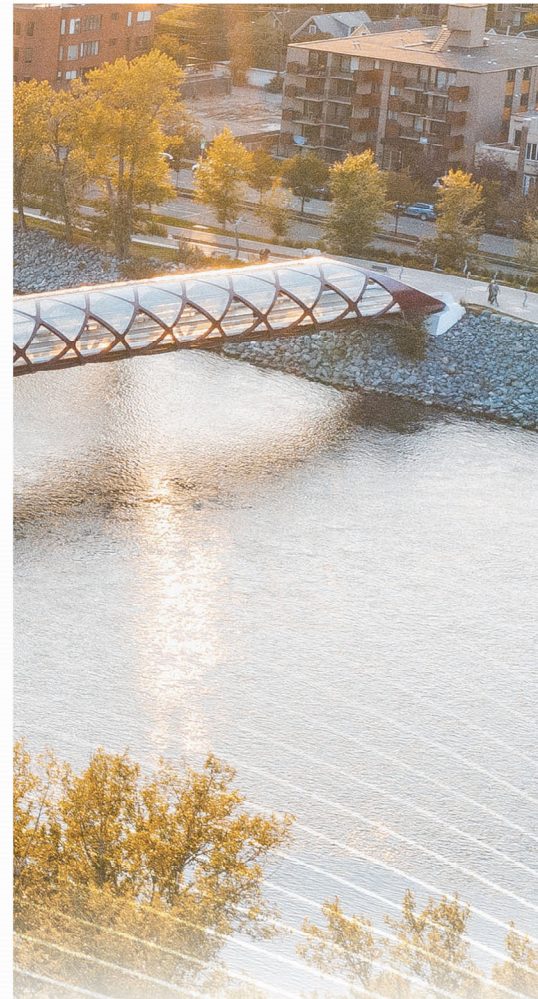
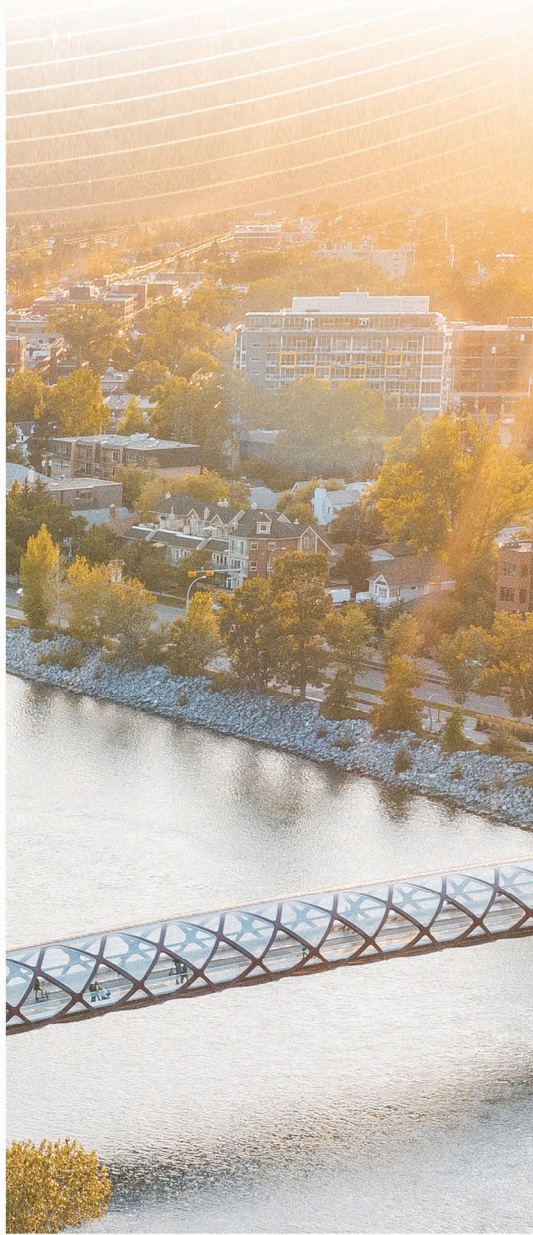




SERVICE OPTIMIZATION REVIEW

SEPTEMBER 2020



Contents

Executive Summary	3
Next Steps	6
Introduction	7
Overview of the Calgary Police Service	7
Overview of the Service Optimization Phases and Approach	7
ZBR Alignment	8
Evolving Environment	9
Glossary of Terms	9
Community Engagement	10
Patrol Deployment and Shift Scheduling Focus Area	12
Methodology	12
Financial Investment in Patrol	12
Strengths and Challenges	13
Patrol Deployment Focus Area #1: Role and Performance Measurement	14
Patrol Deployment Focus Area #2: Alignment of Workload and Staffing	17
Patrol Deployment Focus Area #3: Management of Patrol Resources	23
Patrol Deployment Focus Area #4: Demand Management and Alternative Service Delivery	25
Patrol Deployment Focus Area #5: Partnerships and Community Policing	28
Patrol Deployment Focus Area #6: Internal Policies and Analytical Functions	30
Overview of Infrastructure	32
Infrastructure Strengths and Challenges	33
Infrastructure Focus Area #1: Long-Range Capital Planning	34
Infrastructure Focus Area #2: Predictive Maintenance	37
Infrastructure Focus Area #3: Partnerships and Collaboration	40
Infrastructure Focus Area #4: Optimized Space Planning and Management	42
In Summary	44
Appendix A: Determining Staffing Methodology	45
Appendix B: Administrative Time Data	48

Appendix C: Building Condition Assessments and Deferred Maintenance	49
Appendix D: Space Usage	52
Sources	54

Executive Summary

In spring of 2018 the Calgary Police Service (CPS) commenced planning for a Service Optimization Review (SOR) under the governance of the Calgary Police Commission (CPC). This Review was requested by City Council and demonstrates the commitment to transparency and accountability for the budget process that is approved by City Council. This work was in addition to ongoing efforts to find concrete efficiencies and continuous service delivery improvements through initiatives such as the recent Functional Review, Independent Use of Force, as well as the Continuous Improvement Study of Public Safety, Canine and Tactical Units. The Service viewed the SOR as an opportunity to take a step back from day to day emergency response and operations to find ways to approach business processes, policies and practices differently. As a result, the Review was able to identify significant opportunities for cost avoidance, productivity gains, service improvements, and safeguarding employee wellness. If the Service was to stay status quo without the SOR, there would be continued need to request significant growth to the operating and capital budgets. This demonstrates the tremendous value of this work for both the CPS and the City of Calgary.

The SOR proceeded with an understanding of the need to ensure that the recommendations support both the protection of public and employee safety, while also ensuring the organization is financially sustainable. Given the commitment and resources required to conduct the Review, the CPS wanted to ensure that it was maximizing the value of the process.

The Review was grounded in the following primary considerations:

- Commitment to community safety and employee wellness.
- Mandated and legislative requirements.
- Alignment to citizen and CPC expectations.

The SOR had several phases and at key milestones, the deliverables were presented to the CPC for governance and oversight. The organizational scan phase identified key areas of opportunity where the Service could realize the most impact on efficient and effective service delivery. From that process the CPS utilized a decision-making framework to choose two interrelated focus area reviews.



The focus area reviews involved systematically evaluating patrol deployment and shift scheduling, as well as infrastructure capital planning at the CPS to achieve the following objectives:











1. **Tangible improvements related to service outcomes, employee engagement, safety and partner relationships.**
2. **Consider options and make recommendations for efficiencies, capacity building and improvements to service delivery.**








Given these outcomes the Review took the following evidence guided approach to developing recommendations with the assistance of independent consultants.



The table below summarizes the key commitments, recommendations and anticipated outcomes that emerged out of the Review. The following legend provides the visuals representing key outcome areas.

		
Efficiencies	Employee Engagement & Wellness	Service Improvements

Patrol Deployment Review Focus Areas		Opportunities
Role and Performance Measurement of Patrol		
Commitment: Align the role and performance measures of patrol to reflect the needs of the community, CPS Strategic Plan, as well as the evolving environment.		 
Alignment of Workload and Staffing		
Commitment: Continually monitor patrol workload to ensure appropriate staffing and identify opportunities for efficiencies from improved processes.		  <i>Minimum estimated productivity gains of \$590,235</i> <i>Estimated Cost avoidance of \$2.5M</i>
Management of Patrol Resources		
Commitment: Efficiently manage existing patrol resources to ensure effective service to the community, while safeguarding officer wellness.		 
Demand Management and Alternative Service Delivery		
Commitment: Leverage demand management mechanisms and alternative service delivery options that decrease the workload of patrol officers, while still ensuring the needs of the community are met.		
Partnerships and Community Policing		
Commitment: Continue to strengthen partnerships for service delivery into the future and increase the role of patrol in community policing.		
Internal Policies and Analytical Functions		
Commitment: Improve internal processes and policies that support the effective management of patrol functions.		 

Infrastructure Capital Planning Review Focus Areas	Opportunities
Improved Long-Range Capital Planning	
Commitment: Improved management of the current and future infrastructure portfolio through long term strategic planning.	  
Predictive Maintenance	
Commitment: Improve the monitoring of assets and address the identified deferred maintenance gap.	 <i>Estimated savings of \$800,000 from City partnership</i>
Partnerships and Collaboration	
Commitment: Appropriately collaborate with the City's infrastructure planning and management services	 
Optimized Space Planning and Management	
Commitment: Significant efficiency opportunity to adopt space standards and policy measures to support the effective use of space.	 <i>Estimated space savings range from 14,624 - 21,680 m²</i>

Next Steps

The CPS will continue to work with the CPC to develop an implementation plan that includes costing, short, medium and long-term actions, as well as timelines. There were several areas of anticipated efficiency that presented challenges to accurately estimate for this report, therefore additional efforts will be employed to ensure that the CPS is able to prioritize the areas with most efficiency and positive impact to service delivery in the implementation phase. The CPS will begin conducting implementation planning in September 2020 and will regularly report to the CPC on progress.

Introduction

Overview of the Calgary Police Service

The mission statement of the CPS is “As One Team we build community safety and well-being through education, prevention, investigation and enforcement.” This mission statement highlights that the primary stakeholder for the CPS is the community. The CPS works in partnership with the community to provide policing services to Calgarians and visitors. The primary service lines that the CPS provides alongside community partners include:

- Community presence and engagement.
- Responding to calls for service.
- Prevention, education and early intervention.
- Investigation and intelligence-led policing.
- Traffic safety and education.
- Major events management.

The Service’s structure is organized into the Office of the Chief and four Bureaus that support the services listed above:

- Bureau of Investigative Support.
- Bureau of Community Policing.
- Bureau of Service & Community Support.
- Bureau of People & Organizational Development.

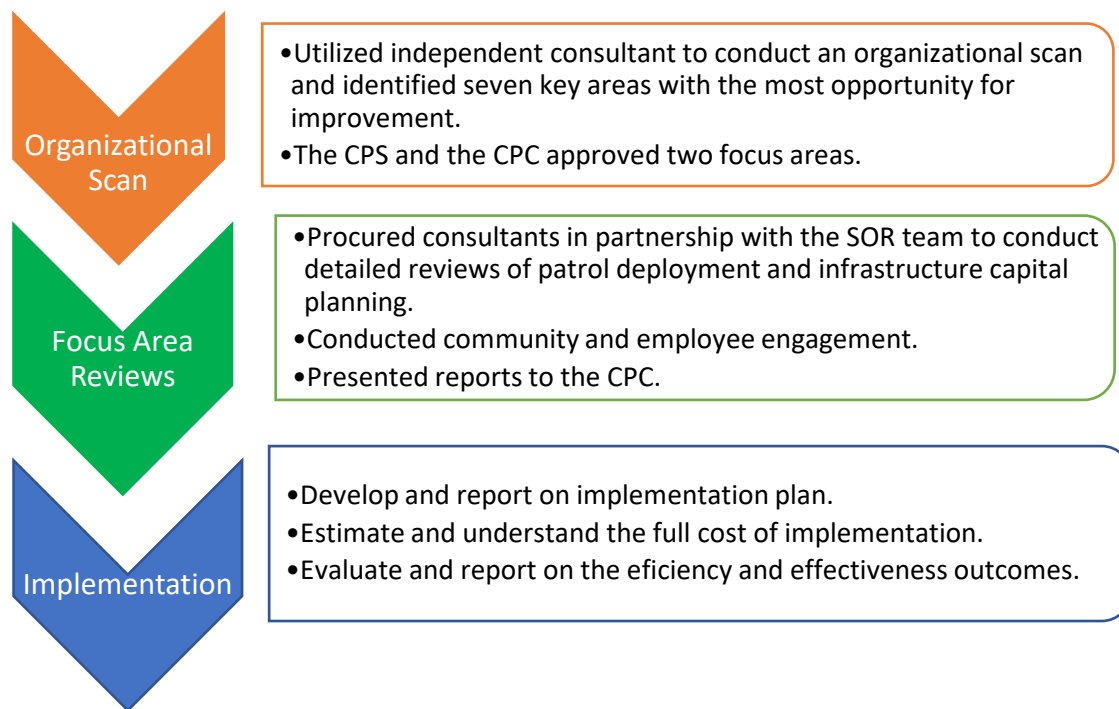
Investment to provide community police services to Calgarians

 Authorized Budget \$394 Million (2019)	 Five Year Capital Program \$37.5 Million (2019-2022)	 Facilities 29	 Positions 2873	 Full-Time Police Officers 2113	 Civilian Positions 760
---	---	--	---	---	---

Overview of the Service Optimization Phases and Approach

The CPS initiated the SOR; a zero-based aligned review to identify efficiency and effectiveness opportunities in areas of its service in 2018. This work was initiated as part of the broader Council direction that all business units participate in a ZBR.

The Review’s phases are summarized below:



ZBR Alignment

The SOR, through its terms of reference established that the Review would not be called a ZBR because it would follow a different reporting process to recognize the role of the CPC in governance. However, the commitment of the CPS in conducting this review, was to ensure that it was aligned with the principles of the ZBR. Most prominently this alignment existed in the establishment of the objectives outlined in the executive summary, which very much align with the two core questions asked within the ZBR program:

- What opportunities exist for tangible improvement in service effectiveness?
- Whether any changes to the current method of delivering services would improve the cost-effectiveness of the service?

In addition to the primary objectives, there were several key components that were aligned.

- The organizational scan phase of the SOR followed similar principles to the ZBR *Discover and Develop* phases by identifying the focus areas that would have the most impact on community service delivery.
- The decision-making matrix to analyze the seven opportunities from the organization scan phase utilized principles of strategic alignment, efficiency and effectiveness benefits and viability to choose the two focus areas for review.
- Use of independent and objective consultants and perspectives to help determine areas for opportunities, identification of gaps and recommendations.

- Corporate Initiatives at the City of Calgary participated in the Review, with a representative present at all key decision-making meetings to provide objective perspective and knowledge of ZBR principles.

Evolving Environment

Throughout the SOR the internal and external environment experienced significant changes. When the SOR was requested in 2018, the Service was experiencing decreasing employee engagement, concerns about staffing, and had recently undergone several independent reviews.



As the Review ended, **the environment changed significantly** with the emergence of COVID-19 and increased attention on systemic racism, both having tremendous impact on the community and the CPS.



Glossary of Terms

Actual Strength: Number of personnel currently assigned to the unit.

Administrative time: Includes activities such as, report writing, training, parade, court (on-duty), meal-breaks and time for fitness.

Authorized Strength: Staffing levels as determined by allocated budgeted positions.

Building Condition Assessments (BCA): As a systematic inspection, review and detailed report on the state of buildings.

CAD: An acronym for Computer Aided Dispatching. CAD is the operational software used to manage frontline resources and maintain officer safety. It is the first point of entry for data received during an emergency and is used to dispatch patrol and other personnel to deal with calls for service, monitors available resources and time usage. The data is also used for analytics and performance management reporting.

Deferred Maintenance: Repairs to infrastructure and assets that are postponed because of lack of funding.

Occurrence Reports: Documents that result from a police investigation and are updated in a timely manner as new or follow-up information becomes available in the records management system (Sentry). Criminal occurrence reports include the different types of crimes committed, while non-criminal information reports are used at the CPS as official records for a wide range of other police interactions such as non-criminal domestic occurrences, missing persons,

individuals processed on existing warrants where no fresh-charges were laid, apprehensions under the Mental Health Act and lost & found property reports.

Officer Generated Call (Onview): A CAD event initiated by a police officer, rather than a member of the public.

Patrol Workload: Includes responding to calls for service, administrative duties, community engagement, traffic safety, offender management and officer-initiated activities.

Community Engagement

As part of the SOR the Service also wanted to conduct citizen engagement to inform the development of recommendations and implementation, as well as other service initiatives. This engagement was coordinated in partnership with the Engage business unit at The City of Calgary and utilized an independent consultant to conduct the interviews and focus groups. The original approach included both an online survey for all citizens to participate in, as well as stakeholder engagement with community groups. However, the survey was set to launch the same week the state of emergency was declared in Calgary for COVID-19. Therefore, the Service proceeded with an adjusted engagement approach to ensure there was still citizen perspectives included in the Review. This new approach focused on the community stakeholder engagement aspect and the survey was cancelled. This also helped to ensure there was no timeline overlap with the Police Commission citizen survey. The engagement process spanned approximately five weeks from the end of May until the end of June 2020. The consulting team interacted with about 40 participants through 13 interviews and five focus groups.

As summarized in the *what we heard* section of the consultant's report:

We heard from participants that while the Calgary community has experienced mostly positive interactions through outreach, many negative interactions are occurring during the response to specific issues and service needs. We also heard about the lack of awareness about CPS resources and services available to the community. The following themes emerged speaking to CPS's expectations, challenges and service delivery:

- Fear and trust-building – we heard it is easier to remember the bad than the good and that the biggest hurdle the CPS will encounter when it comes to interactions with the community is rebuilding trust, particularly for community members with diverse racial and cultural backgrounds, and those part of the LGBTQ+2S community.*
- Language – we heard about the importance of interpretation, accessibility and compassion when accessing police services. Many challenges and stories mentioned were related to miss-understandings and appropriate response levels.*
- Apathy of reporting – we heard about community members not reporting crimes due to lack of faith there will be a resolution and the timeliness of officers showing up.*
- Awareness – we heard community members do not know what services are available to them or who to contact to get a timely response.*

- *Technology – we heard technology should be a choice offered to the community, along with face-to-face so that the individual can decide what their preference is for their situation or response required.*
- *Collaboration – we heard cooperation with other organizations and community services is essential. It should be an opportunity for mutual learning and improvement to support community members in the best way possible.*
- *Biases – we heard the need for CPS to look at people as individuals first, put aside assumptions, ask questions and be open to vulnerability and frustrations.*
- *Infrastructure – we heard the ability to access physical infrastructure like police buildings is still a need for the community as it represents another piece of relationship building.*

It is important to note that the engagement process saw the realities and impacts of both COVID-19 and the systemic racism conversations. It was important to the CPS, to create additional space for engagement about systemic racism and diverse experiences with police service delivery. The themes and findings do not reflect the views of Calgary's entire population, but like all public engagement, it is a snapshot of the conversations with those who participated in the engagement process. ¹

¹ Argyle Public Relationships, (July 2020). *Service Optimization Review Community Engagement Report*.

Patrol Deployment and Shift Scheduling Focus Area

Methodology

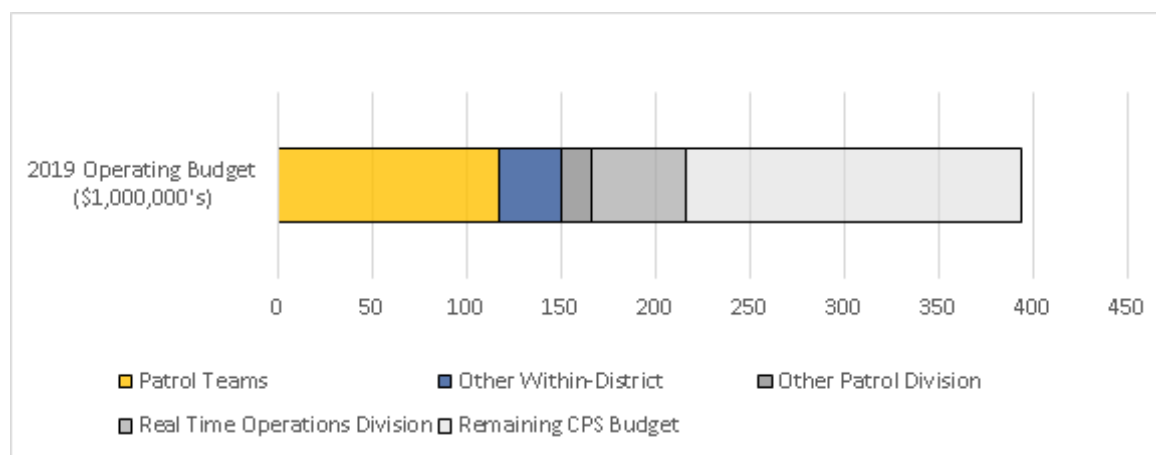
The key focus of the patrol deployment focus area was on ensuring that the existing patrol resources were being utilized as efficiently as possible. This was done utilizing a combination of data/information from citizen and employee engagement, CAD, time keeping software, literature and some benchmarking. The scope of the Review was to look at areas such as call prioritization, understanding various aspects of patrol workload and staffing, business and administrative processes of patrol, demand management opportunities and impact of land use and development on service delivery.

Concurrent to this Review, the Service implemented a new data delivery software tool that delivered significant cost savings. However, this limited access to CAD data and software transition required SOR analytical resources to support it, in addition they were also required for COVID-19 response and other Service priorities. Therefore, several recommendations had to be scaled back and require further study. However, a significant analytical foundation was laid during this review that sets the Service up to leverage staffing and workload analytics into the future.

Financial Investment in Patrol

The scope of the Review was primarily focused on the patrol teams within the districts, which are comprised of 810 patrol constables and 80 sergeants. Figure 1 outlines patrol's current operating budget as context to the cost of their service delivery. It also includes related areas that support or work alongside patrol but does not include equipment and facility costs. The average annual clothing and equipment is \$1,756,51.00 and the fleet is \$24.7M.²

Figure 1: Patrol Teams as a Proportion of CPS and District Operating Budgets



Data notes:

Patrol Teams includes all district Teams A-J but does not include equipment and vehicles;

Other Within-District includes additional district resources such as Beat Teams, Community Resource Officers, Generalized Investigations and district administration;

² The average purchase and setup costs for vehicles is \$76K.

Other Patrol Division represents resources not included in the district budgets (i.e. the Traffic Section and senior management)

Real Time Operations Division includes the Support Section, Investigative Operations Section, Major Event and Emergency Management Section. This Division plays a significant role in supporting patrol.

Strengths and Challenges

After a detailed review, an external consultant and the SOR team discovered the following high-level organizational strengths and challenges.

Strengths	Challenges
Commitment to continuous improvement through several recent independent reviews of internal processes and approaches impacting patrol.	Lack of an evidence-based approach to staffing and workload analysis to ensure that patrol resources are being used efficiently. This capability was utilized by the Service in the past but there has been a shift away from it in recent years.
Engagement with patrol officers revealed a strong dedication to the community and service delivery. Ensuring they have the capacity to support victims of crime and conclude investigations were of particular concern to them.	Significant changes in the internal and external environments that patrol operates in, which impacts the workload, coupled with a lack of clear prioritization within the role of patrol.
Strong crime and intelligence analysis that positions the CPS to prevent and investigate criminal issues in the community.	Supervisory training and support for patrol supervisors specifically for the management of resources is limited. However, significant training exists for operational responsibilities.
Significant wellness supports for employees including psychological services, road to mental readiness training and physical exercise.	Some inconsistencies in how activities and time is tracked across the patrol districts, that make it challenging to fully understand workload and set organizational performance measures.

There are five key focus areas of findings and recommendations that are included as part of the patrol deployment review. However, each of these areas is interrelated and builds together to ensure efficient and effective CPS frontline service delivery.

Patrol Deployment Focus Area #1: Role and Performance Measurement

Throughout the Review process, the question around the role of patrol and how performance outcomes were measured continually emerged from officers' input and the analysis of available data/research. This section provides a foundation for the remaining patrol deployment focus area sections because it highlights the need for a strategic foundation to determine the future of frontline service delivery at the CPS. As the Review progressed, the anti-racism movement and increased societal discussions about the overall role of the police in the community emerged; which also necessitates a more holistic look at the role of patrol. Determining the role and measuring performance in patrol is highly dependent on the evolving environment, training, community expectations, as well as internal/external collaboration. In addition, there are opportunities to leverage existing performance measurement tools within law enforcement.

Given the breadth of service delivery expectations, efficiency for patrol requires having a clear set of objectives and priorities. Broader organizational objectives informed by citizen expectations, strategic planning activities, legislated mandates, employee safety and wellness considerations should be the drivers for defining the role of patrol. Taking these factors into account, each police service can determine the appropriate roles and responsibilities of patrol personnel with the resources that are available. As the CPS faces budget challenges and community discussion around the role of police more generally, these decisions become more complex and require deeper levels of analysis.

Police service delivery has evolved significantly as the nature of crime is changing and becoming more complex. Examples of this include the increase in economic and cyber-crime or the opioid crises. In addition, the CPS has increased the technology and safety equipment officers utilize in carrying out their duties (examples: body worn cameras, direct data entry, personal protective equipment etc.). Due to these types of changes the Service needs to ensure it is setting appropriate performance measures for patrol that meet the needs of community while recognizing the increased demands and complexity of workload faced by officers. It is also important that these measures are continually monitored and reported on. The CPS reports quarterly on several performance areas such as police response times, clearance rate, proactive time, traffic safety initiatives etc. to the CPC governance, as part of established measures through the Service Action Plans and Budget process. However, given the changing environment it is important that the CPS utilize the data analysis foundation that was provided through the SOR to continue to monitor these existing measures and ensure the capacity to achieve the targets consistently throughout the city. In addition, research has shown the traditional metrics do not reflect the complexity and scope of contemporary policing responsibilities or the expected outcomes.³ In September 2019 the Canadian Centre for Justice Statistics (CCJS) published "The Canadian Police Performance Metrics Framework: Standardized Indicators for Police Services in Canada" (CPPMF). The intent is for the framework's proposed measures to become standardized nationally and allow comparisons over time, and across police agencies. There is an opportunity to leverage this work and for the CPS to adopt the recommended metrics. The CPPMF is organized around four pillars including:

³ Kiedrowski et al. (2013). "Canadian Police Board Views on the Use of Police Performance Measures".

calls for service, time allocation, crime, workforce health and motivation, training and professional development and trust and confidence.⁴

Current CPS patrol objectives include but are not limited to:

- Immediate availability for emergencies.
- Timely response to public calls for service.
- Community engagement and visibility.
- Traffic safety.
- Crime prevention and intervention.
- Support to community events such as cultural celebrations, Stampede and festivals.
- Criminal investigations (preliminary investigations and follow-up).
- Offender management and apprehension of criminals (warrants).
- Bringing evidence of criminal conduct before the court.

The job description for patrol is high-level and has not been updated in some time. The Service also has competencies for each rank that are developed for assessments and promotion processes. After review of performance management information and officer engagement, it was found that there was not a clear understanding of the following areas.

- The overall role of patrol in relation to the other areas of the Service.
- How patrol members and supervisors prioritize tasks, which can have an impact on how effectively and efficiently they utilize their time on shifts.
- How these objectives are incorporated into individual performance management and eligibility for developmental opportunities.

An example of the lack of clarity is patrol's responsibilities vis-à-vis specialty investigation areas for crimes such as frauds. These specialized areas also play an important role in addressing areas of crime that require more focused and specialized investigative techniques such as homicides, child abuse and cyber-crime. However, as they have grown to meet the crime issues in the community, the clarity of roles with the frontline has become less clear.

Another key evolving area impacting the role of patrol is training. This Review did not analyze in detail, the training requirements of patrol as this was looked at more closely in the Use of Force Review. The Service has continually been evaluating and looking for opportunities to improve the training approach for both recruits and existing officers. This continues today as the Service looks to engage more with the community about anti-racism and police accountability.

⁴ Canadian Centre for Justice Statistics (September 2019). "*The Canadian Police Performance Metrics Framework: Standardized Indicators for Police Services in Canada*".

Commitment: Align the role and performance measures of patrol to reflect the needs of the community, CPS Strategic Plan, as well as the evolving environment.

Recommendations:

Refine current performance measures and targets and incorporate relevant ones from the Canadian Police Performance Metrics Framework.

Re-establish and communicate response time expectations for each call priority level.

Deliver patrol services on an equitable basis throughout the City using achievable service level standards.

Anticipated Outcomes:

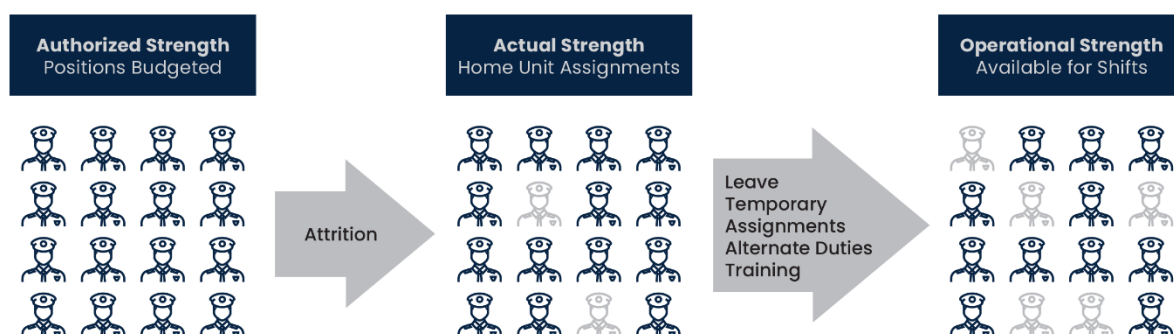
- Efficient resource use, particularly around core functions such as call response, could be improved.
- By setting appropriate performance measures, this supports the Service in ensuring staffing requirements align with workload. Continuous monitoring of properly designed measures that have been integrated into operational responses will allow the CPS to identify and stay ahead of trends in changing workload.
- Improves employee wellness by creating clear priorities and supporting frontline supervisors to effectively manage resources and competing calls for service.

Patrol Deployment Focus Area #2: Alignment of Workload and Staffing

This section deals with analysis done on both the staffing approach and workload of patrol. In order to ensure that patrol is being managed effectively and efficiently, there are several mechanisms the Service can employ including reducing administrative tasks, refining HR policies and practices and adjustments to shift scheduling. The staffing of the frontline requires significant planning to ensure that an appropriate number of officers are available to respond to emergencies throughout the city. A key consideration in this planning is accounting for the factors that impact the number of officers available for duty.

Currently, the CPS tracks three different types of staffing categories for patrol outlined in the graphic below.

Figure 2: Measures of Resource Availability



Despite tracking and monitoring overall staffing and recruitment, this Review found that the Service has drifted away from fully leveraging available data and analytics to efficiently manage patrol resources and avoid overtime and call-out costs. The Service has made some improvements in this area throughout the course of the Review to ensure that the overtime budget does not continue to increase. More specifically, the Service does have an effective time management system (InTime) and conducts higher-level planning of resource allocation, however, the day to day management of patrol staffing could be improved through organizational policies, better use of available data and consistent staffing planning within the districts. The latter would involve increased training of frontline sergeants and staff sergeants, because currently, there is limited training and HR policies to support these supervisors in their resource management roles.

A significant opportunity to ensure that patrol is staffed appropriately to workload and supported to deliver effective community policing is for the Service to reduce the amount of time officers spend outside of their frontline operational duties.

Currently, the combination of secondments, acting time, assignments, vacation and training make up the largest draw of officers away from their patrol duties (lost time). However, some of those include accommodations and the CPS will continue to support members who require assignments to support their health and wellness. Data from the CPS's scheduling software system indicated that in 2019 patrol constables had on average 56.9 days of lost time. Given the increasing complexity of patrol's role, it is likely that the training time will continue to increase. Therefore, the Service must look to the other areas reducing the amount of lost time out of patrol. Utilizing information from the CPS's InTime and CAD data systems, it was estimated that in the current state if the Service requires a team of ten officers to be regularly available on any given shift, a team size of 15 is needed. This was calculated using a well-established method called the shift relief factor (SRF) and Managing Patrol Performance (MPP) tool, which then utilizes several factors including workload, service levels⁵ and geography to determine how many officers need to be on each team to be able to meet service delivery standards. See Appendix A for further explanation of the methodology and estimation.

Preliminary analysis from the MPP tool conducted by the external consultant revealed if the CPS stayed at status quo levels of lost time, the current authorized strength would require approximately 112 additional officers to maintain equitable and satisfactory service levels across the districts into the future. Therefore, the consultant recommended that the Service look to minimize and apply increased rigour to the number of secondments and assignments outside of patrol. This also needs to be accompanied by reinforcement of the value of patrol experience for officers and their careers.

Using this established methodology, it was conservatively estimated that if **the amount of lost time was reduced by limiting secondments and temporary assignments by 10 per cent (reduction in lost time), the number of officers required would be reduced by approximately 19. Which would be a significant future cost avoidance potential of \$2.5 million annually.** Another option is to leverage the reduced lost time, which could also enable officers to increase capacity for time spent on proactive and community policing. This combined with other efforts to ensure efficient use of patrol time could reduce the number of officers required closer to current authorized strength.

Staffing Estimations	Current Authorized Strength	MPP Projected Authorized Strength Requirements (<i>Status quo</i>)	10% reduction in lost time	20% reduction in lost time
Total Patrol Constables	810	921.6	902.6	853.3
Total Cost (\$M)	\$105	\$120	\$117	\$111

**The factors utilized to make these estimates include equitable service levels across districts, maintaining response times, 60% time on calls for Service and 2 patrol units free for emergencies in each district. In*

⁵ Service levels include maintaining current response times, 60% of officer time on Calls for Service, remaining time spent on administrative and proactive time.

addition, the total cost is calculated at a rate of \$62.00/hr, which includes salary and equipment and totals an estimated \$130,000 annually.

The implementation of this recommendation must also consider that these secondments often play a significant role in fulfilling other organizational priorities including investigations and strategic organizational improvement projects. Therefore, the estimates provided above are conservative at 10-20 per cent but still point to the opportunity for significant cost avoidance impact into the future.

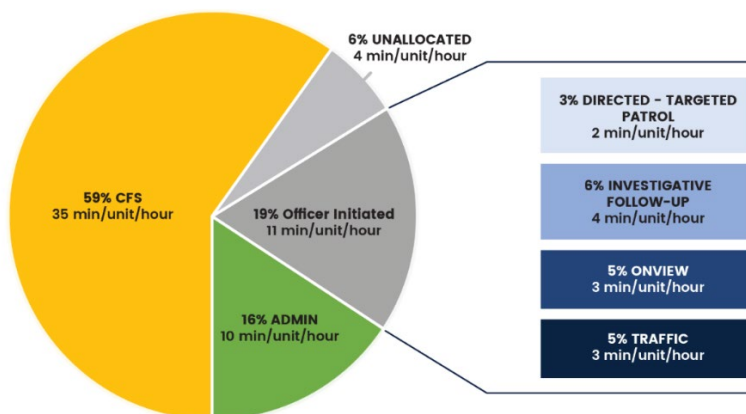
Understanding Patrol Workload

Patrol workload has several components that are tracked through CAD and reported on through the business planning process. These include seven-minute response time targets and 25 per cent officer time spent on proactive activities.⁶ These components are outlined below with the percent of time spent on each of them based on 2019 CAD data.

- Calls for Service (59 per cent): Includes responding to public calls and submitting reports when required.
- Officer initiated/proactive activities (19 per cent): Includes investigative follow-up, onview calls and traffic safety. Patrol of specific geographic areas are also included in this.
- Administrative tasks (16 per cent): Comprised largely of parade, additional report writing, meetings, on-duty court, training and breaks.
- Unallocated (six percent): Time that is not captured formally in any category.

Figure 3 shows how the percentage of patrol time is broken down between these components. This is an average across districts; however, deeper analysis revealed that these are not happening consistently across districts.

Figure 3: Patrol Time Allocation, Q2-2019



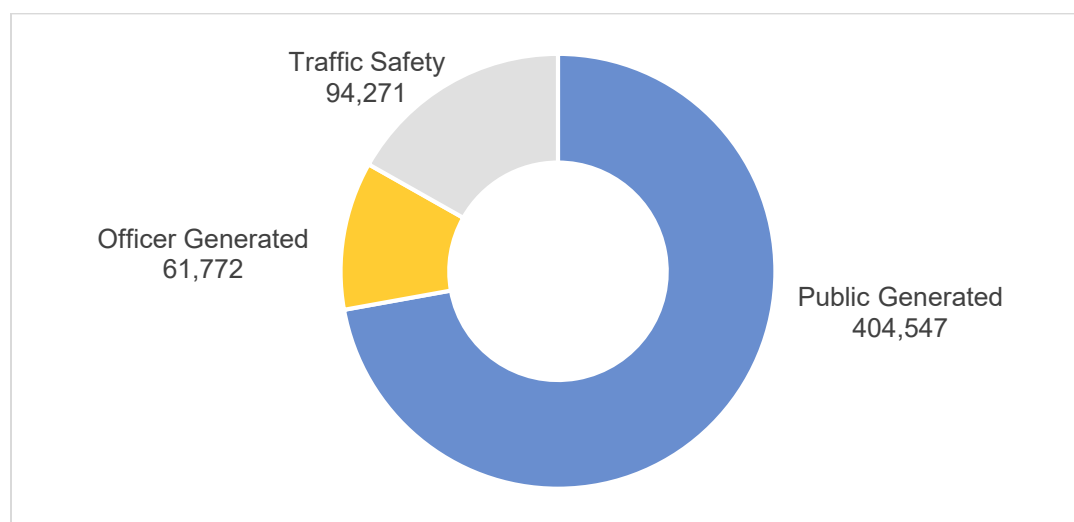
Source: CAD, Unit History

⁶ Calgary Police Service, (2018) 2019-2022 Service Action Plans, 11.

When asked about the current workload of patrol, officers indicated that the volume of calls, in conjunction with current staffing levels, were identified as the most significant challenges. From officers' perspectives this sometimes impacts their ability to address other objectives such as supporting victims of crime in a meaningful way.

To ensure there is appropriate capacity for quality service delivery, it is important to have a good understanding of the types of tasks and activities being performed by patrol – the way they originate, how often they occur and the amount of time they take. It's also important to be aware of how workload is distributed amongst the districts, so that resources can be allocated appropriately. Staffing analytics performed during this Review support the assertion that patrol is currently under-resourced in relation to previously established service standards. Therefore, this report has interrelated recommendations to ensure efficient use of resources and setting evidence-based service standards.

Figure 4: Total Calls for Service, 2019



Source: CAD database 2019

Calls for service have been stable for the past couple of years. After a minor increase in volume in 2018, numbers have come down to prior levels in many districts. District One (downtown) however, has seen an 11 per cent increase in 2019 compared to a three-year average (2016-2018). It is the only District showing such growth, and it also holds the largest share of calls (20 per cent) compared to the citywide district average (12.5 per cent) overall. The primary reason for the increase in CFS in District One is due to officer generated calls, which increased by 36 per cent in 2019 compared with the three-year average (2016-2018). This is in response to an increase in disorder events in the downtown core of the city since the latest economic downturn and the opening of the Supervised Consumption Services site in late 2017, which caused the public to voice concerns over safety in the area. The downtown beat teams contribute significantly to addressing this workload. District Four also has a high number and concentration of officer generated events.

Another aspect to note is the types of calls that have recently seen the most increase. It is notable that calls about disturbances and checks on welfare have increased in recent years, averaging eight to nine additional calls each per day.

Public Generated Event Types Showing the Most Increase in 2019			
Event Type	2019	3 Year AVG 2016-2018	% Change to 3 Year AVG
Disturbance	38,665	35,490	9%
Check on Welfare	32,782	29,793	10%
Break and Enter	11,661	9,687	20%
Medical	6,106	4,948	23%

Source: CAD Database

Some of the previous staffing allocation decisions have been based on number of calls for service and not the time patrol units spend responding to those calls. Therefore, the staffing levels across the districts closely align with calls for service numbers. However, the time spent on calls for service and the administrative and investigative time spent to follow-up is also required to fully understand the workload. Staffing requirements should be informed by both call volumes and the amount of time spent at each call, as well as administrative tasks. However, the latter can be challenging to measure precisely because some districts use slightly different business practices with respect to how time is tracked in CAD. Despite this challenge, the SOR team and consultant were able to extract and validate enough data to draw several high-level conclusions.

The CPS CAD and Records Management System (RMS) data revealed that approximately 30 per cent of the calls that require report writing and administrative follow-up account for well over half of officer's time/workload in 2019. For this reason, the reporting process can provide an opportunity for productivity gains in officer time.

These improvements could be achieved through policy and business practice changes, as well as more effective use of technology. It is important that these changes are made so that the quality and effectiveness of reports remain intact, because they play a key role in the documentation of crime and supporting criminal justice system proceedings. Over the last decade or so the literature indicates that the report writing process has intensified for agencies across Canada due to legislative and legal changes, as well as some internal policies within agencies. The issues specifically identified with CPS process are duplication of data entry across multiple systems, lack of quality control prompts and limitations on patrol vehicle ergonomics that necessitate officers returning to district offices to do reports.

Based upon conservative estimations it is anticipated that streamlining the report writing process by five minutes per report would result in **a productivity gain equivalent to \$590,235 annually**. If the CPS were able to achieve a 10-minute reduction in time spent on reports, it could result in a productivity gain equivalent to **\$1,180,050 annually** for officers. Appendix B outlines the service time required for administrative follow up and the methodology used for calculating the productivity gains.

Ultimately, these small changes to the report writing process could result in increasing officer visibility in the community.

Commitment: Continually monitor patrol workload to ensure appropriate staffing and identify opportunities for efficiencies from improved processes.

Recommendations:

Establish appropriate staffing levels that account for workload, service level standards and factors that impact the operational strength of patrol.

Adopt better use of technology integration for report writing and consistent processes to reduce administrative time of officers.

Anticipated Outcomes:

- Determining appropriate staffing levels to workload can provide cost avoidance opportunities through equitable workload across shifts and reduction in over-time and call-out.
- Appropriate staffing on the frontline to ensure officers have training, lunch breaks and vacation, impacts employee engagement positively, which in turn will improve overall quality and accountability of service delivery.
- Potential for significant annual productivity gains of officer time by improving administrative processes, while still maintaining high quality report writing.

Patrol Deployment Focus Area #3: Management of Patrol Resources

How patrol is managed administratively is another area that can impact the efficiency and effectiveness of service delivery, as well as officer safety and wellness. Areas such as HR policies, scheduling etc. can all be leveraged. The commitment to better manage patrol resources supports the previous section that dealt with monitoring workload and determining staffing; these two concepts are interdependent.

Managing patrol resources requires the involvement of various areas and levels of the organization. Finance and Human Resources (HR) track the number of allocated authorized positions, accommodations, sick time and long-term leaves. The districts manage more of the day to day staffing issues that are less static because they are impacted by factors like vacation, training and short-term sick time. For many of the districts there is a continuous gap between the authorized strength and the operational strength available for shifts to respond to calls. As discussed in the previous section secondments, leave, accommodations and acting positions impact patrol staffing significantly. In the past there has been a high volume of secondments supported by the Service, with the impact being significant for patrol positions. This makes it challenging for the management of resources within the districts, however, these secondments do help to fill other organizational needs and often provide a developmental opportunity for employees. In addition, the Service recently changed deployment models to improve supervision and the team environment within the districts. However, this caused less overlap of supervisor shifts with each other for staffing planning at the district level. Therefore, this section recommends leveraging information, analytics and HR best practices that support supervisors with the efficient and effective management of patrol.

Another area that can provide some opportunity to ensure patrol officers time is being used efficiently is through scheduling, which also has a significant impact on officer wellness. The current patrol schedule is a mix of twelve, ten and eight-hour shifts that are worked on a ten-week cycle. Given the 24-hour nature of patrol work, it is important that the Service leverage best practices and research to ensure that the health impacts are minimized. Since the current schedule was implemented in 2008 it has not been formally evaluated. It is acknowledged by the literature, as well as officers that there is no perfect schedule, however, there is some preliminary evidence through analysis of CAD data that the schedule could better fit staffing to workload by day of week and hour of day. The schedule is generally popular with patrol officers because they feel it helps them balance their work and personal responsibilities more effectively than previous schedules. Data on lost time from sickness and injuries was also evaluated and no issues related to schedule emerged. However, there are opportunities to make changes to start times for example that could address busier times for patrol officers, police managers, and the community. An evidence-based approach and further engagement is required for any future evaluation to achieve the best outcomes and support potential negotiations within the collective agreement with the Calgary Police Association.

Commitment: Efficiently manage existing patrol resources to ensure effective service to the community, while safeguarding officer wellness.

Recommendations

Develop structured processes and training for staffing planning across the districts.

Leverage real time data on staffing for all levels of management in the districts.

Develop HR policies and practices around vacation and accommodation management, that includes training for district supervisors on planning functions.

Evaluate the current patrol work schedule to determine how it might be improved to enable more efficient use of patrol resources and safeguard officer wellness.

Create a patrol deployment working group to support deployment and staffing planning.

Anticipated Outcomes:

- Increasing training and leveraging data for shift scheduling can result in both cost avoidance and productivity gains for supervisors who are managing the frontline.
- Increasing perception of fairness and improved morale amongst employees and across districts as a result of clear policies and consistent application.
- Reducing the risk of inadequate service delivery due to lack of staffing and officer fatigue.

Patrol Deployment Focus Area #4: Demand Management and Alternative Service Delivery

Patrol performs the majority of the call response and preliminary investigation activities. Therefore, the opportunities for efficiencies exist in the management of how the CPS responds to calls for service. The exploration of alternative response does not include situations where a person's life is at risk or a crime is in progress. The Service will always continue to address those issues in person and in a timely manner.

Demand management is an umbrella term used to describe a grouping of efforts that can be used to reduce the number of patrol officers required to address community needs. The current data discussed in the staffing and workload focus area demonstrates that patrol is currently challenged to consistently meet performance targets and effectively perform functions such as community engagement and traffic enforcement.

Other North American jurisdictions have faced similar resourcing challenges and have employed several avenues to address them through:

- An internal resource other than patrol (example: patrol support teams calling citizens).
- Call diversion to online reporting.
- Utilization of technology.
- Redirecting calls to another more appropriate agency.
- Call prioritization adjustments.

As an example, some Canadian agencies are exploring the provision of certain services remotely rather than dispatching a patrol unit to each call. This approach could provide an opportunity to be responsive to the varying ways that citizens want to interact with City service agencies. One option includes using interactive technology such as facetime as an initial response to certain non-emergency calls, allowing for an assessment of the investigative needs and speeding up the report taking process.

In the UK and Australia, strategies include the above options, as well as more profound changes such as:

- Higher thresholds for what crimes the police are willing to investigate.
- Greater responsibilities placed upon the public for crime prevention.
- Increasing reluctance to deal with demand related to non-police matters.⁷

⁷ Fleming, Jenny and Grabosky, Peter (2009): *Managing the Demand for Police Services, or How to Control an Insatiable Appetite*. Policing, Volume 3, Number 3, pp. 281–291.

Wilson, Jeremy and Weiss, Alexander (2014): *Police Staffing Allocation and Managing Workload Demand: A Critical Assessment of Existing Practices*.

Wally, Paul and Adams, Matthew (2019): *An Evaluation of Demand Management Practices in UK Police Forces*. Center for Policing Research and Learning.

The impact of adjusting workload can be significant for overall service delivery, community and proactive policing and performance measures. The COVID-19 pandemic provided a real-world example where both the demand and capacity sides of the equation were changed. As the number of cases increased, the province of Alberta issued several public health orders that resulted in more people staying home. In April 2020, this led to a decrease of about 5,000 public generated calls compared to the same month in previous years. Concurrently, the CPS reassigned internal resources, and offered more call diversion options such as online reporting, which created more capacity in patrol. In addition to public generated calls decreasing, response times for priority one and priority two calls improved significantly, and the volume of officer generated calls increased 50 per cent. The latter indicates that the officers had significantly more time for proactive activities. However, there was also reduced traffic on the roads during this time so additional analysis of the impacts of COVID-19 on workload and staffing is recommended to fully understand which aspects could be implemented longer term.

As the Review was exploring opportunities for doing things differently to achieve efficiencies, the information from citizen engagement was vital in understanding how these changes could be approached. Community stakeholders shared an interest in the CPS leveraging technology for service delivery but expressed caution because of the importance of positive in-person interactions. They also raised perspectives around accessibility and access to technology that should be considered in any implementation plan. In addition, the implementation of these recommendations should involve significant consideration for the current community discussions about the role of police in the community vis-à-vis other agencies supporting the health and wellness of citizens, as well as activities addressing systemic racism.

CPS Commitment: Leverage demand management mechanisms and alternative service delivery options that increases the efficiency of patrol, while still ensuring the needs of the community are met.

Recommendations:

Implement additional avenues for public reporting of crime and response to calls that do not involve priority response with a patrol unit.

Evaluate the current approach to call prioritization to ensure effective response to public calls for service and efficient management of patrol resources. This would be done in partnership with Calgary 911 and may require updates to the Service Level Agreement.

Engage the community about budget constraints to understand the impacts of potential service delivery changes.

Anticipated Outcomes:

- Citizens would still receive quality service; however, it may be delivered differently, or service levels would need to be adjusted to address budgetary constraints. This proposed approach does not change the organization's mandate to provide timely response to emergencies.

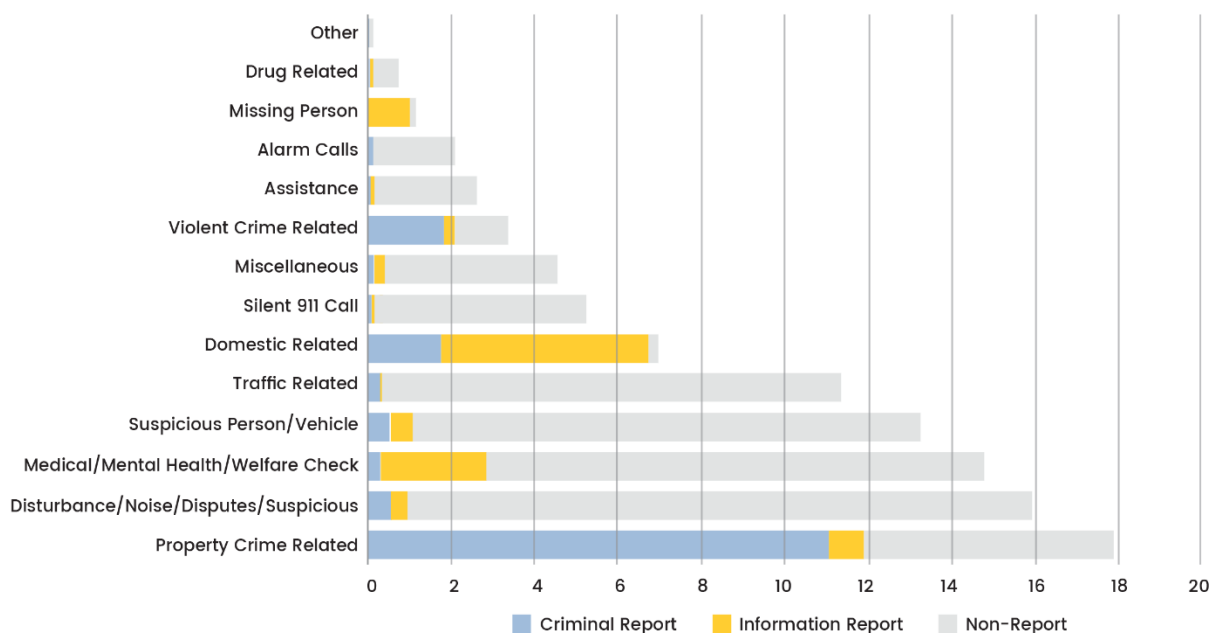
- Increase in the amount of patrol officer time proactively engaging with community stakeholders and problem solving.
- This can result in a reduced number of calls requiring a uniformed officer response thus supporting officers mental and physical wellness by having manageable workload.

Patrol Deployment Focus Area #5: Partnerships and Community Policing

Patrol call-response is reactive in nature and that is why the CPS has significantly increased the number of partnerships over the last decade. These partnerships bring together skillsets in areas such as health and education to achieve better outcomes for our more vulnerable community members. Examples include School Resources Officers and the Police and Crisis Teams that partner officers with mental health clinicians.

Earlier in this report it was established that on average patrol officers have very little time to conduct proactive work and community engagement. This does not leave a lot of capacity for patrol to spend supporting community policing alongside partners. The data also demonstrated that a large percentage of public calls for service dispatched to patrol are largely non-criminal in nature and relate to health (medical/mental health/welfare check) and disturbances such as noise disputes and suspicious persons.

Figure 5: Percentage of Public Generated Calls by Call-Type, 2019



Source: CAD and RMS databases

This data in addition, to community engagement indicated the importance of training and partnerships to ensure that the CPS service delivery is effectively meeting the needs of the community.

Another important consideration for patrol's role in community policing is the impact of how they are deployed. In the past the CPS has had versions of geographic ownership (zones) that supported officers to get to know specific areas within each of the districts, however, this is no longer being consistently utilized. This consultant recommends this approach to help increase proactive efforts and to allow officers to work closer with community stakeholders and address

issues in a timely manner. With some of the district sizes being geographically similar to cities such as Regina, officers dispatching across the districts is not an efficient approach.⁸

There are also partnerships with The City of Calgary administration in areas of public safety, including traffic. However, some of these partnerships could be enhanced to have better coordination with City partners around areas such as land development. How the city and the surrounding region develops has a significant impact on the CPS's capacity to ensure that community policing can be effectively delivered. This aligns significantly with the infrastructure and capital planning focus area of the SOR, which identified that the CPS could benefit from being part of City planning and development committees. This would provide greater awareness of land use planning decisions that impact safety and crime issues in the community.

CPS Commitment: Continue to strengthen partnerships for service delivery into the future and increase the role of patrol in community policing.

Recommendations

Adopt consistent geographic ownership within each of the districts.

Monitor projections and changes in land use planning on a regular basis to allow for adjustments in deployment and collaborations with external service providers.

Continue to strengthen community partnerships and organizational collaboration to address prevention and intervention related activities.

Anticipated Outcomes:

- Familiarity with community stakeholders was identified in the community engagement as being a key factor in contributing to the trust and confidence of the CPS. Patrol officers have an opportunity to enhance those relationships if they are given responsibility for a specific geographic part of their district. Once assigned to geographic areas, patrol officers will obtain first-hand information about the needs of residents and other stakeholders to improve service delivery and job satisfaction.
- Increased understanding and consistent expectations for the role and function of both the CPS and other social agencies in responding to vulnerable populations. This could improve trust and confidence in the CPS, as well as address officer's concerns about their capacity to provide effective response to community needs.

⁸ US Department of Justice.(2014) *Community Policing Defined*. Community Oriented Policing Services.

Patrol Deployment Focus Area #6: Internal Policies and Analytical Functions

When conducting this Review, it was also noted that several key internal processes and analytical functions have a significant impact on how the Service can achieve and measure the effectiveness of its service delivery.

The first is the inputs into CAD, which houses most of the information required to understand the activities and time allocation of patrol officers. However, it was found that CAD is not being used consistently in certain areas to track activities. For example, the time spent on administrative tasks is tracked two different ways within the system. In some instances, report writing was tracked as part of the original call, which helps the Service understand the totality of the work associated with each call. In other instances, the time was tracked separately as administrative time. In addition, it was challenging to understand the investigative workload of patrol because the lead investigator was not always formally updated within the records management system accurately. Therefore, practices on the usage of data systems will need to be standardized to provide a clear understanding of the similarities and differences between patrol teams and across the districts. These findings are consistent with previous internal audits conducted on CAD usage. Given that these systems are integral to tracking and ensuring that districts are supported with appropriate staffing and that the Service is utilizing resources efficiently, it is important they are utilized consistently across the CPS.

Analytical functions are not just limited to tracking past and current workload information, it can also be leveraged to forecast future workload. Understanding demand is complex and requires a combination of technology, data and the expertise to analyze and translate that data into actionable information. Currently, the CPS conducts significant past, current and some future focused crime (operational) analysis, however, this analytical capability along with improvements to internal processes could be leveraged further for future patrol staffing planning. Any technology that is used for this forecasting would meet and exceed standards and legislation in relation to privacy, supporting marginalized groups and human rights.

CPS Commitment: Improve internal processes and policies that support the effective management of patrol functions.

Recommendations:

Update CAD, InTime and Sentry business rules to better track and understand officer activities, time and workload.

Leverage research, analytics and the use of big data solutions for forecasting future workload.

Anticipated Outcomes:

- Use of forecasting models to identify likely peaks and dips in service delivery allow the CPS to align the patrol schedule, geographic and staffing levels more closely to workload over time. This will lead to increased productivity.
- Focused resources on problem areas, which increases the likelihood of better outcomes.

- Increased effectiveness of planning for training, infrastructure and human resources.
- Opportunity to coordinate more with The City of Calgary's planning and development committees to understand future growth of the city.

Overview of Infrastructure

 Infrastructure Portfolio \$600 Million	 Owned Facilities 29	 Leased Facilities 22	 Public Facilities 10	 Facilities Operating Budget 14.7 Million
---	--	---	--	---

In general, police facilities need to be built to rugged standards to withstand the “wear and tear” commonly associated with the needs of the 24-hour, 365 days a year emergency service provider. Decisions regarding the physical locations of these facilities are important given that many aspects of police service delivery models have specific geographic requirements such as response times to emergency calls. In addition, the ability to serve the needs of the public require that these locations are accessible, reflect the community policing model of the CPS and are secure enough to facilitate law enforcement needs. If facilities are not kept in good working order, the public can be negatively impacted, in that they will not have required services in a timely manner and employees will be negatively impacted as well. Given that facilities play an integral role in the effective functioning of the CPS, they have to be developed, maintained and upgraded in alignment with the needs and expectations of citizens, employees and partners.

In the citizen engagement⁹ conducted as part of an overall focus on continuous improvement, participants noted that increased use of technology to support service delivery could minimize the demand for public access to CPS facilities in some situations. This could be helpful where persons are fearful and can be less threatening where a uniform can be intimidating. Online interactions could also limit opportunities for officers' unconscious bias, which is more prevalent in face-to-face situations; provide comfort to individuals when anonymity (not having police in their business or house) is preferred; reduce the long wait times, and it could even streamline some of the reporting processes so members of the community can go on with their day to day lives.

An extension of that recommendation suggested that the CPS should consider being more “accessible and visible” with police services that are “built into the community with other partner organizations”. This was particularly important for citizens who prefer face-to-face interactions or may be less comfortable with or have less access to technology.

The in-depth review of infrastructure conducted by external consulting partner revealed the follow key strengths and challenges:

⁹ Argyle (July, 2020). Service optimization review community engagement. Report prepared for Calgary Police Service.

Infrastructure Strengths and Challenges

Strengths	Challenges
<p>Organization has a fairly new portfolio</p> <ul style="list-style-type: none">• Oldest building is 40 years old.• HQ has land area for expansion of facilities.• Existing facilities with few exceptions are in good shape.• Adequate space to support employee wellness in most facilities. <p>Organizational support for more long-term planning</p> <ul style="list-style-type: none">• The CPS has developed a Strategic Plan to help set the Service's priorities and long-term goals for the organization.• Completed Functional Review in 2020 that has addressed capacity and integration of facility planning and management. <p>Increasing organizational support for consistent, structured approach to decision-making</p> <ul style="list-style-type: none">• A proposal for Infrastructure Capital Planning and Management Governance Framework has been drafted, which outlines clear roles and responsibilities, consistent processes for project consideration and prioritization to ensure alignment with organizational goals of efficiency and effectiveness in infrastructure planning and management.	<p>No formal alignment with City facility capital planning framework</p> <ul style="list-style-type: none">• There is no formal relationship between The City and the CPS to support the Service's long-range infrastructure plans.• The current greenfield funding model for CPS district offices• Lack of alignment with the growth of the city can impact response times and lead to increased public dissatisfaction with police. <p>There is no formal long-range facilities plan</p> <ul style="list-style-type: none">• The absence of a long-range infrastructure plan limits the CPS ability to adequately plan or budget for projects.• The CPS risks making capital investment decisions and resource allocations that are not aligned with its vision and unable to achieve targeted outcomes for allocated capital.• There are gaps in the consistent use of appropriate project management tools and processes to support infrastructure projects. <p>Lack of predictive maintenance program</p> <ul style="list-style-type: none">• Only one CPS facility has a current Building Condition Assessment (BCA), limiting the organization's efforts to effectively plan maintenance, repairs, refurbishment, and replacement.• The current annual CPS building maintenance budget is not adequate to address priority deferred maintenance items.

Infrastructure Focus Area #1: Long-Range Capital Planning

The CPS does not have a long-range capital plan that forecasts and budgets for required facilities and facility renewal requirements over the long-term. The absence of a clear long-range plan for infrastructure means the organization risks not having access to funds for critical strategic projects when required. Effectively responding to changing crime patterns and citizens' needs in a growing city, requires strategic planning for infrastructure and maintenance. In the current state there is increased risk that the condition of existing buildings will deteriorate and adversely impact existing operations. The review also noted deficiencies in several areas specific to governance, including lack of a current organizational capital asset governance map that outlines clear roles and responsibilities. This can result in a siloed approach with requests for capital improvement coming from bureaus within the CPS.

A long-term plan allows for consideration of the current facility requirements of the organization, including space to meet operational needs, and required maintenance; and future projected space requirements, informed by factors such as population changes, geographic expansion of the city and the changing dynamic of crime. It also considers the need for a structured approach to planning and decision-making around infrastructure projects. This understanding of the range of facilities required to meet the organization's operational needs is then aligned with the capital fund and is the foundation for a clear long-term strategic infrastructure plan based on the operational requirements of CPS over that span of time.

Another benefit of this approach is the adoption of strict infrastructure governance practices and approaches. This standardised, transparent and consistent capital planning and management approach allows for a strategic facility portfolio, program and project decisions to ensure opportunities and risks are well managed and aligned with the organization's vision, priorities and budgets. Some of the key advantages of effective governance include:

- Acceleration of the implementation of strategy and the achievement of organizational objectives.
- Enhanced transparency and confidence in decision-making.
- Better cost management by strategic investment in infrastructure planning.
- Optimized investment and the elimination of some of the common factors that contribute to failure in capital projects, such as poor definition of requirements.

In the absence of established internal governance, the organization risks misalignment between infrastructure investments and the organization's needs, project scopes that are not adequately defined, thereby leading to cost overruns and project delays. While the CPS has certainly matured in its approach to infrastructure project management, the Outdoor Shooting Range in 2014 is one example of the implications of limited governance.

OVERVIEW OF CASE STUDY OUTLINING EFFICIENCY AND EFFECTIVENESS GAPS

The **Outdoor Shooting Range** at the North Deerfoot location was built to reduce the load on the indoor range at a cost of approximately \$6M in 2014. However, following construction, concerns were raised about elevated lead levels which resulted in the need to retrofit part of the relatively newly constructed facility at an additional cost of approximately \$4M in 2018/19.

ISSUES EXPERIENCED:

- Missed target completion date: The original concept for the location had to be rebuilt; the project experienced delays with confirming the source of the contamination and the development of an appropriate solution and the project scope had to be changed to meet the needs of end users.
- Missed target budget: The additional repairs introduced additional costs to correct problems identified post-construction.
- Incorrect specifications: The original specification outlined that the facility would be used for frangible (easily disintegrated) bullets but once construction was completed, the organization made a change to the types of bullets used to include a mix of frangible and lead.
- Inadequate environmental assessment: An air flow study conducted in 2016 demonstrated that reliance on the natural air flow to remove smoke was insufficient for the entire range length. Despite an earlier study in 2013, which had found the air flow was adequate for frangible bullets.

LESSONS LEARNED:

- Full engagement with all the stakeholders (including specialists) is critical for infrastructure projects.
- Having a streamlined process with stage-gates to support the infrastructure planning process is critical.
- Impact analysis for changes to project delivery, such as types of bullets, is critical and requires consideration at the level of project management.

Commitment: Improved management of the current and future infrastructure portfolio through long term strategic planning.

Recommendations:

Develop a detailed, long-range facilities master plan integrated with the strategic direction and priorities of the CPS, that is reviewed annually and updated every five years.

The CPS should articulate internal policies, processes, procedures and standards including facility prioritization criteria and change management strategies in support of a long-range infrastructure capital plan.

As part of the ongoing Infrastructure Capital Planning and Management Governance Framework, ensure a process is developed for identifying unfunded capital project priorities.

Redesign the approach to the development / replacement of district offices.

Anticipated Outcomes:

- Cost avoidance through effective governance and planning (case study example).
- Ensures the location of facilities or forms of service provide optimum service to the public.
- Aligns infrastructure planning with deployment and operations and ensures infrastructure enables effective service delivery.

- Reduced potential for unexpected interruptions to police services and associated risks including additional costs and the impacts on safety, service and employee health.
- Prioritizes capital projects ensuring increased value for money and alignment with longer-term strategic direction.

Infrastructure Focus Area #2: Predictive Maintenance

A lack of strategic planning and funding has restricted the ability to complete Building Condition Assessments (BCAs) on the CPS facilities portfolio, with only one current BCA (District 4 in 2018). The absence of current BCAs means the Service has been unable to create an informed timeline for scheduled repairs and replacement of infrastructure and assets. A related issue is most of the required maintenance has been postponed due to lack of required funds, meaning the organization now has a significant backlog of required and possibly urgent repairs.

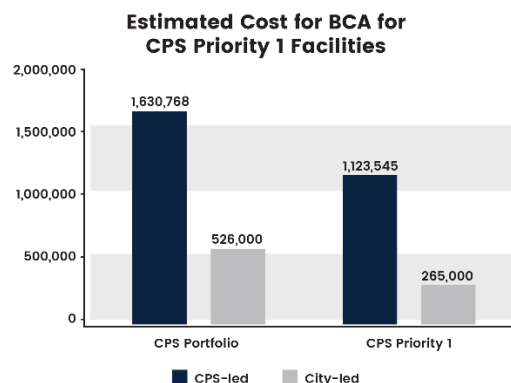
Predictive maintenance supports the monitoring of assets and the implementation of appropriate responses designed to reduce the burden of maintenance backlog and more costly issues. The result is the prevention of issues accumulating and becoming more costly deferred maintenance. The CPS lacks a predictive maintenance program and therefore risks recurring and unplanned out of budget operating costs; having major maintenance repairs arise but lacking the financial capacity to address them; compromised internal service levels due to lack of data on building condition and some facilities becoming inoperable due to deferred but required maintenance.

In order to turn the curve, all CPS facilities will require BCAs to allow for the development of an efficient and effective maintenance program. A BCA is a systematic inspection and report on the state of the building's envelope performance, structural foundations and mechanical systems, including heating and cooling. A BCA may also include an assessment of the exterior elements of the property including site grading and drainage, condition of roadway and servicing infrastructure and lighting. The BCA report indicates whether you need to do repairs in the short term, as well as what will be required in the longer term, complete with estimated costs. This information forms the basis of a predictive maintenance program which outlines maintenance plans for all major building elements, the timing of when these are required, the cost to address the projected deficiencies and the scale of required renovations. The cost for completing BCAs for the entire CPS portfolio is estimated at \$1.20 per square foot and would equate to approximately \$1.6M (based on current industry rates). However, the SOR identified several priority-one buildings based upon age and that there is the potential for the CPS to partner with the existing BCA program within the City, thereby accessing better rates for this work.¹⁰

This kind of partnership could amount to approximately \$800K cost avoidance savings for the CPS.

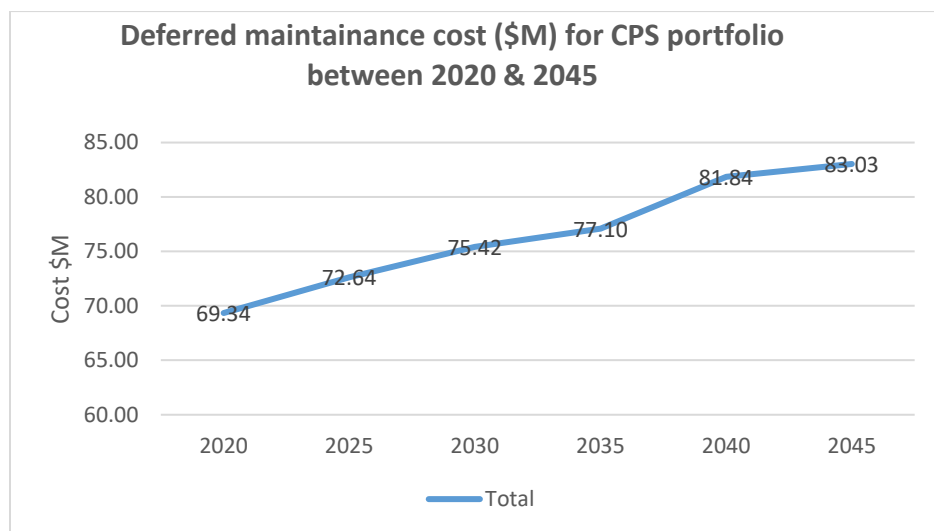
¹⁰ Priority facilities for maintenance include Districts 2, 3, 4 and 6, Westwinds East & West and the North Service Centre

Figure 6: Estimated Cost Savings for BCAs



Deferred maintenance refers to repairs to infrastructure and assets that are postponed because of lack of funding. Typically identified by a comprehensive BCA, these needs are not scheduled to be addressed in the current budget cycle and thereby are postponed until future funding budget cycles or until a dedicated lifecycle funding source is identified. This Review provided an estimated longer-term cost of approximately \$68 million to cover the current deferred maintenance for CPS facilities. The CPS would not need the full amount immediately and could possibly implement these current estimates over a 10-year time frame. However, the timing and amount will be subject to the completion of the detailed BCAs. The absence of a predictive maintenance program means the organization's deferred maintenance costs will continue to grow, with a projected increase to over \$85 million by 2045 should the CPS do nothing.

Without completed BCAs it is very difficult to proactively prioritize the maintenance schedule and cost of individual buildings. Detailed BCAs would allow the CPS to better estimate and plan for maintenance costs over a ten-year time frame. The BCAs will also be a key consideration in evaluating whether a building should be replaced or renovated.



The chart above shows the change in gross deferred maintenance costs for buildings in the CPS portfolio over five-year increments from 2020 to 2045. Costs are calculated as a percentage of the original build cost. The key take-away for the Service is that as each building ages, there will be an increase in the deferred maintenance cost.

It is important for the CPS to prioritize facility maintenance to minimize impacts to operations, reduce risks of building failure, insurance claims and possible staff relocations. This ultimately improves building performance and staff retention. Less reactive maintenance also translates into cost savings for the organization. Lastly, better planning supports proper budgeting and the scheduling of staff resources.

CPS Commitment: Increase the monitoring of assets and address the identified deferred maintenance gap.

Recommendations:

Create a plan for completing building condition assessments in partnership with the City of Calgary's Administration to prioritize the required maintenance.

Focused spending of capital renewal and maintenance allowances required each year to keep the assets in good condition over their useful life enabled by a comprehensive facility asset management plan.

As part of the ongoing Infrastructure Capital Planning and Management Governance Framework, ensure a process is developed for identifying unfunded capital project priorities.

Anticipated Outcomes:

- Cost avoidance of increasing maintenance costs (tangible efficiency).
- \$800K potential savings through utilizing the City of Calgary's BCA program.
- Investment in building condition assessments for the older buildings in the CPS portfolio could prevent expensive and unexpected maintenance.
- Investment prioritization framework:
 - Understanding of existing maintenance priorities would allow existing funding to be optimized.
- Evidence-based lifecycle planning:
 - Better predictive maintenance would reduce demand maintenance and allow for better planning of staff resources.
 - Addressing building issues through a predictive maintenance program will allow proper planning that minimizes occupant impacts and inconvenience.

Infrastructure Focus Area #3: Partnerships and Collaboration

The CPS develops and manages most of its own facilities. The SOR process allowed for additional examination of relevant infrastructure supports within The City. Specifically, the Facility Management (FM) business unit, which leads strategic planning, delivery and operations of The City's portfolio of civic facilities. As the corporate accommodation planner and property manager, FM provides comprehensive services for each phase of facility development. FM's role as a service provider to civic business units is to support operations *"by providing value, streamlining business processes, eliminating service silos, maximizing limited resources through innovation and optimization, providing professional project management services, flexible workspaces and strategies, and preventative and predictive maintenance activities"*.

In an increasingly constrained financial environment, the SOR has highlighted the need for greater collaboration with City partners to support infrastructure planning and management within CPS. Two transformational change initiatives currently underway provide meaningful opportunities for the CPS. The first is the Integrated Civic Facility Planning (ICFP) program, established by Council and The City's Administrative Leadership Team (ALT) to transform the way The City plans and delivers facilities. The second is the Corporate Coordinated Operations and Maintenance (CCOM) program, established in 2017 and directed by ALT to centralize operations and maintenance under Facility Management.

This partnership could be useful in ensuring infrastructure planning better aligns with The City's budget cycles and processes and benefits from available human and technical resources as required. The CPS could engage certain areas of FM services to address specific areas of organizational needs ranging from planning, designing, building, operating or maintenance. Another available option is to contract for individual service options through FM such as building condition and lifecycle assessments and project and construction management.

Another area of opportunity for collaboration is around environmental sustainability and energy consumption. Efficient equipment and buildings deliver operational benefits throughout their service lives. The CPS recognizes that conservation is a low-cost approach to improve the performance of its infrastructure as it limits energy use and results in cost savings for the organization. The CPS does not always meet its existing energy conservation targets so there is opportunity to continue to utilize The City's framework to reduce costs. As the CPS addresses its deferred maintenance strategy and products are replaced at the end of their lifecycle, an investment in more efficient equipment could also contribute to future operating budget savings.

CPS Commitment: Appropriately collaborate with the City's infrastructure planning and management services.

Recommendations:

Develop formal relationships with appropriate City Business Units and Committees. This would ensure that the CPS is part of City planning and is aware of any operational impacts of development.

Engage The City of Calgary's Facility Management (FM) services and, where feasible, enter into Service Level Agreements with The City that make the best use of the expertise, knowledge and resources of both CPS and FM. This would ensure that the CPS has suitable facilities to effectively fulfill its policing mandate.

Adoption of The City of Calgary's Sustainable Building Policy 2019 could achieve significant energy savings in the heating, cooling and lighting of the CPS facilities.

Anticipated Outcomes:

- Potential for cost savings if The City's FM can support the CPS infrastructure through reduction in duplication of services and optimizing resources.
- Early opportunity to identify co-locations which could contribute to capital and facility operational savings.
- Improved ability to plan strategies for community safety, potentially resulting in significant operational benefits.
- Programs targeting efficiency can save up to 5 to 20 per cent on energy bills without significant capital investment (The City of Calgary, Corporate Energy Plan 2016-2022).

Infrastructure Focus Area #4: Optimized Space Planning and Management

The CPS's buildings serve the needs of its employees, members of the public and accommodates vehicles, equipment and supplies. The infrastructure consultants found after reviewing and conducting site visits that there is increasing space shortage at some of the district offices, particularly to accommodate vehicles, new equipment for officers and space for female change rooms. This is a demand that will need to be addressed moving forward, within the parameters of efficiency and effectiveness. However, it was also found that there were opportunities to address demands for space through better approaches to space management within the Westwinds campus. This latter component provides the most immediate opportunity to turn the curve on how space is used.

Organizations that are known to effectively manage their space have been shown to reduce overall space requirements. This includes tracking who uses space and what they use it for and implementing policies that provide accountability in this area. Space management is a key strategy to reducing facility operating costs that are driven by area, such as leasing and "lights on costs" which include heating, cooling, maintenance, housekeeping, security and insurance. This is in line with the experience of other private and public sector organizations that have achieved substantial space reductions resulting in significant savings and attractive returns on investment (ROI).

Given that the CPS does not have any type of formal space management program in place, implementing one is a high priority for the organization to achieve optimization of existing space. This would allow the organization to increase the number of employees or program areas that can be accommodated at the Westwinds campus, without increasing square footage. By re-working its approach to use of space, the CPS initiated a retrofit of existing space at the Westwinds campus in 2019 to accommodate the Cybercrimes unit. The retrofit and additional space that was built cost the Service \$2.4 million. The unit moved into this space in 2020 thus saving the annual lease costs of approximately \$550K. This means the CPS will have fully paid the development costs for this new space using approximately four years of leasing dollars.

With the COVID-19 pandemic, some employees have temporarily transitioned to different work styles including working from home. Current efforts to support re-entry respond to the new reality and consider options that can support flexible work styles and workspaces. The anticipated benefits of this approach include:

- Managing costs by optimizing existing workspaces and reducing the need for new space.
- Attracting and retaining employees through flexible workstyles.
- Reducing the organization's environmental footprint.
- Enabling an innovative and collaborative workplace.
- Preparing for business continuity and resiliency.

The consulting partner provided two options that outlined potential savings from better use of the existing space at the Westwinds campus. Currently, at Westwinds the CPS accommodates

1568 employees in 40,810 m² of space (26.03 m²/employee). By adapting new space standards, this same number of employees can be accommodated in 26,186 m² (The City of Calgary Space Standards, 2014) or down to 19,130 m² as a second option (City of Calgary Space Standards, 2018).

In the first option, the CPS could achieve a 34 per cent (14,624 m²) reduction from current space usage. In the second option, the CPS could save a 53 per cent (21,680 m²), reduction from current usage. The space that is saved can then be re-allocated to other programs or personnel and potentially reducing leased space, without creating additional space.

These options will need to be assessed further to make concrete efficiency estimations, with an understanding that savings are impacted by factors such as owned versus leased buildings. Like many other organizations, the CPS has been challenged with economic fluctuations, growth, evolving organizational structures, ongoing changes to the way people work and the expectations from the workforce around workspace. In order to continue to attract and retain top talent and increase the flexibility of our portfolio for the future of work, the CPS recognises the importance of additional focus on effective utilization of assets, ensuring we have flexibility to respond to changes in the economy and reducing our square footage to save on costs while continuing to support staff.

Opportunities for the Service to optimize space include developing facilities that can adapt to service needs; maximizing the use of existing space within the portfolio; and providing options for where and how employees work.

CPS Commitment: Adopt best practice space standards and policy measures to support the effective use of space.

Recommendations:

Implement an enterprise-wide space management program using the appropriate technology to track who uses space, what they use it for and implement policies that support more efficient use of space.

Long-range planning should prioritize the repurposing of existing facilities over new construction. Reviews of existing services for potential space optimization or consolidation of services (e.g. application of new office standards, consolidation of fleet services, etc.) should be conducted.

Anticipated Outcomes:

- Reduction in the space required for employee workstations could reduce lease and other capital costs.
- Alignment with The City of Calgary's space management program.

In Summary

Through the process of conducting the SOR, the CPS has a blueprint to evaluate and communicate about continuous improvement efforts into the future. The actions recommended in this Review will set the Service up to ensure it can sustainably police into the future without significant requests for operating growth.

The recommendations for both focus areas align to support the CPS in being more strategic about integrating its operational approaches with the appropriate enabling infrastructure. It will also enhance the alignment and involvement in the planning and development functions at The City of Calgary and will improve ongoing efforts by both partners to meet the needs of the community.

Lastly, through the forthcoming implementation plan, the Service will be able to further estimate and report on efficiencies attained through the recommendations. The Service will continue to regularly report to the CPC on the outcomes of the implementation of this Review.

Appendix A: Determining Staffing Methodology

In order to estimate the potential cost avoidance of reducing the amount of lost time the consultant utilized both a shift relief factor calculation, as well as the established Managing Patrol Performance (MPP) Tool that has been utilized by agencies across North America.

The first step is to determine the SRF, which shows the relationship between the maximum number of days that an officer can work and the number of days they actually work. Knowing the relief factor is necessary to estimating the number of officers that should be assigned to a shift in order to ensure that the appropriate number is working each day. ¹¹

The SRF calculation for the CPS started with the collection of time keeping data for the officers who worked for the full year of 2019 in patrol. This sample was used because the number of personnel in patrol changes during the course of the year, so averages reflect all the seasons of the year when officers use leave. There are two reasons why officers are not available for duty on a shift.

- Scheduled shifts/days off which are used 35 times during the 70-day cycle in the current patrol work schedule that is outlined in the collective agreement with the Calgary Police Association. That 70-day cycle takes place 5.2 times in a year, so each officer had 182.5 scheduled days off per year,
- Lost time is time away from patrol work as the result of leave, training or assignments that make officers unavailable for work in patrol. Total hours of time lost for each category was divided by the average of 11.4 hours worked per shift by officers to determine the number of shifts lost. The table below outlines the proportion of lost time for patrol constables.

Time Category	AVG Per Year/ CST	Percent
Other Assignments ¹²	18.6	33%
Vacation	12.2	22%
Training	8.2	15%
Acting Supervisor	6.0	10%
Sickness and Accidents	5.9	10%
Extra Time Taken	4.0	7%
Workers Compensation	0.7	1%
Statutory Holiday Off	0.4	1%
Compassionate Leave	0.4	1%
Other	0.4	1%

¹¹ Jeremy Wilson and Alexander Weiss, Performance Based Approach to Police Staffing and Allocation, Office of Community Oriented Policing, U.S. Department of Justice, 2014

¹² Other Assignments include accommodations, unauthorized units and secondments to other units.

Days Lost Per CST	56.9	
-------------------	------	--

Source: InTime data of full year in 2019

A SRF of 2.9 means that to be sure 1 officer can be at work around the clock 2.9 or 3 need to be employed. Given all the factors involved in lost time, this report chose a conservative estimate for recommending cost avoidance.

The second step used by the consultant was to leverage the MPP tool to calculate how many officers are required to address patrol's workload and past service level goals. MPP is a Windows based on queuing model that can be used for patrol staffing analysis and to help managers plan the deployment of existing patrol personnel. MPP is based mathematical formulas developed by Dr. Richard Larson at the Massachusetts Institute of Technology (MIT) in the 1970's.

MPP calculates the amount of time calls of various priorities will wait in line or in a "queue" until patrol units on duty are free to answer them. In turn, MPP will determine the number of units that would be needed to reduce those delays. At the same time, the model can be used to determine the percentage of time officers will spend on calls for service with different number of patrol units in the field.

The value of a computer model like MPP is that it can simulate current conditions using information about patrol workload. An accurate computer model allows police managers to evaluate deployment plans without having to take risks associated with testing those plans in real life. Listed below are the specific pieces of information that were entered into MPP to make staffing estimates

- The number of patrol units on duty responsible for answering calls for service.
- The rate of citizen generated calls for service per hour.
- The number of units sent on calls expressed as the percentage of calls that are answered by one, two, three or more (up to six) units.
- The average service time (travel time plus time at scene) for each unit that answers a call.
- The number of minutes per unit per hour spent on non-call related tasks such as prisoner transportation, meals, breaks,
- The degree to which non-patrol units (traffic units, detectives, etc.) will be available to handle some calls.
- The percentage of each type of priority of call that is received.
- Travel times for calls by priority type.
- The square miles or kilometers of the patrol area being covered.

Taken together, this information captures the time needed by patrol officers to respond to calls and perform other work. MPP accounts for the seriousness of calls using the priority assigned to calls and the number of units sent to them. In addition, the model uses the square miles of a

patrol area and travel speeds to calls, to account for factors such as traffic problems at certain times of the day or long distances that must be traveled to reach calls.

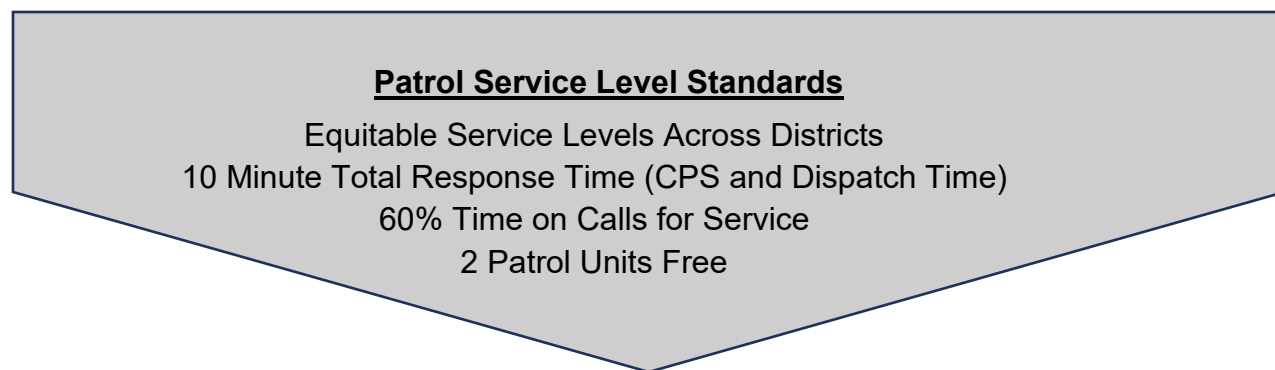
MPP Outputs

Once entered into the MPP model, this information can be used to evaluate results that might be achieved by fielding different numbers of patrol units at different times of the day on different days of the week. Performance goals evaluated by MPP include:

- Time spent on calls for service and related work.
- Uncommitted time available for proactive patrol
- Average number of free units.
- Percentage of time all units would be busy.
- Response times for calls of different priority levels.

MPP's reporting and graphics tools will allow patrol managers to monitor both workload (inputs) and results achieved on an ongoing basis. Those tools make the complex job of managing patrol staff time more workable and provide meaningful information that can be used to better deploy patrol personnel.

For the calculations utilized in the report the following inputs were utilized.



SRF Calculation Components	SRF 2.9	Staffing SRF 2.8	SRF 2.7
Fielded Units Needed Per Day	227.8	227.8	227.8
Two Officer Cars	113.9	113.9	113.9
Total Officers	341.7	341.7	341.7
SRF Multiplier Applied	991.0	972.0	922.7
Minus Seasonal Adjustment	69.4	69.4	69.4
Total Officers Needed	921.6	902.6	853.3

Appendix B: Administrative Time Data

The table below provides an example of the significant patrol time investments into calls that require report writing.

Comparison of Service-Time required on Calls which Generate Administrative Follow-up

Outcome of Call	Percentage of Total Calls for Service	Average Units Required per Call	Average Service Time per Unit (minutes)
No Occurrence report	71%	1.6	31
Information Report	12%	2.4	66
Criminal Report	17%	2.4	81
Select Call Types When a Criminal Report is Required			
Suspicious Person		2.8	104
Criminal Domestics		2.7	102
Violent Crime		2.7	89
Property Crime		2.8	104

Source: CAD Unit History

This next table provides the quantitative analysis that was conducted to determine an estimate of productivity gain. Improving the report-writing process by 5-minutes would result in a productivity gain equivalent to \$590,025 annually. Therefore, reducing the time required to submit a report by 10-minutes would result in a productivity gain equivalent to \$1,180,050 annually.

Potential Efficiencies	Number of annual occurrences impacted	Total time saved (productivity gain in minutes)	Estimated Amount of Productivity Gain (\$1.50 per minute)
Each 5-minute increment saved per occurrence report	78,670	393,350	\$590,025

The cost 'per minute' for service time is conservatively estimated at \$1.50. This is based on 50% of patrol units having two officers and an average constable salary of \$62 per hour, translating to a Patrol Unit cost of \$93 per hour. Ancillary costs such as vehicle insurance and other operating costs (such as fuel or vehicle maintenance) are not included.

Appendix C: Building Condition Assessments and Deferred Maintenance

A Building Condition Assessment (BCA), also known as a Facility Condition Assessment (FCA), is a systematic inspection, review and report on the state of a commercial building's envelope performance, structural foundation and superstructure, and mechanical systems, including heating and cooling. A BCA may also include the exterior elements of the property including site grading and drainage, condition of roadway, servicing infrastructure and lighting. It is often compared to a home inspection, but it provides more detailed information and is necessarily more complex due to the nature of and requirements for commercial facilities.

Some reasons for conducting BCAs include identifying future (reserve) funding requirements; for due diligence, insurance, mortgage or vendor purposes; to evaluate the "as built" condition of a new building; to evaluate fire safety systems; as a part of an energy consumption audit; to evaluate the condition of a building or part of a building, in need of repair or renovation or to evaluation ease of accessibility for those who are physically challenged.

The BCA report will indicate whether you need to do repairs in the short term, as well as what will be required in the longer term, complete with estimated costs. One example of the scope of a BCA within a municipality provides an indication of possible practical outcomes of BCAs:

- Determine the present physical condition of the listed facilities with respect to structural and architectural components, building envelope, mechanical/electrical systems, fire/life safety systems, and predictive 10-year renewal costs;
- Determine the scope, timing and current cost of all building component repairs or replacement likely to be required;
- Determine the finances required for both normal maintenance and capital repair/replacement of these components for budgetary purposes.
- Establish a consistent condition rating format for all key components for each facility and the subsequent life cycle expectancy of same.
- Provide a means by which the City can anticipate and forecast expenditures required for these components, rather than responding to emergency repairs/equipment failures as they occur.

There is a clear difference in the estimate for BCAs provided by the City and the CPS. The CPS does not have a BCA program and therefore relies on an industry rate of approximately \$1.20 per square foot for the calculation of the cost of a BCA. However, the City having initiated its BCA program in 2018 quotes a rate of \$1 per square foot for buildings 15,000 square feet or less, but a lower rate for buildings with higher square footage. The City has also managed to amass discounts based on the volume of work being executed; the ability to assign a volume of BCAs to a contractor and existing relationship with selected and approved contractors that helps to drive down the cost.

This is an area where the CPS may accrue some savings by seeking to become engaged in the existing City BCA program. Based on current estimates the CPS could save approximately \$1 million through this partnership.

Building Condition Assessment Estimates				
Facility/Building Name	Year of Construction	Sq./Ft	CPS Cost Estimate \$	City Cost Estimate \$
AERO CENTRE (HAWKS)	2005	15,500.00	18,600.00	15,000.00
DISTRICT 01	2009	40,000.00	48,000.00	24,000.00
DISTRICT 02	1979	18,344.78	28,800.00	17,000.00
DISTRICT 03	1978	24,000.00	28,800.00	19,000.00
DISTRICT 04	1980	24,000.00	28,800.00	19,000.00
DISTRICT 05	2009	39,671.30	68,400.00	24,000.00
DISTRICT 06	1980	24,000.00	28,800.00	19,000.00
DISTRICT 07	2006	40,188.87	54,022.80	24,000.00
DISTRICT 08	2005	43,070.58	57,159.60	25,000.00
WESTWINDS - EAST	1981	450,000.00	540,000.00	78,000.00
WESTWINDS - WEST	1981	313,000.00	375,600.00	66,000.00
WESTWINDS - EVIDENCE & PROPERTY	2017	59,500.00	71,400.00	29,000.00
WESTWINDS - YOUTHLINK	1998	28,653.00	34,383.60	21,000.00
SPYHILL SERVICES CENTRE (APS)	2020	50,000.00	60,000.00	27,000.00
NSC - INDOOR RANGE	2002	20,126.00	24,151.20	18,000.00
NSC - MCV Storage	2018	2,370.48	2,844.00	6,000.00
NSC - OUTDOOR RANGE	2014	43,050.00	51,660.00	25,000.00
NSC - SHOOTHOUSE	2014	3,250.00	3,900.00	7,000.00
NSC - STABLES	2014	4,800.00	5,760.00	9,000.00
NSC- GARAGE (TAJ MAHAL)		3,031.80	3,637.20	7,000.00
NSC- NORTH SERVICE CENTRE	1975	61,374.00	73,648.80	30,000.00
NSC- TEAR GAS FACILITY		584.11	6,000.00	4,000.00
DRIVER TRAINING TRACK	1981	3,668.00	4,401.60	8,000.00

Building Condition Assessment Estimates				
Facility/Building Name	Year of Construction	Sq./Ft	CPS Cost Estimate \$	City Cost Estimate \$
WESTWINDS - CARWASH	2012	1,043.79	12,000.00	5,000.00
Gross Total Estimate			1,630,768.80	526,000.00

A Facility Condition Index (FCI) is an industry management tool used to provide a benchmark to compare the relative condition of different facilities and it was utilized to estimate the CPS's deferred maintenance costs into the future. It is calculated by dividing the cost of the facility's deferred maintenance (assessed in a BCA) by the current replacement value of the facility (monetary value the organization places on the facility).

$$\text{FCI} = \frac{\text{BCA (deferred maintenance)}}{\text{Current Replacement Value}}$$

The CPS only has one current BCA for the facilities in its portfolio District Office 4. Using the BCA data and Original Project Cost Estimate, DO4's FCI is 21%.

$$\text{DO4 FCI} = \frac{\$9,025,000.00}{\$1,879,700.00} = 21\% \text{ (poor)}$$

Since there are no BCAs for other facilities in the infrastructure portfolio, which would outline the current deferred maintenance costs, the equation was reversed engineered using an estimate of each facility's FCI and the original cost to construct the building. The FCI was assessed based on the year the facility was built:

- Less than one year old = 1%
- 1-16 years = 10%
- 17-29 years = 15%
- 30 years and over = 21%

The estimated replacement value (cost for initial construction) was provided by the CPS. Using this information, the deferred maintenance cost for each facility and the entire portfolio was then calculated.

$$\text{Deferred maintenance} = \text{FCI} \times \text{Current Replacement Value}$$

The total current deferred maintenance for the CPS infrastructure portfolio was estimated to be \$68,340,000.

Although this approach may overestimate the deferred maintenance, it does provide a conservative approach that is preferred to an underestimation of this value. It is also considered as the most effective method for estimating deferred maintenance in the absence of detailed and current BCAs.

Appendix D: Space Usage

At Westwinds, the CPS accommodates 1568 employees in 40,810 m² of space (26.03 m²/employee), featuring more traditional, enclosed offices.

CPS: Current State Westwinds Administration Area			
Facility	Area (square metres m ²)	FTE (desk space available)	Square Metres/FTE
Westwinds East Main Floor	9,627	797	30.07
Westwinds East 2nd Floor	14,340		
Westwinds West Main Floor	8,193	771	21.85
Westwinds West 2nd Floor	8,650		
Gross Total	40,810	1,568	26.03

By adapting new space standards, this same number of employees can be accommodated in less space. The two options explored are predicated on the general office consisting of 80% open space and 20% closed office space and allocate between 16.7-18.5 m² per person, including all support and circulation space.

Option 1: Using the City of Calgary 2014 Space Standards, the CPS can accommodate 1568 employees in 26,186 m² (16.7 m²/employee). This would equate to a space savings of 14,624 m², i.e. a 34% reduction from current space usage.

CPS: Scenario 1 City 2014 Space Standards Administration Area				
Facility	Area Required (m ²)	Area Savings (m ²)	FTE	Area Savings (m ²)/FTE
WWE Area @ 16.7(m ²)/person	13,310	10,657	797	13.37
WWW Area @ 16.7(m ²)/person	12,876	3,967	771	5.15
Gross Total	26,186	14,624	1,568	9.33

Option 2: Using the City of Calgary 2018 Space Standards, the CPS can accommodate its 1568 employees at Westwinds in up to 19,130 m² (12.2 m²). This option is based on 40% of employees being able to work as mobile or remote employees. The CPS would save 21,680 m² of space, i.e. a 53% reduction from current usage.

CPS: Scenario 2 City Workplace Solutions Space Standards Administration Area				
Facility	Area Required (m²)	Area Savings (m²)	FTE (desk space available)	Area Savings (m²)/FTE
WWE Area @ 12.2(m ²)/person	9,723	14,244	797	17.87
WWW Area @ 12.2(m ²)/person	9,406	7,437	771	9.65
Gross Total	19,130	21,680	1,568	13.83

The potential savings do not automatically translate into additional monies for the CPS. However, one of the major benefits would be to enable underutilized existing space to be repurposed to support the growth of existing programs and the addition of new ones. This could eliminate the need for investment of capital for additional space or renovations or result in less investment, where required.

Sources

- Argyle Public Relationships. (July 2020). *Service Optimization Review. Community Engagement*. Prepared for Calgary Police Service.
- Calgary Police Service. (2018). *2019-2022 Service Action Plans*. Calgary, AB: Calgary Police Service.
- City of Calgary. (2016). Corporate Energy Plan 2016-2026. Corporate Analytics & Innovation, City of Calgary.
- Fleming, J. & Grabosky, P. (2009). Managing the Demand for Police Services, or How to Control an Insatiable Appetite. *Policing A Journal of Policy and Practice*, 3(3), 281-291.
- Kiedrowski, J; Petrunik, M; MacDonald, T; & Melchers, R. (2013). *Canadian Police Board Views on the Use of Police Performance Measures*. Prepared for Law Enforcement and Policing Branch. Public Safety Canada.
- Mazowita, B. & Rotenberg, C. (2019). *The Canadian Police Performance Metrics Framework: Standardized Indicators for Police Services in Canada*. Canadian Centre for Justice Statistics, Catalogue no. 85-002-X.
- National Police Chief's Council. (2017). *Better Understanding Demand – Policing the Future. National Performance Management Coordination Committee, National Police Chief Council*. Retrieved from <http://www.npcc.police.uk/2017%20FOI/CO/078%2017%20CCC%20April%202017%2024%20Better%20Understanding%20Demand%20Policing%20the%20Future.pdf>
- US Department of Justice.(2014) *Community Policing Defined*. Community Oriented Policing Services.
- Wally, P., & Adams, M. (2019): *An Evaluation of Demand Management Practices in UK Police Forces*. Center for Policing Research and Learning. Retrieved from <https://www.open.ac.uk/centres/policing/sites/www.open.ac.uk.centres.policing/files/files/News/An%20Evaluation%20of%20Demand-Management-Practices-in-UK-Final-report.pdf>
- Wilson, J. & Weiss, A. (2014). *Performance Based Approach to Police Staffing and Allocation*. Washington, DC: Office of Community Oriented Policing.
- Wilson, J. & Weiss, A. (2014). Police Staffing Allocation and Managing Workload Demand: A Critical Assessment of Existing Practices. *Policing: A Journal of Policy and Practice*, 8(2), 96-108.