members of Council

From: Gary Conn – Chief of Police

Date: May 13, 2024

Subject: CKPS - CCTV project “Birds Eye View”

Recommendations

It is recommended that:

1. Council approve recommendations to expand the Closed-Circuit Television System project “Birds Eye View”, to deploy additional cameras at core locations in downtown Chatham, Wallaceburg, Blenheim, Ridgetown and Tilbury, at a cost of $772,920 (including HST).
2. Capital costs of $273,735 (net of HST rebate) be funded from the Strategic Reserve.
3. Operating costs of $84,461 (net of HST rebate) be funded from the Strategic Reserve for 2024 and ongoing operating budget impacts will be addressed as part of the 2025 annual budget update including possible offsetting grant opportunities.

Background

In 2020, the Municipality of Chatham-Kent (MCK) and the Chatham-Kent Police Service (CKPS) received approval from the Council members and the mayor, to move forward with a closed-circuit television system (CCTV) pilot, to improve community safety, crime prevention, and attract visitors and tourism to boost local economy. An initial six locations were identified, and four cameras are now operational. This report reviews the output of the initial pilot and recommendations to further enhance the solution and extend the coverage to other key locations across Chatham-Kent.

CKPS applied for the Ontario CCTV Grant Program and has successfully secured $37,993 initially and then $64,250, for a combined total of $102,243 support for this initiative. The pilot resulted in a series of CCTV cameras being installed on City infrastructure in the downtown core of Chatham, in areas that have been identified as having higher crime and anti-social behavior. These cameras are passively monitored and accessed after the fact, with signage posted at each location, notifying the public that recording is occurring in that

area.

Four cameras were placed at primary locations where it was deemed the most benefit would be realized. The existing pilot solution has limited monitoring capabilities and is reactive in nature. The cameras do not record license plates, nor can they zoom in for detailed information, as examples. There are no analytic capabilities, and all footage must be reviewed manually. The current CCTV connection is run via fiber cable from each location back to Police HQ. Every location is physically connected to a firewall separated from the CKPS infrastructure, which then connects to the existing CCTV platform in place, that provides cameras for CKPS property, cells, and interview room recording.

All data is physically stored within CKPS infrastructure. There are limitations to the number of fiber connections that can be added, connectivity speeds, and the physical hardware in both server and storage space. The infrastructure requirements were scaled only for the pilot. To upgrade any further, there will be a need for additional fiber connections, more SAN storage, and potentially upgraded connectivity speeds, to further expand the capabilities of the solution. The servers and storage would also increase significantly, as well as software and support costs. CKPS would be responsible for the management of the entire system.

While the focus of the project is to adopt a solution with analytic capabilities, the pilot is not without value and benefit to the community and has demonstrated the value of having a surveillance system. The solution has allowed CKPS to gather evidence, determine at-fault claims, and also reduce resources and time spent locating vital evidence and video footage. The system is a proactive crime deterrent and provides a sense of safety and comfort for residents and businesses. Many citizens feel unsafe in downtown Chatham at night, and businesses look to the police to explore various strategies to reduce crime. These businesses are significant contributors to our local economy and are supportive of a CCTV presence in as many locations as is viable.

The responsible use of video recording technology is not a replacement for Police Services; it is a valuable investigative tool to assist their effectiveness and potentially reduce the amount of time required to solve a serious crime. Ultimately, this allows officers to be out in the community conducting proactive duties, managing calls for service, and performing other crime prevention initiatives.

Comments

The next goal and phase of this project is to further enhance security in downtown Chatham-Kent and expand the CCTV program to more key locations before progressing to other communities across the region. CKPS continues to monitor solutions that bring additional capabilities, reduce costs and future-proof the investment in the technology. A well-designed and operated CCTV system is a cost-effective and reasonable response to crime in the core areas.

Throughout the pilot phase, engagement with other Law Enforcement Agencies (LEAs) has continued to monitor the progression of CCTV capabilities, and review Government initiatives and changes to various acts and legislations to ensure the solution not only meets current needs but has a focus on future requirements in the prevention and detection of criminal activities, as well as public and officer safety.

In discussions with LEAs that are mature with their CCTV services, a solution was identified as having extensive proactive monitoring capabilities, but also a much more robust approach to connectivity which would aid with the cost management of adding more cameras in additional locations. Furthermore, the solution is cloud-based, offering unlimited highly secure storage on an Amazon Web Services (AWS) Government platform, which would alleviate pressures on the CKPS infrastructure and ensure data residency in Canada. The system is not identified for security purposes.

Designed with simplicity and scalability in mind, this hybrid-cloud solution brings together leading camera hardware technology with intelligent and easy-to-use software creating a powerful surveillance system that is easily accessible, 24/7, on both desktop and mobile devices. From an investigative perspective, the CCTV software allows officers to quickly search for key identifiers for both the public and vehicles. In situations of missing or vulnerable persons, CKPS will be able to search video footage across all cameras to locate the individual based on descriptions of clothing.

All video is highly encrypted and stored both securely on the cameras themselves with AES 128 and in transit (via TLS v1.2, and RSA) and in the cloud with AES 256. No NVRs/DVRs/Servers, or other storage modality is required. No personal identifiers are being stored (i.e., who the citizens are, criminal records, etc.) and the data is being used as investigative only. Only select users (authorized personnel) will have access to the system and all viewable information is auditable to ensure proper policies and standards are being followed. The number of employees who have access to the CCTV system is limited, and we have a clearly defined policy on who should have access, in what circumstances, and for what purpose(s).

Where possible, the solution will be connected using cell technology, in an encrypted format, to be stored in the secure AWS platform. This will significantly reduce initial build and connectivity costs and give flexibility with data costs. MFA (multi-factor authentication) is being used to log into the site for access where access is limited to select members (which is all auditable). If cell technology cannot be used, point-to-point protocols will be established directly to HQ in an encrypted format.

The solution provider will deliver periodic upgrades empowering CKPS with the latest firmware advancements at no additional cost, such that this system will continue to improve and meet our needs as they evolve over time.

Barrie Police Services are using this technology and attribute the resolution of several serious crimes to the CCTV system, including a robbery with a victim stabbed, sexual assault and a shooting investigation. The cameras were used to identify suspects in each situation and expedited the investigative process significantly.

The key benefit of CCTV is to quickly source identifiable information and aid in investigations. Some of the local events that CCTV has brought value for CKPS from the existing passive solution include:

- Bank Robbery - solved in part due to video showing the suspect leaving a bank. Sufficient detail to identify the suspect based on recent contact with them. Direction of travel seen, and video viewed immediately after occurrence with minimal delay for updates to members on road.
- Weapons call solved/support evidence gathered - video showed suspect pointing rifle at individuals and cars. Also showed the suspect ditching weapon into the river which led to dive team call to retrieve, and validated witness statements.
- Arson - a suspect was identified based on clothing and gait.
- Fail To Remain (FTR) Collision solved – video of collision (between a bicycle and vehicle) in distance and path of travel of suspect vehicle toward camera lead to identity of suspect driver and charges of FTR.
- Motor Vehicle Collision (MVC) - video assisted showing unsafe move by charged driver and colour of lights to support statement of victim. Evidence of the offence led to charging the driver with injury collision.
- MVC – video assisted showing action of e-bike rider running into a car, supports statements of driver for injury claim.

These examples highlight the significant impact that CCTV brings to law enforcement. Adopting Artificial Intelligence (AI) capabilities will bring further investigative abilities, proactively alerting CKPS to potential criminal activities, as well as investigative options to seek footage for offenses, citizens, and vehicles. Using advanced AI, the cameras can identify potentially suspicious behavior, like a person getting too close to a closed business or loitering near a vehicle. This activity will automatically be escalated, with alerts sent to front-line officers to attend the scene proactively.

The solution also has Automatic License Plate Reader (ALPR) technology and will provide vital vehicle identification capabilities. CKPS has ALPR technology built into all front-line vehicles but has an extensive geography to cover. The ALPR cameras would be situated in key traffic areas providing continuous monitoring and further enhancing the existing ALPR service. Future development would connect the ALPR cameras to the Axon solution, sending amber alerts, stolen vehicles, and missing person details from the CCTV on the street, straight to the patrol cars and expanding the reach of ALPR in a proactive alerting manner.

The surveillance system will include the ability to remove or redact information from the video footage, to protect exempted information by using tools and techniques such as blacking out or blurring images of individuals and removing the sound of voices, and masking windows of private premises as examples. Although the system will contain video of citizens and vehicles, the solution does not actively cross reference across any other databases. The camera system can be used proactively to search for identifiers such as clothing, vehicle markings etc. but does not comparatively search any databases for specific individuals or vehicles.

Individuals whose personal information is in the custody or under the control of institutions have a right of access to that personal information under section 47(1) of FIPPA and section 36(1) of MFIPPA. It is important to note that all or portions of the video surveillance footage requested may be exempt from disclosure for several reasons under FIPPA and MFIPPA, including the fact that disclosure may result in an unjustified invasion of someone else's privacy. Accordingly, a policy is in place to facilitate responses to access to information requests.

The current proposition is for thirty days of storage; however, it has the scalability to provide up to 365 days on the AWS Government cloud within Canada, and unless needed for investigation purposes, will overwrite any former footage. There is no mugshot database or facial recognition within the AI solution. Footage required for investigative purposes, or disclosure, will be downloaded and added to the CKPS Digital Evidence Management platform (DEMS) and data on the cloud will be retained and removed in accordance with TOMRMS, MFIPPA, FIPPA, municipal bylaws, federal and provincial policing regulations.

CKPS will also ensure compliance with the Information Privacy Commission (IPC) expectations regarding the Identification of Criminals Act (ICA), the Charter of Rights and Freedoms, section 8, which refers to reasonable expectation of privacy. Also, the Ontario’s Human Rights Code has been reviewed for compliance around the recording of any identifiable information and how that data is stored, accessed, and disposed of in accordance with previously mentioned policies, bylaws, and regulations.

The Community Safety CCTV system will allow CKPS to gather evidence, observe and analyze activity in specific areas downtown to deal with quality-of-life and complex social problems such as public intoxication, vandalism, drug trafficking, mischief to property, metal health and homelessness, in addition to the more serious crimes of assault, robbery and homicides. It is expected that unlawful activities in the monitored areas will be reduced and that there will be an increased perception of safety. Clearance and apprehension rates are expected to increase for crimes committed in these areas. Over time, these impacts will enhance the value of the downtown areas across every community.

To fully understand the capabilities of the proposed new system, CKPS has implemented a small pilot utilizing a quad lens at a prime downtown Chatham location, and two bullet style cameras to monitor an area of high activity and traffic control. Within only 7 days of implementation, the solution has proven its AI capabilities, assisting in two significant incidents:

- High Risk Missing Person - the pilot cameras with AI capabilities were used to search for both person descriptors and vehicles associated with the missing adult. The results of the search helped to exclude that neither the person nor vehicle were in the area the complainant mentioned which helped investigators narrow down the search grid. The male was located safe because of the investigation.

- Knife Wielding Suspect Arrested - a pilot camera captured an incident where a male party was alleged to have wielded a knife at individuals in the downtown core. The footage obtained helped to validate the complaints made by those affected and will assist in the prosecution of the male party.

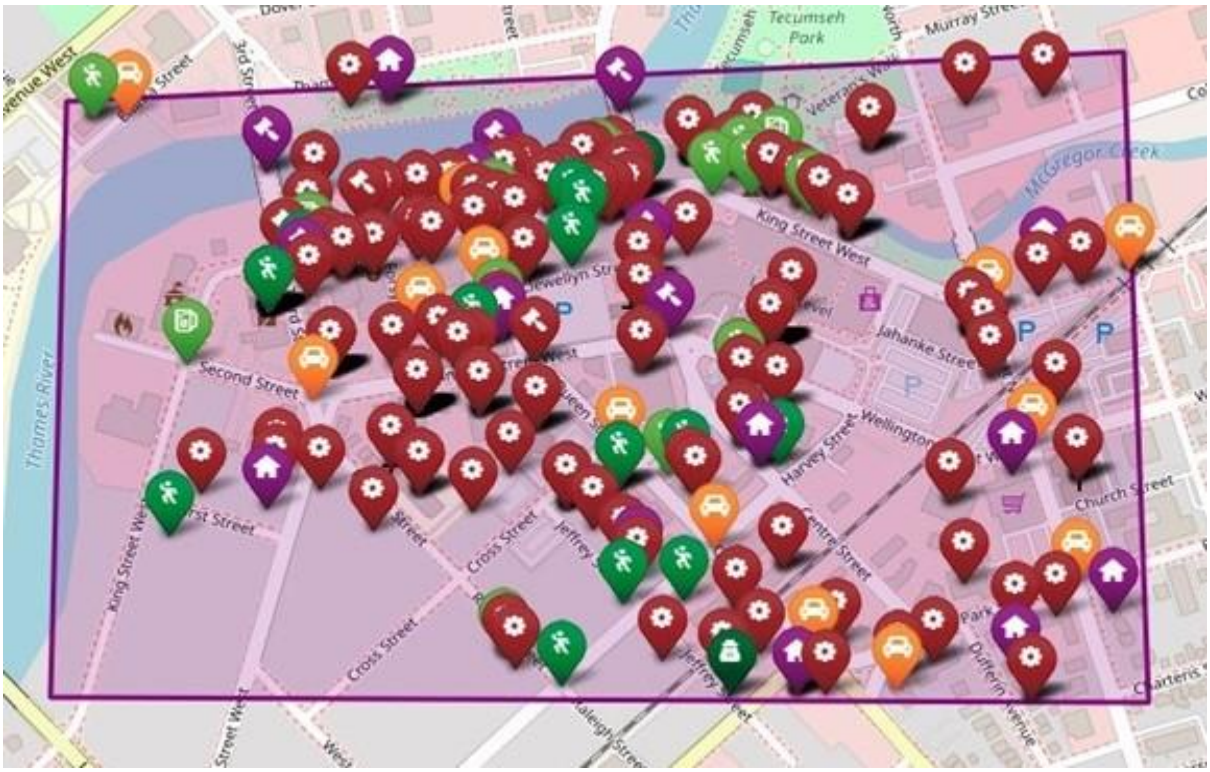
Once the system is fully deployed, the data sourced will span the entire CCTV surveillance system and bring back information that can be analyzed instantaneously to expedite investigations, search multiple locations in one instance and eliminate time wasted canvassing in the traditional manner.

Crime analytics maps covering a period of one year and highlighting incidents in which CCTV would have been most advantageous, have been created for Chatham, Wallaceburg, Tilbury, Ridgetown and Blenheim. Additional towns would be added in the future. The data covers all serious police and fire related incidents, as well as, but not limited to, motor vehicle collisions, suspicious persons/vehicles, thefts, and drug related offences.

Cameras would be deployed primarily in downtown core areas across all five towns as proposed. The cameras all have built in AI capabilities and range from a bullet style observation camera, a quad lens with four built in cameras, ALPR enabled bullet cameras (only ALPR detection, no recording) and a 360-degree PTZ. The quad lens can magnify up to 150 feet, the bullet cameras up to 150 feet and the PTZ can zoom up to 600 feet covering vast observation areas or large crowd events and can enter an automatic patrol in sentry mode to zoom in and focus on areas of activity.

It is proposed that a total of thirty-five fixed CCTV cameras would be deployed across the region, with three special event/ADHOC cameras for major incidents or public/special events as examples, and more cameras added across the municipality as required. The incidents noted on the crime maps include, but not limited to, stolen & motor vehicles collisions, theft, suspicious persons, assaults, break & enter, drug related offences and missing persons:

Chatham:

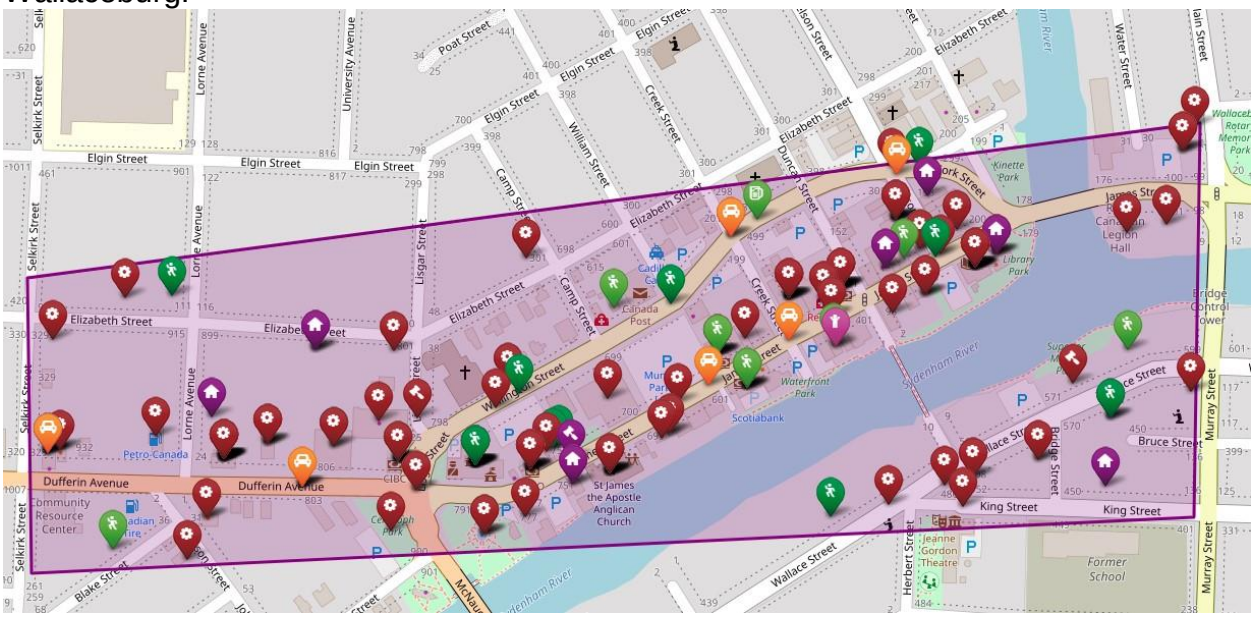


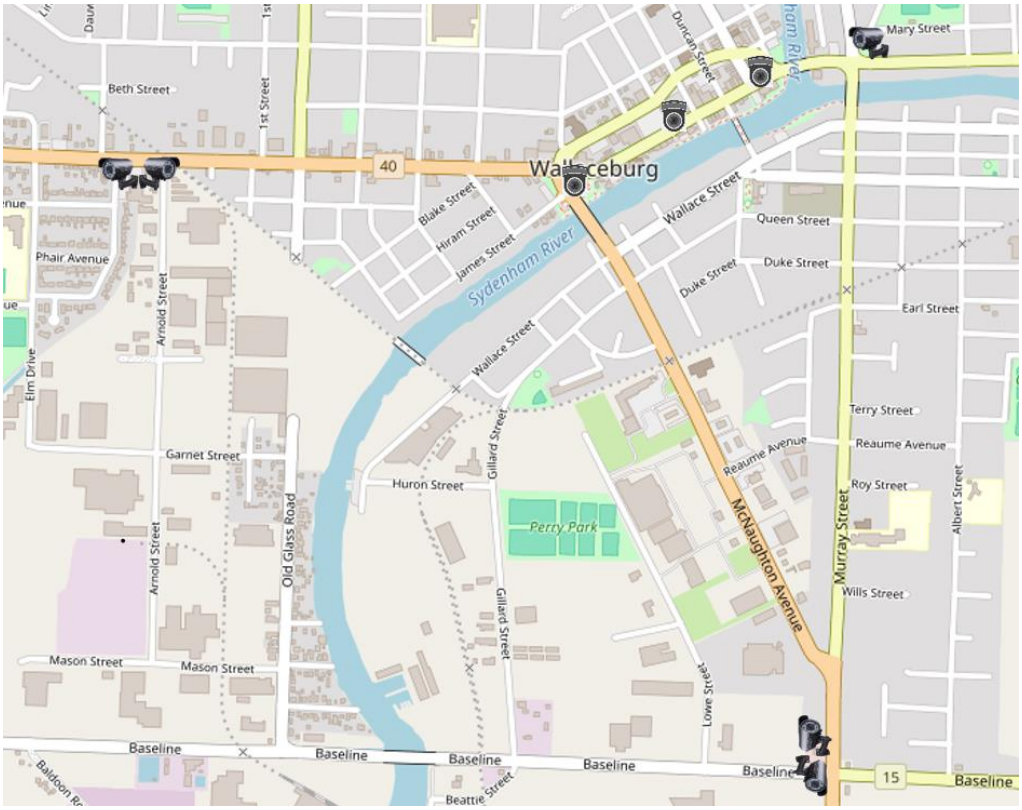
Chatham (six quads, seven bullets, one PTZ):

1) Quad – King and Third
2) Quad – King and Fourth

3) Quad – King and Fifth
4) Quad – King and William
5) Quad – Tecumseh Park near the band shell
6) Quad – Richmond and LaCroix (High Accident location)
7) PTZ - Tecumseh Park on top of the washrooms
8) Bullet – Queen Street south of Wellington-facing north
9) Bullet – Queen Street south of Wellington-facing south
10) Bullet – Third Street bridge facing north.
11) Bullet – Fifth Street bridge facing north.
12) Bullet – Park Ave E east of Park Street-facing east
13) Bullet – cenotaph
14) Bullet – cenotaph

Wallaceburg:

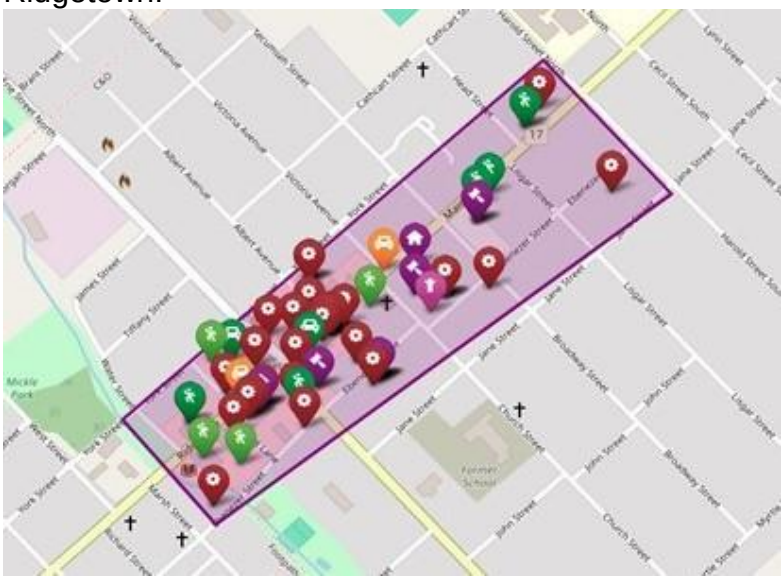


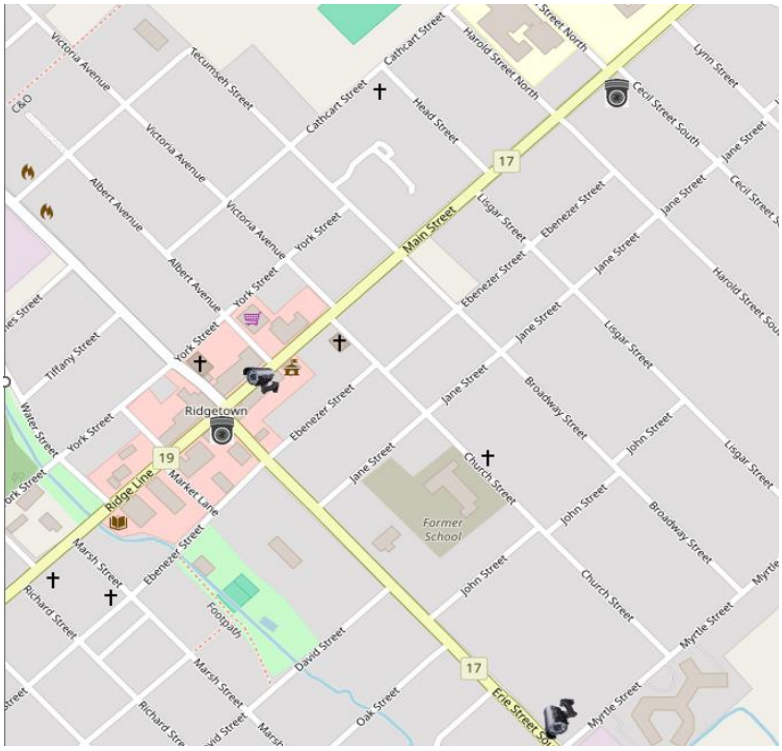


Wallaceburg (three quad, five bullet):

1) Quad – James and McNaughton
2) Quad – James and Creek
3) Quad – James and Nelson
4) Bullet – Margaret east of Murray, facing west.
5) Bullet – Dufferin west of Arnold facing west.
6) Bullet – Dufferin west of Arnold facing east.
7) Bullet – Murray south of Baseline facing north.
8) Bullet - Murray south of Baseline facing south.

Ridgetown:





Ridgetown (two quad, two bullet):

1) Quad – Main and Erie
2) Quad – Main and Cecil (by college)
3) Bullet – Main Street east of Erie looking west (both directions west of intersection)
4) Bullet – Erie Street South, south of Myrtle facing south.

Blenheim:

Blenheim (two quad, two bullet):

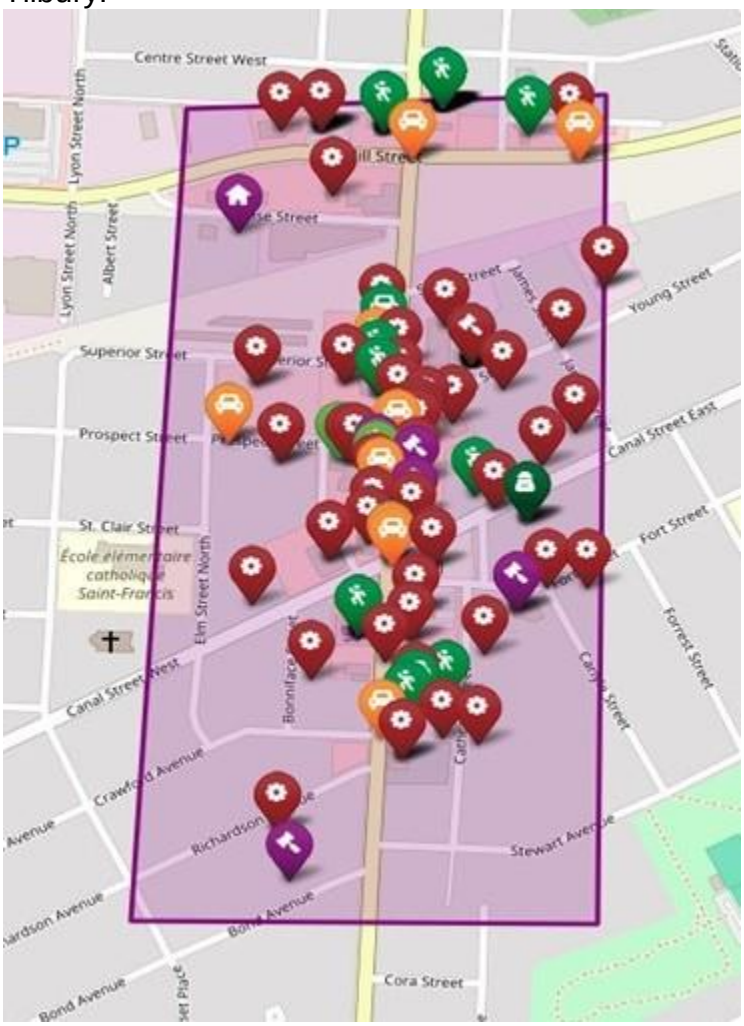
1) Quad – Talbot and Marlborough

2) Quad – Talbot and Chatham St S.

3) Bullet – Chatham St S., facing north

4) Bullet – Marlborough St S., facing north

Tilbury:


Centre Street West
Lyon Street North
Albert Street
Superior Street
Prospect Street
St. Clair Street
Young Street
Canal Street East
Fort Street
Forrest Street
Elm Street North
Canal Street West
Crawford Avenue
Richardson Avenue
Stewart Avenue
Bond Avenue
Cora Street

Tilbury (two quad, three bullet):

1) Quad – Mill St W. at Queen St.

2) Quad – Queen St S., at Canal St

3) Bullet – Mill St W. west of Queen St., facing west

4) Bullet – Mill St W. west of Queen St., facing east

5) Bullet – Queen St S. near Canal, facing south

Alarm, animal complaint, arson, attempt murder, breach probation, child pornography, fail to attend for court/prints, harassment, homicide, human trafficking, kidnapping, liquor licence control act, luring, suspicious person, trouble with youth, shoplifting, unwanted person, sexual assault.

Assault

Break & enter

Drug offences

Impaired/over 80

Mischief, theft, disturb the peac

Missing person

Motor vehicle collision

Stolen vehicle

Robbery

ALPR or bullet

Quad or PTZ

More and more Police Services in Ontario are utilizing CCTV systems in conjunction with existing crime prevention initiatives. These programs have proven to be highly successful in deterring crime, reducing victimization, and assisting in solving serious crimes. Viewing footage before attending will also ensure the right level of response is applied in advance, ensuring officer and public safety. The intention is to deploy the solution as far and wide across Chatham-Kent as is financially viable. Additional funds will be sought as required.

Council Term Priorities

This report supports the following Council Term Priorities:

			
Deliver Excellent Service	**Promote Safety & Well-Being**	**Grow Our Community**	**Ensure Environmental Sustainability**
3	2,3	4	

Consultation

The contracts for the proposed solutions have been reviewed and approved by the municipal legal department. A PIA has been conducted and all queries resolved. The solution has been assessed by the Municipal security team with no concerns.

Communication

Communication is proposed to be through the inclusion of this report on the Council agenda and related communications.

Diversity, Equity, Inclusion and Justice (DEIJ)

This report does not have implications related to diversity, equity, inclusion or justice.

Financial Implications

The existing four camera passive CCTV system is an average cost of $27,500 at each location for the hardware, software, build cost and fiber connectivity, with operating costs of $10,500 per camera, $42,00 for a five-year term. Consideration should be given to the management of the infrastructure and associated challenges increasing the hardware footprint, which would be the sole responsibility of CKPS IT team to support.

Fiber installation costs have varied based on location and quoted up to $60,000 for an additional site. Based on a similar deployment of thirty-eight cameras over a five-year period, costs are conservatively estimated at $1,567,000 covering capital, average construction, infrastructure hardware and annual costs. Current supplier has advised the annual license model is changing to subscription which would add further costs to the system. It is unknown at this point what the additional costs are likely to be and lifecycle costs for the infrastructure are not included.

The cloud-based solution purchasing model is a much more robust and flexible offering. Cameras can also be placed much quicker where there is cell phone coverage (which most downtown areas have in place) and without the need for fiber build costs. There is no need to invest in additional infrastructure and support is delivered by the solution provider, reducing the impact on the CKPS IT team. There are no infrastructure lifecycle costs and future spend is predictable based on new camera replacement. Cameras can be installed and operational within a week from placement of order.

As the new system has rapid and flexible deployment proficiency, three cameras would be held at CKPS HQ and deployed to cover public events or major incidents quickly. These would include two bullets and one PTZ as well as off grid power supply if required. This would allow CKPS to quickly implement monitoring in any area in the absence of a power supply.

The partner offers multi-year contracts to gain volume discounts, with new technology trade in options to secure the investment long term. The costs detailed cover all proposed areas of deployment, figures do not include HST:

	Capital Purchase & first year support	**Annual Operating Costs (per year)**
Chatham	$98,000	$31,000
Wallaceburg	$51,000	$17,000
Tilbury	$33,000	$11,000
Blenheim	$30,000	$10,000
Ridgetown	$27,500	$10,000
Special event/ADHOC	$28,000	$4,000
Signage costs	$1,500	
Total	**$269,000**	**$83,000**

A comparative five-year contract would cost $684,000 but with extensively more value for money, as well as the AI and proactive capabilities. The hardware will be purchased

through a cooperative purchase agreement with Kinetic GPO. and installed by the approved Entegrus partner for electrical supply.

To further its commitment to fighting crime in the province, the Ontario government has provided grants for projects to replace outdated equipment, enhance current technology, and expand CCTV camera coverage in areas where gun and gang violence and correlated crimes such as drug trafficking and human trafficking are most prevalent, as well as emphasis on vehicle theft and prevention.

CKPS has secured some funding to date and may receive further funding as the project develops however there is no confirmation when, or if, additional funds may be available. Therefore, all costs would be sought from the Municipality of Chatham-Kent and any grant funding returned to the municipality to offset costs when secured.

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Attachment(s):

None