



OTTAWA POLICE SERVICES

WORKPLACE INNOVATION PROJECT FINDINGS REPORT

May 2015

01.1 Introduction

01.1.1 FACILITIES STRATEGIC PLAN (FSP) AND THE WORKPLACE INNOVATION PROJECT (WIP)

Facilities Strategic Plan Background

As part of its ongoing efforts to create a long-term capital projects strategy and to right-size police facilities in Ottawa, in 2013, the Ottawa Police Service [OPS] completed the Facilities Strategic Plan (FSP). The FSP is the outcome of an extensive process begun in 2011.

Late in 2011 OPS staff began the development of a long-term plan for the acquisition, disposal and re-fit of OPS facilities, a key element of the infrastructure that supports police operations. Through 2012 and early 2013, staff conducted research, consulted with multiple stakeholders and continued to refine the draft Plan. The Finance and Audit Committee (FAC) was consulted several times and the final draft was tabled for consideration by the FAC on June 11, 2013. The goal was to create a strategy to meet OPS facilities requirements for the 17 year period from 2014 to 2031. The period of the Plan aligned with the City of Ottawa's Development Charge Study. The FSP report identified all of the major infrastructure projects for 17 years (2014-2031). It included both acquisition and disposal projects and addressed seven (7) new build projects, five (5) major realignment projects within existing facilities and four (4) disposals (2 leased, 2 owned).

The FSP identified the projected size and cost of the facilities required based on current practices. Recognizing the significant changes in modernized technology and workplace strategies which offer opportunities for space and cost savings, the FSP included a qualification to reduce the cost of the plan by 25%. The FSP was approved by the Police Service Board (PSB) with the inclusion of the 25% reduction. The solutions was not prescribed but a commitment was made to report back to the PSB on how these reduction could be achieved.

Capital Reduction Targets

Staff undertook a significant effort to determine the various ways in which OPS might realize 25% savings from the project plan. The effort, termed the Workplace Innovation Project (WIP) examined multiple workstreams to identify ways to reduce the projected cost of the FSP while maintaining functionality, preparing for growth of OPS and assuring quality and fit for purpose in the capital projects.

Key Facts

During the period of the strategic plan, the portfolio is expected to grow by approximately 45% or 277,000 sq.ft. from current 596,000 square feet.

FSP includes both acquisition and disposal strategies which are critical to protecting operations. In particular the plan deals with:

- disposing of high risk facilities
- dealing with business continuity issues (full redundancy in areas like Communications Centre and IM/IT)
- acquisition/building strategies to address city growth; staffing growth (391 staff over the term of the plan - now 1947 sworn and civilian members); current and projected shortfalls of space
- and health and safety issues

The FSP seeks to address these issues but in context of the new/future workplace. OPS specifically is looking at trends and best practices to understand how others are tackling similar challenges in portfolio and workplace, while addressing sustainability and budget concerns.

17 YEARS

7 NEW BUILD PROJECTS

5 MAJOR REALIGNMENTS

4 DISPOSALS

The capital projects evaluation initially ran in parallel with the Service Initiative (SI) and the Information Management/ Information Technology (IM/IT) Initiative. Although these two projects were ramping up, the capital projects work in the FSP necessarily moved quickly. This is important as forthcoming results from SI and IM/IT Strategy may have implications to the results herein. Implications could range from suggested relocations of functions that are built into programs and costs in the capital projects or increase/reduction in programmatic requirements for groups or support spaces.

In an ideal context, these projects would have been intertwined in both time and decision-making. However, due to time pressures on the FSP, WIP necessarily moved faster than either SI or IM/IT. As these two initiatives develop their approaches further and ultimately conclude their processes, the results of the WIP capital projects must be revisited to assure alignment with those outcomes. Without those outcomes in hand, the team proceeded with examination of the possible opportunities for each of the capital projects in the FSP.

Previous Optimization

In most locations, OPS has already maximized the efficiency of its work spaces. Given the constraints of the existing buildings, current space standards, and current ways of working, the WIP review did not identify any areas where a significant increase in efficiency is possible in existing environments. In order to reduce the cost of the FSP, new ways of working, new approaches to space planning in new construction and new approaches to construction and procurement will be necessary.

Initial Results

The initial FSP budget was projected to be \$244.46 M. The target budget to meet the 25% reduction was \$183.34 M. This equates to a reduction target of \$61.11 M. With the results of each capital project evaluation, the team identified a potential overall **savings of \$49.67 M** across all projects combined. This represents an approximate **20% savings** compared to the original FSP estimate, but **falls short of the 25% target unless the additional proposed opportunities can be implemented.**

FSP drivers:

- (25% COST reduction target – reduces 244M plan to \$184M)
- Identify partnerships that reduce duplication or overlap, allowing OPS to work “smarter”
- Reduce square footage by modifying existing workplace standards
- Identify new approaches to work that will result in less space /or dependencies on the built environment including;
- Provide more multi-use spaces and less dedicated spaces;
- Improve work from home opportunities;
- Improve mobile applications and leverage technology to support mobile work
- Improve electronic records management
- Provide enhanced collaborative spaces to facilitate problem solving
- Streamline equipment requirements to reduce storage
- Address multiple generations and functions working in space together
- Reduce operating costs
- Use lower cost project delivery options (buy versus build)
- Identify lower cost building techniques

01.2 Workplace Innovation Project Overview

Workplace Innovation Project (WIP)

At the time of the FSP, it was not identified how OPS would achieve the proposed 25% reduction in space and cost. Cost reduction strategies were not prescribed, but a combination of space reduction and operations cost reductions were the targeted approach. To advance the conversation, OPS recommended a study - the Workplace Innovation Project - to identify how OPS could meet the reduction through new ways of working and building practices.

The Workplace Innovation Project was organized across five work streams reflecting the core areas of influence as determined by OPS. These included:

1. Built Environment Strategy - Acquisition and Construction
2. Built Environment Strategy - Operations and Maintenance
3. Flexible Work Environment
4. Human Factors
5. Change Management

Workstream Focus

WORKPLACE INNOVATION PROJECT - PROJECT DELIVERY FRAMEWORK						
GOALS	Satisfy Operational Requirements	Enhance mobility opportunities for staff from any Police site	Support a different and innovative way of working at OPS	Engage staff in solutions development	Leverage Partnerships	Reduce / Optimize Space to enhance sustainability
INPUTS	IM/IT STRATEGY			SERVICE INITIATIVE		
	<ul style="list-style-type: none"> Future Technology Trends 	<ul style="list-style-type: none"> Mobility Solutions Infrastructure Requirements 	<ul style="list-style-type: none"> Records access enhancements 	<ul style="list-style-type: none"> Vision of Future Policing Environment 	<ul style="list-style-type: none"> Project Service Delivery Work Themes 	<ul style="list-style-type: none"> Major shifts in service delivery model
WORKPLACE INNOVATION PROJECT						
WIP MAJOR ELEMENTS	PROJECT COORDINATION AND ADMINISTRATION	BUILT ENVIRONMENT STRATEGY (ACQUISITION + CONSTRUCTION)	BUILT ENVIRONMENT STRATEGY (OPERATIONS + MAINTENANCE)	FLEXIBLE WORK ENVIRONMENT	HUMAN FACTORS	CHANGE MANAGEMENT
ACTIVITIES	<ul style="list-style-type: none"> Define Scope Set up team and structure Develop Schedule Identify funding requirements Set up Project office for SI / WIP / Support Resources Establish strategic links with SI and IM/IT Communicate project goals to stakeholders Coordinate Deliverables Establish booking system on CAFM to track space usage 	<ul style="list-style-type: none"> Research Construction Trends and methodologies Identify space reduction strategies Comparison of current to new Test fits Project Cost savings Building Tours Think Tank / Visioning symposium with Industry Experts Impact of AODA guidelines Sustainability philosophy 	<ul style="list-style-type: none"> Research O+M trends and methodologies Identify operating cost reduction strategies Identify space reduction Building Tours Sustainability philosophy 	<ul style="list-style-type: none"> Research Job shadows to define major functions and requirements Staff visioning sessions Pilot space standards and flexible work environments Assess occupancy rates and optimize shared uses Design conferences Ergonomics assessment Visioning symposium with Industry Experts Impact of AODA guidelines Employee productivity (?) 	<ul style="list-style-type: none"> Investigate new ways that people are working Trends based on workforce demographics Test new work methodologies through staff survey and focus groups Consult Real You program to identify opportunities to enhance the work environment (Themes may come from SI - KPMG report) 	<ul style="list-style-type: none"> Management practices for mobile workforce Answer "how does an organization succeed in small space) Identify elements that will require a cultural shift Identify strategy to shift culture Communications Plan including success stories and rationale for change
DELIVERABLES/OUTPUTS	<ul style="list-style-type: none"> Project Plan Approval PSB report 	<ul style="list-style-type: none"> Guidelines for Developing and Building a Sustainable Police Environment Sustainability Guidelines 	<ul style="list-style-type: none"> Guidelines for Maintaining Sustainable Police Infrastructure Sustainability Guidelines 	<ul style="list-style-type: none"> Design Guidelines Feature based Corporate Standards with minimum requirements 	<ul style="list-style-type: none"> Human Factors Guidelines (support OPS functions and demographics) 	<ul style="list-style-type: none"> Change Management Strategy
RESOURCES	<ul style="list-style-type: none"> WIP Project Team (2) PMO (?) SI Administration 	<ul style="list-style-type: none"> WIP Project Team (2) Consultants (Architectural) Academia 	<ul style="list-style-type: none"> Director of Police Facilities City Public Works Consultants (Engineering) 	<ul style="list-style-type: none"> WIP Project Team (2) Consultants (Design) Academia 	<ul style="list-style-type: none"> Consultants (Ergonomists) SI + KPMG WIP Project Team 	
SUCCESS INDICATOR	25% REDUCTION IN OVERALL COST OF THE FACILITIES STRATEGIC PLAN (\$62M IN SAVINGS IDENTIFIED) POLICE SERVICES BOARD APPROVAL					

1 Prepared by Pamela J. Mills (18 October 2013 v.2)

FIGURE 01.1. WIP Workstreams

Workstreams in the WIP

Built Environment Strategy [BES]- Acquisition and Construction

The BES Acquisition and Construction workstream focused on the ways in which design and construction might be delivered to streamline processes and to reduce overall project costs and ongoing operating costs.

Built Environment Strategy [BES] - Operations and Maintenance

The BES Operations and Maintenance workstream focused on the ways in which more sustainable practices and other general operations issues might reduce costs.

Flexible Work Environment

The Flexible Work Environment workstream examined the existing approach to space provisioning to determine opportunities to further increase efficiencies and introduce more innovative workplace strategies.

Human Factors

The Human Factors workstream focused on the perspectives from the sworn and civilian staff members, gathering feedback through surveys, focus groups and the Real You data provided by OPS.

Change Management

The Change Management Workstream, necessarily limited due to the ongoing work with the Service Initiative and Information Technology Initiative, identified the key phases that OPS must undertake to realize these savings.

Each work stream explored the various opportunities for OPS to improve its work environment while targeting cost reduction strategies. Each workstream was initially evaluated at a macro-level for opportunities applicable to OPS and then used as a lens with which to look at the proposed projects in the FSP.

Overview of the Process

To do this work, the team collected a significant amount of data from both best practices and through direct engagement with OPS staff. The team then analyzed this data in the context of the 25% reduction target, identifying macro-level opportunities that are applicable across multiple projects within the FSP and additional opportunities that are targeted to specific projects within the FSP. In comparing all opportunities, the team then prioritized the actions that would provide the most immediate value to OPS. The team also identified broader actions for OPS to consider longer term. The recommendations herein reflect that approach.

In the subsequent sections, the data collection process and findings, the analyses and the recommendations are presented. The Appendix provides supporting materials to these chapters.

01.3 Data Collection and Analysis Summary

01.3.1 DATA COLLECTION

Data Collection Summary

The data collection included:

1. Review of Existing OPS Representative Facilities Plans
2. Orientation and Tour of Representative Facilities
3. Review of existing OPS space standards and Workplace 2.0 space standards
4. Review of FSP assumptions with OPS
5. Real You Program Summary
6. AODA Guidelines Review
7. Review of global workplace trends
8. Facility design trends and case studies
9. Articles on the future of Police facilities
10. Construction Procurement models
11. Survey of emerging construction technologies and materials
12. Review of current sustainable initiatives and case studies
13. Summary of operational expenses
14. Review of current utility rates and energy trends

Exclusions

Due to time and budget constraints, the team was unable to conduct job shadowing or extended research into work patterns across the various user groups. As a result, the team is relying on the input of key OPS team members and the insights of the OPS reviewers.

The team was also unable to conduct time-based utilisation studies as OPS currently lacks an automated reporting system for monitoring facility occupancy. Because occupancy data was not available, the WIP report is not able to quantify the degree to which space is over/underused on a daily basis. It is recommended that this study occur as a next step. In the absence of this information, recommendations for better using and sharing space are based on information collected in interviews, surveys, and best practices.

Consultations

1. Leadership Meetings with the Service Initiative [SI] and Information Management/Information Technology Initiative [IM/IT]
2. Workshop with SI Workstream Leads
3. Review of IBM Roadmap Strategy in concert with the FSP timing
4. Focus groups with all Directorates to understand needs
5. Survey of all OPS Membership to assess workplace needs
6. Development and conduct of Best Practices Symposium with other Canadian Law Enforcement Agencies

01.3.2 ANALYSIS

Analysis Summary

The analysis included:

1. Evaluation of each proposed project for potential of 25% reduction and development of target reduction quantities
2. Development of a quantitative program analysis of all proposed projects
3. Development of alternative OPS space standards
4. Evaluation of best practices and workplace trends as applicable to OPS
5. Review of focus groups findings and common themes with applicability to target projects
6. Review of survey findings and applicability to target projects
7. Development of workplace strategies to capture the greatest value for FSP
8. Ongoing Reviews with SI and IM/IT to maintain awareness of the parallel work streams including the IBM Roadmap timing
9. Analysis of alternative facility planning strategies
10. Cost comparisons (potential savings) of methods of construction and materials
11. Review of best models of construction procurement
12. Summary of building and user operational expenses
13. Review of probable sustainable goals and objectives
14. Input from City of Ottawa Building Operations
15. Test fits of proposed South and Corporate Services facilities

Key Takeaways from Data Collection and Analysis

- There is a strong desire among OPS membership to work in more mobile ways, including working from home, working from alternate OPS locations, and working at alternate locations within the building.
- Planned changes in IT will enable OPS membership to work in more mobile ways and reduce the burden on OPS facilities within the FSP time frame.
- There are limited ways to reduce FSP costs without implementing new ways of working and building.
- Redefining the space standards and implementing best practices in space planning contribute reduction to the FSP.
- Reconsidering how OPS couples functions within facilities will allow OPS to reduce space and construction costs proportionally.
- Investing in more sustainable practices will reduce operations costs.

01.4 Cost Savings Strategies

01.4.1 INTRODUCTION TO COST SAVINGS

Cost savings strategies explored in the Workplace Innovation Project fall into three categories: (1) space allocation, (2) building design and construction, and (3) building operations.

01.4.2 SPACE ALLOCATION

Mobility

Mobility refers to the practice of working from multiple locations in addition to, or instead of, an assigned work space.

While many officers already work mobile, most civilians do not. Mobility may include working at an OPS location other than a primary location, elsewhere onsite at the primary OPS location (such as an unassigned seat), or from home. This represents the greatest opportunity for footprint reduction in the FSP. However it requires the development of a Mobility Program in concert with an overall Workplace Strategy [IT, Operations, Human Resources and Space] to support a mobile workforce.

The Mobility Program sets guidelines for enabling and supporting mobile work, including identifying the degree of assigned versus free address/touchdown space, hoteling ratios, protocols related to space usage and frameworks. The most significant change recommended is the use of seat sharing ratios for civilians, starting with a ratio of 1.5 people to seats for general staff, but not for managers. Ratios vary slightly by building and function, but the ratio of 1.5:1 represents the baseline for most staff not on rotating shifts currently on a 1:1 standard. This reduces the amount of space needed for desks and allows more space to be used for other functions. This represents a major change and will require additional change management to be successful.

Space Standards

Space standards refer to the approved space layouts and types that OPS provides in the workplace, including offices, desks, and conference spaces.

Significant savings can be achieved by reducing a few key space standards in the OPS portfolio, such as the typical office size, to sizes that are more in line with current trends in office design.

The current degree of variance in space standards introduces complexity in managing space over time and reduces footprint efficiencies. Recent optimization efforts have focused on improvements in this area. Streamlining these standards in alignment with Government of Canada's Workplace 2.0 guidelines captures additional savings.

Modular Planning

Modular planning refers to the use of consistent dimensions in space planning so that components of a plan can be interchanged. Using consistent dimensions for as many different spaces as possible maximizes OPS' ability to easily change functions over time, and plan more efficient spaces.

It should be noted that the modules may need to vary at existing locations such as Elgin due to structural limitations of existing buildings.

Open Planning vs. Cellular Office Suite

Reducing the amount of separation between office suites can contribute significantly to space savings, by reducing the need for additional circulation and egress points. The use of office suites, as opposed to shared open work areas, significantly increases the required circulation and limits the ability to collaborate between groups and to easily manage change.

Storage Reduction

Storage at OPS includes organizational records, individual records (not personal), and OPS equipment and material. Reducing hard copy files and digitizing records offers the some of the largest potential space savings. Digitization initiatives are planned to make this possible, but still remain to be executed.

Other Strategies

In addition to the primary strategies outlined above, various project-specific opportunities are outlined in the full report. In addition, the WIP report identifies some strategies that are not recommended at this time, but may be viable opportunities in the future.

01.4.3 BUILDING DESIGN & CONSTRUCTION

Site Selection

Use existing or previously developed sites with infrastructure already in place where possible as these can provide significant savings. Also proximity to mass transit can reduce parking requirements.

Building Design

Passive design strategies that take advantage of the natural site resources may offer significant and inexpensive operational energy savings. Building orientation, solar shading, sun controls and daylight harvesting may reduce energy consumption loads.

Material Selection

Regional materials that offer durability and recycled content should be investigated, as these are often less costly. This is another takeaway from the Best Practices Symposium.

Construction Techniques

Choose appropriate methods of construction that are specific to the functional program. For example, pre-fabricated and tilt-up construction techniques are recommended for storage facilities. The matching of locally-sourced materials that are suitable to the application will provide additional savings.

Construction Procurement

Construction Management, Design-Build and other Integrated Project Delivery model approaches should be considered to explore efficient construction techniques and materials at the on-set of Projects. These project management procurement models historically reduce the number of change orders and provide cost effective and efficient solutions for construction. Descriptions of how these methods differ from traditional methods are outlined in the Appendix.

01.4.4 BUILDING OPERATIONS: LEED & SUSTAINABILITY

Water Consumption

Maximum flush and flow water rates should be set to reduce potable water usage and monthly utility costs. Use of native plants and other landscaping strategies may reduce irrigation and associated water demands.

Energy Consumption

Energy costs, both electricity and natural gas, are on the rise. Energy conservation measures (ECM) implemented in the OPS buildings identified will assist in offsetting the risk associated with escalating energy costs. ECM's to be considered for all sites include: passive design strategies (i.e. natural ventilation and daylighting harvesting), energy efficient lighting i.e. Light Emitting Diode (LED) technology, advanced HVAC design, smart meters measuring energy consumption, advanced Building Automation System (BAS) management systems, and demand side management techniques.

Opportunities for existing buildings include advanced commissioning, plug load management, and benchmarking in addition to user engagements opportunities to ensure optimal building operations i.e. through Building User Guides (BUG), Post Occupancy Evaluation (POE) studies, and the continuation of the OPS 'Think Green' Occupant Engagement program.

Each site identified in this report should be analyzed in further detail on a building-by-building basis to determine the optimal energy conservation opportunities. The energy cost savings trends identified in this report can be leveraged to ensure ongoing operational cost savings

LEED Certification and Sustainability

To help meet the City of Ottawa requirement for LEED Certification for all civic buildings over 5,400 sf and to meet the goals identified in the 2012 document Ottawa Police Services Environmental Scan- namely increasing the organizations focus on cost effectiveness and sustainability- it is recommended that project sites identified pursue LEED Certification.

LEED Certification, paired with overarching sustainability goals, allows project teams to reap operational cost savings that can be leveraged to achieve the OPS's goal of cost savings. Recently conducted research presented by the USGBC found that organizations that adopt more rigorous environmental standards in their buildings experience a work force that is on average 16% more productive than their non-green firm counterparts.

It should be noted that additional short-term capital costs may be associated with achieving the higher levels of LEED certification, but can allow OPS realize long term savings.

01.5 Recommended Strategies Applied to Each FSP Project

01.5.1 RECOMMENDATIONS SUMMARY

Based on the analysis of opportunities, the WIP recommends the following approaches to reduce the proposed cost of the FSP.

- Implementing new ways of working that will allow personnel greater freedom both onsite and offsite
- Reducing the overall amount of space dedicated to the individual while increasing the amount of collaborative/multifunctional space
- Improving the efficiencies of floor plates through smart workplace planning and reductions in redundant circulation
- Improving construction means and methods and construction documentation standards to reduce overall initial costs
- Implementing greater sustainability measures to reduce ongoing operations costs.

The following section presents a summary of the recommended strategies, followed by a summary of the business case for the proposed changes, and the results of the cost analysis.

01.5.2 PROJECT SPECIFIC BUILT ENVIRONMENT STRATEGIES APPLIED TO EACH PROJECT

The following is a summary of the recommended construction and operations strategies by project.

Swansea Phases 1,2,and 3 (2014, 2017, 2029)

Cost reduction strategies for the three-phase Swansea project are based on the use of different construction types for each of the different phases as appropriate.

For Part 1, existing cold storage space is being reassigned as special purpose space. This is largely an interior renovation project that is within a City of Ottawa owned building.

For Part 2, there is an option between an expansion of the existing building or a stand-alone building. Pre-fabrication or tilt-up construction is recommended to reduce the cost of traditional construction while providing a secure envelope (concrete precast walls). It may also be advantageous to build a larger facility initially to generate economies of scale.

For Part 3, an assessment of existing city owned spaces and allocation will determine a range of possibilities. Because these factors are presently unknown, a procurement strategy would

be suggested after completing a space assessment study of the existing city owned building.

Court Expansion

There has been some discussion on the possibility that other spaces within the Court Building or in adjacent buildings may be coming on line which may negate this undertaking and/or reduce its overall budget expenditure.

Since the project is within a leased environment, the landlord will review proposed alterations and have a preference to use consultants and contractors who are familiar with their base building systems. Building owners may provide incentives or improvement packages that would influence the lease rate.

South (2020)

The South Facility is a complex project with many different space types, and a more specific program than the other FSP projects. As such, recommendations are numerous, including:

- Address the program requirements by applying the new ways of working explored in the work style diagnostics and applying standards for space allocation and mobility.
- Decouple the program of requirements into building types which are more appropriate for the targeted uses of the facility components, not overbuilding for the use intended.
- Simplify the design using best practice for orientation and compactness.
- Minimize the land use by right sizing the design overall.
- Use a Design-Build approach, as the project requires multiple building types and cost is a key driver in undertaking this project. Since time is also a factor if the building is to be complete by 2020, an Integrated Design Process (including BIM) within a Design-Build procurement is a sound approach. OPS must be ready to accept this approach and a possible reduction in quality by assigning appropriate distribution of funds to the key components of the facility.
- Decouple program components and use several construction typologies such as light weight, quick erect steel frame construction for the office environment (due diligence on the soils capacity to be investigated to verify concrete structures and piles). For the other components of the program a tilt up structure and/or a pre-manufactured building system is appropriate, allowing for speed of execution and even on site manufacturing in the case of a tilt up system.

Corporate Services (2024)

Recommendations for the Corporate Services facility are based on the application of several strategies as follows:

- Address the program requirements by applying the new ways of working explored in the work style diagnostics and applying standards for space allocation and mobility.
- Decouple the program of requirements into building types which are more appropriate for the targeted uses of the facility components, not building Class A space for storage.
- Simplify the design using best practice for orientation and compactness.
- Minimize the land use by right sizing the design and potentially returning a portion of the lands to the City for disposal or other use.
- With cost still being a driver, but sound design for long term consolidated use being key using an Integrated Design Process (including BIM) as a procurement vehicle is a sound approach. The OPS must be ready to accept this approach and the possible reduction in quality by assigning appropriate distribution of funds to the key components of the facility. Because the project is planned for 2024, it is anticipated that an integrated project delivery approach will be a common method of delivery in this region within the project time frame.
- Some decoupling of the program is proposed. Light weight, quick erect steel frame construction is recommended for the office environment (due diligence on the soils capacity to be investigated to verify concrete structures and piles). For the other storage type components of the program a pre-manufactured building system is appropriate allowing for speed of execution.
- This existing site requires that demolition be undertaken and any site remediation be completed and closed prior to building the new build outs. Strategically and based on timing there may be some advantage to add the demolition of the existing building as part of the RFP for the new construction since it will bring additional scale to the project and possible economy of scale savings, attracting additional constructors to the table.

Central Patrol (2029)

Since this project is further into the future many approaches can be entertained as to its procurement and its location either on a standalone piece of property or within another project or as part of a leased or shared property. Notwithstanding at this time we can assume that a Design Build scenario may be the appropriate procurement vehicle since the actual venue or site is unknown. We would expect that a BIM technology approach would be the norm by 2029 for most design, construction, operations and maintenance programs.

Recommendations are based on the application of the strategies as follows:

- Continuously review the program requirements by applying the new ways of working and servicing the public closer to the projected build.
- Engage in the predesign parameters of setting the functional program needs for a broad base expression of interest in the project to obtain industry and market driven responses so as to formulate the request for proposal.

PDC Expansion (2027)

Since this project will be under the auspice of the Colleges facilities process and their recent preferred approach to procurement has been Design-Build it can be expected that this would continue to be the procurement vehicle into the future. It would also be suggested that an IPD procurement would be anticipated but funding mechanism may dictate differently.

We can expect the College to have an influence as to the sustainability goal targets and the use a design-build approach using local consultants which are using a BIM platform to deliver the project.

Elgin

The WIP does not recommend any changes or reductions to what the FSP proposes at the Elgin facility. This is because the FSP recommendations for Elgin include only basic interior renovation, most of which are many years in the future. This study concludes that it will benefit OPS to continue to budget the full cost of these renovation projects, as the proposed locations will likely be in need of basic upgrades within the proposed time frame. Furthermore, because the scope included only basic renovation, realistic strategies for meaningful cost reduction are limited.

01.5.3 RECOMMENDATIONS MATRIX BY PROJECT

Of the proposed strategies for reducing space and costs, only certain strategies are recommended for each FSP project.

The table below illustrates which of the proposed strategies applies to each FSP project.

	SWANSEA	COURT EXPANSION	SOUTH FACILITY	CORPORATE SERVICES	CENTRAL PATROL FACILITY	PDC EXPANSION	ELGIN REFIT
New Ways of Working and Planning Recommendations							
Mobility		x	x	x	x		x
Space Standards	x	x	x	x	x	x	x
Modular Planning		x	x	x	x		x
Open vs. Cellular		x	x	x	x		x
Storage Reduction	x	x	x	x	x		x
Construction and Operations Recommendations							
Building Design	x		x	x	x	x	
Material Selection	x	x	x	x	x	x	x
Construction Techniques	x		x	x	x	x	x
Construction Procurement	x		x	x	x	x	
Water Consumption			x	x	x		
Energy Conservation	x		x	x	x		
Project-Specific Recommendations							
Recommendation	Decouple projects by construction type.	Limited opportunity	Decouple parking from base building construction.	Reduce document storage based on digitization initiative.	Decouple vehicle space from base building construction.	Decouple practical training space from base building construction.	Limited opportunity as FSP scope is basic interior refit, required based on age.

TABLE 01.1. Recommendations matrix by project

01.6 Savings

01.6.1 SAVINGS SUMMARY

The WIP study has estimated the projected savings of each FSP project.

Space savings are calculated based on applying the proposed workplace strategies to the proposed program for each FSP project. Cost savings are estimated based on applying the proposed construction and design strategies on a dollars-per-square-foot basis. The reduced cost per square foot is then applied to the reduced space estimate to calculate the reduced project cost. The cost is then escalated to the appropriate year to reflect the proposed year of construction, using the same percentage as the original FSP

The following three tables reflect the proposed space reductions, cost per square foot reductions, and energy cost reductions that can be achieved by applying the recommended strategies.

01.6.2 TOTAL SPACE SAVINGS AND ESTIMATED COST SAVINGS PER SQ. FT

The table below shows the proportional proposed savings from implementing the space allocation strategies and building design and construction strategies. This illustrates how savings can be attributed to the proposed strategies, and shows that both categories of recommendations work in concert to achieve the overall savings goal.

The potential to achieve savings through space allocation and construction methods varies significantly by project. Note that some projects can achieve savings in only one category.

Note that the bottom line of the "Construction Savings per SF" column is a weighted average, resulting from applying the cost per square foot savings to the associated square footage of each project.

For ease of comparison, the rates below are shown without escalation.

Cost rates include construction costs, soft costs FF&E, design, and contingency.

PROJECT	SPACE ALLOCATION SAVINGS				PROJECT SAVINGS PER SF			
	FSP SF	WIP SF	SF SAVINGS	% SF SAVED	FSP \$/SF	WIP \$/SF	\$/SF SAVINGS	% \$/SF SAVED
South facility	175,000	156,463	18,537	11%	\$472	\$465	\$7	1%
Corporate services	140,000	120,333	19,667	14%	\$487	\$396	\$91	19%
Court expansion	7,000	5,212	1,788	26%	\$125	\$150	(\$25)	-20%
Central patrol facility	50,000	46,115	3,885	8%	\$509	\$523	(\$14)	-3%
PDC Expansion	15,000	13,225	1,775	12%	\$508	\$319	\$189	37%
Swansea part 1	10,000	10,000	0	0%	\$459	\$218	\$241	53%
Swansea part 2	15,000	15,000	0	0%	\$459	\$218	\$241	53%
Swansea part 3	10,000	10,000	0	0%	\$444	\$218	\$226	51%
Elgin 2	13,000	13,000	0	0%	\$125	\$150	(\$25)	-20%
Elgin 3	13,000	13,000	0	0%	\$125	\$150	(\$25)	-20%
Elgin 4	6,000	6,000	0	0%	\$125	\$150	(\$25)	-20%
Elgin 5	30,000	30,000	0	0%	\$125	\$150	(\$25)	-20%
Total	484,000	438,348	45,652	9%				*Avg: 12%

TABLE 01.2. Projected Square Footage Savings and Construction Savings per Square Foot by Project

* Average weighted based on associated SF



01.6.3 COST SAVINGS ACHIEVED PER PROJECT

The table below shows the estimated cost savings outcomes that result from applying the reduced construction cost rates per square foot to the reduced square footage, escalated to the appropriate year for each project using the same escalation rate as the original FSP. Note that the percentage of savings varies by project.

Estimates are based on an order of magnitude costing model and inherently have a degree of uncertainty since the only document which can be used to cost the project is a functional program/OPS space requirement. No design brief is available at this time.

The total costs shown in the table below includes escalation.

PROJECT	FSP COST	WIP COST	SAVINGS	% SAVINGS
South facility	\$86.42 M	\$76.11 M	\$10.30 M	12%
Corporate services	\$82.83 M	\$57.87 M	\$24.96 M	30%
Court expansion	\$1.00 M	\$.89 M	\$.11 M	11%
Central patrol facility	\$35.15 M	\$33.33 M	\$1.82 M	5%
PDC Expansion	\$10.31 M	\$5.71 M	\$4.60 M	45%
Swansea part 1	\$5.02 M	\$2.38 M	\$2.63 M	52%
Swansea part 2	\$7.52 M	\$3.57 M	\$3.95 M	52%
Swansea part 3	\$6.41 M	\$3.15 M	\$3.26 M	51%
Elgin 2	\$1.63 M	\$1.95 M	-\$.33 M	-20%
Elgin 3	\$1.89 M	\$2.27 M	-\$.38 M	-20%
Elgin 4	\$.96 M	\$1.16 M	-\$.19 M	-20%
Elgin 5	\$5.32 M	\$6.39 M	-\$1.06 M	-20%
Total	\$244.46 M	\$194.79 M	\$49.67 M	20%

TABLE 01.3. Projected Cost Savings by Project

01.6.4 ENERGY COST SAVINGS

The table below shows the estimated energy cost savings that can be achieved by implementing the proposed building operations strategies.

Note that the calculations for operational energy cost savings are based on utility company consumption data for existing buildings and sustainable strategy best practices for proposed buildings.

The calculated operational energy cost savings are based on the selected Energy Conservation Bundle described in section 03.5 of the detailed WIP report. The ECM bundle assessed is representative only. Each building identified in this report will need to be assessed on a building-by- building basis to determine the most appropriate sustainability features to maximize operational energy cost savings based on specific site conditions including building orientation, building space use, floor plates, and space use configuration etc.

PROJECT	EXPECTED OCCUPANCY DATE	BUILDING AREA, SF	BUILDING ENERGY COST, \$/SF AVERAGE ₁	POTENTIAL ANNUAL ENERGY SAVINGS, % ₂	CURRENT AVERAGE	20 YEAR PROJECTION AVERAGE ₃
South facility	2020	175,000	\$2.69	33-65%	\$231,000	\$406,560
Corporate services	2024	140,000	\$2.69	33-65%	\$184,800	\$325,248
Central Patrol	2029	50,000	\$2.69	33-65%	\$66,000	\$116,160
PDC Expansion	2027	15,000	\$2.69	33-65%	\$19,800	\$34,848
Swansea (Part 1,2,and 3)	2014 2017 2029	10,000 15,000 10,000 (35,000 total)	\$2.69	33-65%	\$46,200	\$81,312

TABLE 01.4. Projected Energy Cost Savings by Project

Notes

1. Based on current OPS portfolio average energy cost/sf
2. Representative ECM bundle for the new facilities ("Bundle #1"): chilled beam HVAC with VFD's for all pumps and fans; LED lighting throughout; with Building Commissioning and Occupant Engagement Strategy
3. Assuming 20 year projection- 76% increase in energy costs - refer to detail

01.7 Additional Considerations

01.7.1 ADDITIONAL OPPORTUNITIES FOR SAVINGS

In addition to the recommendations previously presented, the WIP report identifies a number of opportunities that are not factored in the base analysis, but could be explored for further savings. These may require policy changes or more significant changes from OPS' current operations. They include:

- Re-evaluation of redundant and underused Facilities
- Campus Planning
- Increase sharing ratios and pilot more mobile work for Civilians
- Increase digitization of records to reduce storage footprint
- Consider accelerating project schedules to reduce impact of construction cost escalation
- Increase sharing of functions and spaces with other agencies

Redundancy Requirements and Utilization Rates

While most OPS workspaces are over crowded and there is a significant shortfall of space as identified in the FSP, there are opportunities to improve utilization rates and even reconsider some previous practices given affordability issues. The WIP analysis identified a number of spaces that may be under used or redundant and that could be reduced to achieve additional savings. In some cases a level of redundancy is required for business continuity, but there may be ways to reduce the amount of redundant space provided while ensuring functionality. Spaces that could offer additional savings include:

- Records Storage: potential to further reduce the overall footprint assigned to paper-based organizational records given pending digitization program
- Community board rooms: potential to eliminate from new projects and continue use of existing rooms
- Special project rooms: potential to build fewer rooms or use for multiple purposes to reduce overall space need
- Backup IT space: potential to provide function at a reduced square footage
- Backup Communications Center: potential to provide function at a reduced square footage

Campus Planning

In reviewing best practices with other agencies, there were many examples of police agencies reducing the cost of their facilities through planning multiple buildings on a single campus rather than distributing buildings geographically throughout the municipality. Campus planning allows for many services and spaces to be shared between buildings. This strategy can reduce capital costs by reducing the need to build redundant spaces, and reduce operating cost by sharing systems and services.

The WIP analysis found that the site identified for the South facility provides enough capacity for multiple users within the targeted acreage. There may be additional benefits to retaining the entire 15-acre parcel for long-term OPS uses in order to capitalize on future campus planning opportunities. Given the growing needs for OPS services, it may be short-sighted to focus solely on 10 acres within the overall site.

It would be beneficial for OPS to evaluate each of its sites for potential sharing with other users. This is relevant for both the FSP and the broader portfolio of OPS. This longer view on campus planning is in accordance with the best practices shared in the Best Practices Symposium hosted by OPS.

Increase Sharing Ratios and Digitization

The WIP report identifies specific levels of seat sharing ratios and storage reductions that can help OPS achieve its cost reduction targets. It should be understood that more aggressive implementation of these same strategies will lead to greater space savings. However, the base analysis only includes a level of implementation that OPS is ready for today, though further implementation may be possible in the future.

Accelerating Project Schedules

Projects planned far in the future experience a higher impact of construction escalation. Accelerating the schedule for some projects may reduce the projected cost by reducing this effect. However, it should be noted that opportunity costs and cash flow need to be evaluated before adjusting any schedules.

Sharing of Functions and Spaces

The sharing of functions and spaces with other agencies would present an opportunity for OPS to share the cost of its plan with others. Because no partners have yet been defined, this is not included in the base analysis, but may be a future opportunity.

01.8 Exclusions and Assumptions

01.8.1 EXCLUSIONS AND ASSUMPTIONS FOR SPACE ALLOCATION

The study is based on the following exclusions and assumptions:

Service Initiative / Information Technology Initiative Integration

All WIP recommendations assume that the Service Initiative and IM/IT Initiatives will be in support of the proposed changes. This assumption is made on the basis that the team has remained actively engaged with these two initiatives throughout the entire WIP effort.

The SI and IM/IT Initiatives are both developing strategies and recommendations far after the conclusion of this study. Should SI or IM/IT fundamentally change course and require a revisit to the FSP assumptions, these recommendations must be reconsidered. Some SI recommendations or outcomes may result in additional realignment projects that were not previously captured in the base FSP assumptions. Once SI is completed there should be a subsequent review of the impact on the FSP to determine that the savings targets are still valid and if the WIP recommendations will need to be revisited.

New ways of working rely on the implementation and deployment of the appropriate technology platforms and devices. The recommendations herein follow the IT Roadmap per direction from the IM/IT team. However, should the IM/IT plan significantly change wherein employees would not receive the necessary technologies to work remotely and/or work mobile onsite, these recommendations must be reconsidered. This is particularly critical for mobile work onsite and offsite.

Key to this effort is the assumed location of departments per the FSP as well the commitment to, and provisioning of, the technologies to support mobile work.

Occupant Engagement

Once buildings are occupied, it is recommended that occupant engagement plans be implemented. Occupant engagement is the opportunity to improve building user satisfaction while improving building performance. Occupant engagement programs educate building users about sustainable operations programs in their building and motivate users to help implement these programs. It is recommended the OPS continue to leverage and continually improve the established 'Think

Green' occupant engagement program for all proposed and existing facilities identified in this report.

Confirmation During Project Planning

The space allocation and savings estimates assume that the OPS will be ready to implement the WIP recommendations at the time of each project. The recommendations for each project will need to be confirmed at the project planning stage to verify that the OPS is prepared to implement the strategy.

AODA

The space calculations accommodate AODA requirements. Specific requirements are not shown as line items in the program calculations, but the circulation and grossing factors used are sufficient to account for these requirements.

01.8.2 EXCLUSIONS AND ASSUMPTIONS FOR COST SAVINGS ESTIMATES

Exclusions

The following costs are excluded from the cost estimate:

- IT infrastructure (such as T1 line)
- Specialty equipment
- Bad soil/site conditions
- Costs to install site services (gas, water, sanitary, sewage, hydro, etc.)
- Land acquisition costs
- The site for the Central Patrol facility has not been selected and is assumed to be outside the City's Central Business District (CBD), therefore additional costs to construction within the CBD have not been considered as part of the overall project costing.

Assumptions

- Cost estimates are based on an order of magnitude costing model and inherently have a degree of uncertainty, as many details of the projects have yet to be defined.
- The cost estimates include a 10% factor for construction and design contingency
- The cost estimates include an allowance for FF&E
- Escalation rates used in the cost estimates are the same percentages used in the original FSP for each project.

01.9 Change Management

The WIP has identified several key areas for notable change. In order to achieve the proposed results, OPS must invest in managing the transition as OPS staff adjust. The WIP report identifies a framework for change management that should be further developed as OPS approaches the upcoming projects. This framework is based on the five phases below, which should be developed inclusive of each project in the FSP.

- Phase 1 – Creating Understanding for Multiple Audiences: Shared understanding of OPS strategy, norms and how the new work environment will support OPS employees.
- Phase 2 – Creating Experiences: Help employees see themselves in the new work environment, aligned with OPS strategy and culture.
- Phase 3 – Creating Excitement: Orient employees to the specific features of their new work environments and begin move preparations.
- Phase 4 – Preparing for Change: Deliver logistics/instructions for efficient and effective move activities
- Phase 5 – Welcome and Sustain Interest: Minimize confusion and maximize the opportunity that WIP offers after move in.

Dedicated Resources

As the recommended changes are considerable, dedicated resources from HR, IT, Facilities, and Operations will be necessary to ensure success for the change management program. Developing a program will require an all-in approach wherein the Facilities team is a key stakeholder throughout the process.

Time Investment

In addition to creating a structured change management program and dedicating resources to support the initiative, OPS must invest time to institute behavioral changes. Change management does not end when OPS occupies the first new building. It is an ongoing process to enable OPS personnel to build new habits and capabilities. OPS should assume at least one year to support the change process following the move.

Alignment with Other Initiatives

Managing workplace and facilities changes cannot be done in isolation from other initiatives. The change management program associated with the WIP recommendation must take into account other changes happening throughout OPS and align with other initiatives that OPS will undertake over time.

01.10 Conclusion

01.10.1 BUSINESS CASE

It is concluded that **OPS will fall short of the 25% reduction to the overall cost of the FSP** if all of the baseline recommended strategies are implemented without the additional more aggressive opportunities.

The cumulative reduction will be unevenly distributed across projects, resulting from savings of greater than 25% on some projects and lower, or none, on others.

In order to achieve the target, the additional opportunities identified in this report should be considered for implementation. While many will require policy discussions in order to implement and may be reliant on new technology solutions, these represent significant savings, demonstrate good stewardship of public funds, and will enable OPS to achieve its cost target.

01.10.2 ONGOING ANALYSIS AND CHANGE

Ongoing Analysis

While OPS has been visionary in its approach to its FSP, change is ongoing as the Service Initiative and IM/IT Initiative continue to explore opportunities to improve the delivery of policing in Ottawa communities. As this project is both entering a milestone phase with this report while simultaneously continuing to evaluate and refine its existing procedures, it is important to remember that this should be considered a living document, a resource that captures a set of opportunities in time but a resource that necessarily needs to be revisited once the Service and IM/IT initiatives complete their targeted assignments.

There are a variety of ways to meet the proposed cost reduction. However, each strategy is contingent upon another, and that there is a degree of risk in projecting results before the service has settled on a direction for each initiative. Risks stem from willingness for OPS to accept the necessary policy or procedural changes, or the willingness or ability to invest as required to take advantage of these workplace advances. OPS should consider a range of secondary options, identified herein as Additional Opportunities, to both fortify its financial position with regards to cost reductions and more broadly to demonstrate good stewardship of public tax dollars.

It should also be noted that there are many recommendations herein that require additional study in order to understand the full impact and realize the full benefit. Policy changes

associated with the proposed space allocation strategies must be reviewed and confirmed. Building design and construction recommendations require further consultation with the City of Ottawa and REPDO to verify the impact of the proposed construction methodologies within the public environment.

Ongoing Change

Change is ongoing, both for OPS operations and for Ottawa construction more generally. Construction methodologies and techniques will continue to improve and provide options for project execution. Annual reviews of constructability should be built into the FSP approach.

New ways of working will become more commonplace, even expected, as the pervasiveness of technologies break down physical barriers to work.

Adoption of the IT Roadmap and its accompanying procedural and behavioral shifts should be monitored as part of the FSP.

Progress on digitization of organizational records will continue to advance and as such may result in reductions in demand for records storage. The FSP should monitor this ongoing effort as Record Storage space represents a significant cost to OPS.

These and other ongoing changes with OPS will have direct implications to the proposed approach to the FSP. In order to both maintain awareness and situate OPS to take advantage of these evolutions over time, the team recommends that OPS create at least an annual review, if not biannual review, process to gauge status on the execution of the FSP against these evolving procedures.

It should also be noted that any future changes in OPS delivery and levels of threat may impact the savings opportunities identified in this report. If future threat levels require new security measures (e.g. increased facility hardening), it could have a significant effect on construction costs.

01.10.3 ALIGNMENT WITH SERVICE INITIATIVE

Some recommendations or outcomes from the Service Initiative may result in additional realignment projects that were not previously captured in the base FSP assumptions. Once SI is completed there should be a subsequent review of the impact on the FSP to determine that the savings targets are still valid and if the WIP recommendations will need to be revisited.