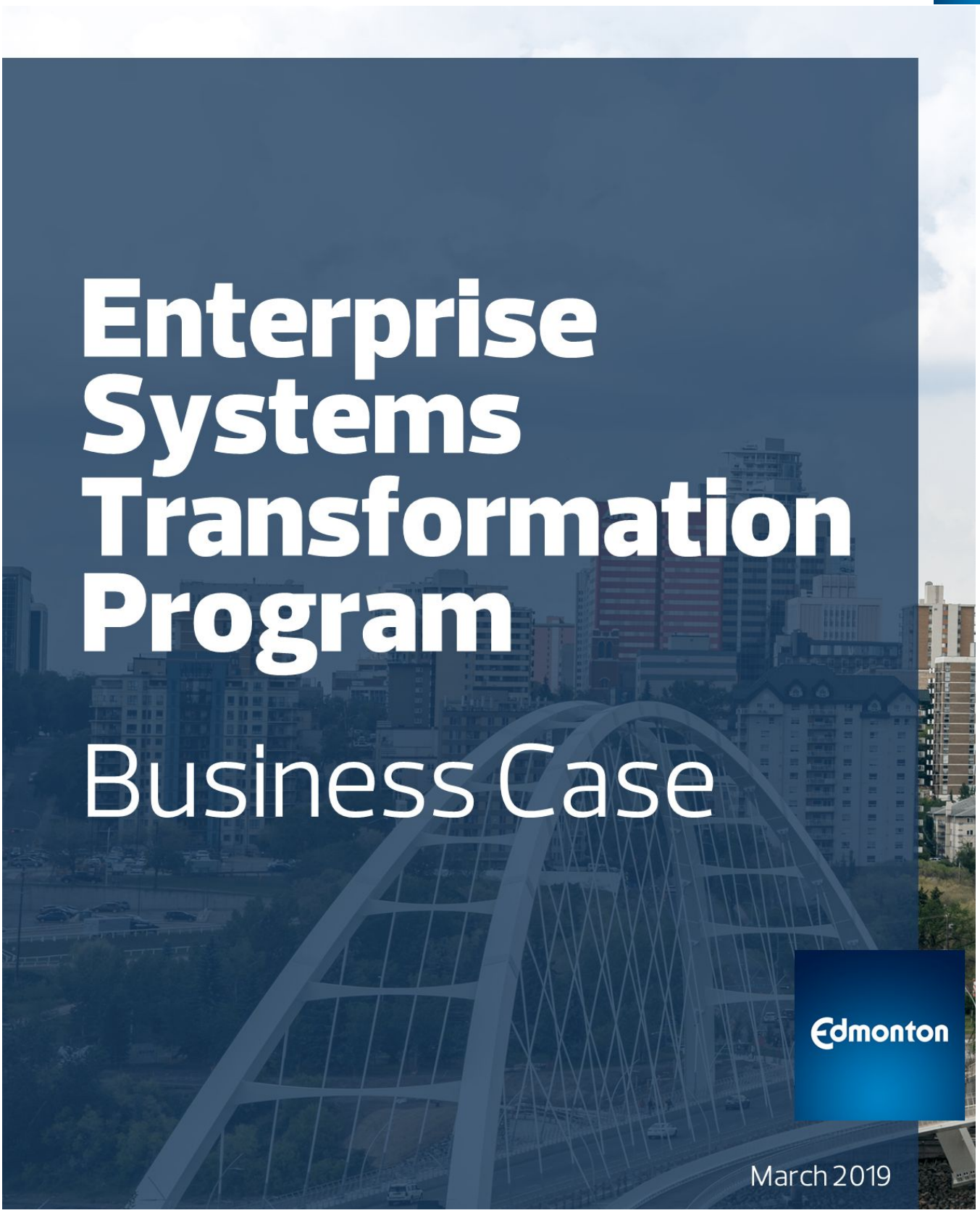
Enterprise Systems Transformation Program
Business Case
Edmonton
March 2019

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1 Executive Summary

The City of Edmonton (City) is a $3 billion corporation serving nearly one million residents, with 73 programs and services. We keep people safe. We keep people moving. We make Edmonton a great place to live, work and play. As the City of Edmonton continues to experience rapid, multi-faceted change as a result of the larger social, economic, political and technical influences in our environment, we are tasked with providing an increasing array of services in a more open, adaptable, responsive and fiscally responsible way. [1]

However, the City's ability to deliver on ***Council's Vision 2050*** and to efficiently meet the evolving needs of Edmontonians is significantly impacted by its aged and disconnected enterprise technology systems. These systems and associated processes were first designed and implemented in the 1990s to support the City's core functions (mainly Finance, Human Resources, and Corporate Procurement & Supply Services (CPSS)). At this time, organizations customized software to meet current business processes instead of adapting processes to meet the software's workflow.

Since the 1990s, enterprise systems have evolved. In particular, cloud technology has led many organizations to adopt leading practice and adapt processes to standardize business processes, thereby making software upgrades much less complex and mitigating overall organizational risk.

As the City has grown and the services it delivers have evolved, new business requirements have been addressed by adding additional software and increasing customization within the aging technology, leading to an increasingly complex technology environment that is not agile or adaptable to the changing needs of the organization.

In order to deliver on the increasingly complex and evolving needs of the City, it is crucial that this work realize numerous qualitative benefits that will transform our corporate financial, human resources and supply chain processes to enable the Council's Vision 2050, as outlined below:

[1] This is Who We Are

Additional qualitative benefits that the City can realize through this Enterprise Systems Transformation Program (ESTP) include:

- **Increased Opportunities for Innovation** - By digitizing core technology functions the City can take advantage of disruptive technology innovations such as Robotics and Blockchain;
- **Automated Service Delivery for Citizens** - An integrated core enterprise system will enable the City to further digitize citizen service and communications channels;
- **Enhanced Capabilities in Information Management** - ESTP will improve information management and enhance data and analytic capabilities;
- **Increased Data Transparency and Real-Time Visibility** - Accurate, real-time data and analytics will enable informed, actionable decision making by City leadership;
- **Improved Operational Efficiencies** - Significant operational efficiencies can be achieved through process standardization and access to accurate, real-time transactional data;
- **Enhanced Scenario Analysis and Forecasting** - An integrated enterprise system will enhance planning and analysis across departments by improving the ability to predict outcomes through real time scenario analysis and embedded predictive forecasting tools;
- **Integrated Data Reconciliation & Report Generation** - Integrated data management will simplify the City's data landscape, significantly cutting down reconciliation and report generation overhead;
- **Improved Oversight of Internal Controls** - Implementing best practice mechanisms, rules and procedures to promote accountability, ensure the integrity of information, and improve operational efficiency;
- **Enhanced Fraud Prevention & Detection** - Improving consistency, control and traceability by identifying patterns that indicate fraud or other concerns;
- **Improved Segregation of Duties (SoD)** - Implementing a single, integrated system with a defined SOD model will improve the City's ability to exclude potential violations and conflicts across systems and processes; and
- **Increased Data Security Controls** - Cloud, integrated ERP solution designs include robust security controls to protect employee and citizen data.

The following constraints require the City to modernize the current processes and technology:

- Meeting citizen demands for increased digital engagement, multi-channel service delivery, transparency, data openness, and a smart city cannot be effectively achieved using our current systems;
- Increasing risks of cyber-attacks increase the imperative to transition sensitive citizen and employee data from fragile, inconsistently controlled platforms into robust, secure systems; and
- Some of the software currently used by the City is no longer supported by the vendor; for example, SAP Business Suite will no longer be supported by 2025. Therefore, it is not a matter of 'if', but 'when' and 'how' the move to a sustainable technology platform will take place. These critical issues are becoming progressively impactful, and the City is exposed to reputational risks if these issues cannot be mitigated effectively.

To arrive at a recommendation for addressing the issues outlined in this business case, the following options were thoroughly evaluated:

- **Option 1 - Status Quo:** The City continues with 'business as usual' approach and maintains disparate core Enterprise Resource Planning(ERP) applications;
- **Option 2 - Core Homogeneous ERP:** The City implements a single modernized ERP solution that spans across the City's core enterprise functions;

- **Option 3 - SAP Cloud First:** The City implements a single modernized SAP Cloud ERP solution that spans across the City's core enterprise functions; and
- **Option 4 - Best of Breed:** The City implements 'best of breed' ERP solutions for each of the City's core enterprise functions.

Based on findings from the assessment of the four above described options in conjunction with strategic, financial and risk factors, the business case makes the following three recommendations:

- **Transforming the City's Core ERP Functions:**
  The business case recommends Option 2 - The Selection and Implementation of a Core Homogeneous Cloud ERP Solution that spans the City's core functions such as Finance, HR, and CPSS, while standardizing processes based on technology and industry standards.

  Implementing a single, core homogeneous ERP will result in the lowest Total Cost of Ownership (TCO) over ten years (TCO - $296.6M), when compared to the costs of maintaining status quo (TCO - $314.6M) and to the costs of implementing a best of breed solution (TCO - $310.6M).

- **Transforming the City's Enterprise Asset Management Functions:**
  As core functions move towards a single core homogeneous ERP, other functions within the City (such as Real Estate, Fleet Services and Facility Management) have an opportunity to rationalize the City's Asset Management technology landscape utilizing the selected core homogenous ERP. Administration recommends undertaking a detailed assessment to identify these rationalization opportunities.

- **Transforming the City's Workflow Management:**
  There is a need to rationalize the processes and technologies in business functions that utilize POSSE as an enterprise delivery and workflow management system to streamline processes and lower the costs of managing the platform. The business case recommends performing a detailed assessment and rationalization of the City's POSSE platform.

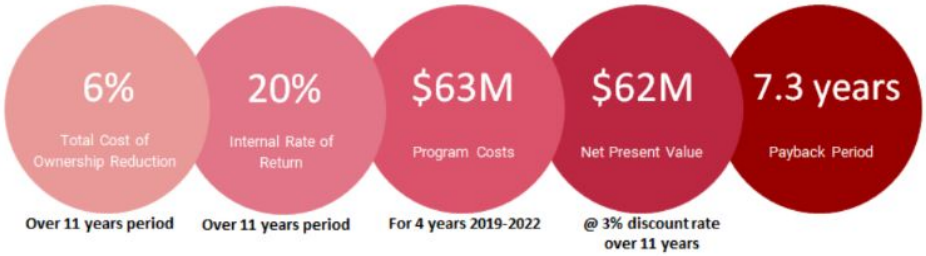
As preparation for the program continues, the City will continue to further investigate Option 3 - SAP Cloud First due to the following factors:

- Reduced Risk Profile and Solution Complexity;
  - reduced technology integration risk by integrating new SAP products to the City's existing SAP platforms (such as inherent, out-of-the-box integrations with the Ariba platform that the City is implementing)
  - existing City resource expertise with SAP, both on the business and technology fronts
  - extensive market expertise and tools developed for transformations from legacy to modern, cloud based SAP platforms
- Lowest Total Cost of Ownership - Option 3 - SAP Cloud First has the lowest overall total cost of ownership out of all four options; and
- Shortest Time to Value[2] - Option 3 - SAP Cloud First has the shortest time to value out of all four options due to the shorter upfront procurement cycle.

[2] Time to Value (TTV) is the amount of time it takes to realize value from an investment

With a conservative costs and benefits analysis, the overall Enterprise Systems Transformation Program (ESTP) transformation recommended by this business case is based on a financial return to the City that includes a 6 percent reduction in Total Cost of Ownership (TCO) , a 20 percent Internal Rate of Return (IRR) , 74.5 percent Return on Investment (RoI) , and a Net Present Value (NPV) of $62.2M (for a conservative sensitivity scenario).

To properly implement a modernized suite of enterprise systems, it is estimated that the costs for ESTP program implementation are $62.7M over the next four years and a cumulative total of $119.8M over a period of 11 years including implementation and sustainment[3]. The payback period is estimated to be 7.3 years. The program will deliver total net benefits of $89.2M, including benefits from process efficiency ($71.7M) and total cost of ownership reduction of $17.5M (6 percent) resulting from reduced technology ownership costs through lowered licensing, maintenance and support costs.



The summary of costs and benefits for the period from 2019-2029 can be found below:

Value Summary												
Year	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**Total**
Program Benefits	$0.0M	$0.0M	$0.6M	$3.6M	$14.1M	$25.8M	$30.2M	$33.0M	$33.1M	$34.7M	$34.0M	**$209.1M**
Harvestable Benefits	$0.0M	$0.0M	$0.6M	$2.2M	$8.3M	$14.1M	$13.7M	$13.3M	$12.1M	$12.9M	$11.4M	$88.5M
Non-Harvestable Benefits	$0.0M	$0.0M	$0.0M	$1.5M	$5.8M	$11.8M	$16.5M	$19.7M	$21.0M	$21.8M	$22.6M	$120.5M
Program Costs	$2.6M	$7.1M	$27.8M	$25.2M	$5.4M	$5.5M	$8.7M	$8.9M	$9.3M	$9.5M	$9.7M	**$119.8M**
Net Benefits	**-$2.6M**	**-$7.1M**	**-$27.2M**	**-$21.6M**	**$8.7M**	**$20.3M**	**$21.4M**	**$24.1M**	**$23.8M**	**$25.1M**	**$24.2M**	**$89.2M**

Administration recommends that the ESTP program be approved and initiated without delay. This will prevent the City from making further redundant or siloed technology investments in near end-of-life platforms, technologies or processes that need to be replaced, thereby reducing the risk of lost or stranded technology investments. Once the program is approved, next steps will be to commence the technology procurement cycle, followed by a three-year program that includes technology implementation and process standardization initiatives. Delays due to long procurement cycles will impact the roadmap timelines, program costs and benefits. Once the implementation and rollouts are completed, Administration will use a benefits realization framework to validate benefits on an annual basis.

[3] Sustainment costs include costs for software licensing and vendor support, ERP internal support center, future enhancement projects, and ongoing personnel training.

2 Background

2.1 Strategic Context

The City is embarking on its journey to transform technology and processes. It has set a vision for technology as an enabler of a more nimble, transparent government that responds to the needs of its citizens and employees. The CIty is pursuing multiple programs such as Data Governance, Corporate Security, and the Enterprise Systems Transformation Program (ESTP) in support of the Business Technology Strategy (BTS) and to better utilize its digital tools and drive value and efficiencies for citizens and businesses.

The ESTP Business Case identifies key system and process transformation initiatives to drive value for citizens and businesses. It also identifies and assesses key ERP transformation options along with recommendations tied to cost and benefit evaluations. The recommended roadmap establishes the foundation to achieve the City's goals of providing open and transparent government to citizens by standardizing processes and modernizing currently disparate systems while supporting data governance and corporate security initiatives. This roadmap will allow the City to deliver on Council's Vision 2050 and on following strategic priorities as identified in BTS and Council's Vision 2050:

- Enhance citizen centricity of its services.
- Digitize government management and operations.
- Enable City of Edmonton to become a smarter city.
- Deliver data-driven governance for citizens and employees.

This business case considers public sector, municipality and technology leading practices in providing up-to-date, dependable insights to inform the decision to invest in a modern, standardized and cloud based technology environment.

2.2 Trends and Jurisdictional Scan

Trends across citizen expectations, technology advancements and government regulations are changing the way public sector organizations manage their services and operate to deliver value for citizens and employees. Key trends relevant to this business case are highlighted below and have been used to inform ESTP's recommended initiatives.

2.2.1 Citizen and business centric services

Aligning services, decisions and policies with the citizen's point of view is critical for any public sector organization's success. This imperative applies to citizen-facing departments and enterprise-level core branches that provide the foundational data that inform citizen service delivery and corporate decision making.

Many governments today have the tools to simplify complicated processes for citizens and can provide digital capabilities to deliver personalized, self-managed, and insightful online services to citizens and businesses.

For instance, there are many examples of citizen service automation, from e-signatures, web payment of fees and taxes, digital permits and licensing services, as well as digital justice and case enforcement. In order to effectively deliver such services, the City needs to transition to a modern technology platform that enables the incorporation of more digital micro services.

2.2.2 Digital government management and operations

As costs for managing legacy systems interwoven with complex processes become unsustainable and impede growth, governments are examining ways to become more efficient and optimize their operating costs while enhancing the citizen experience through digitization. This can be attained by interconnecting all aspects of the value chain in real time via integrated core systems. This approach allows decision makers and employees to see the complete picture at any point in time instead of glimpses into isolated data points within specific systems or organizational units. By implementing tightly integrated systems to support core City functions, City leaders and employees will have access to insights that position them to identify, predict, and address issues to improve the effectiveness and efficiency for all involved.

2.2.3 Becoming a Smart City

A smart, sustainable city uses innovative and industry leading technologies to improve quality of life, efficiency of urban operations and services, and competitiveness, while ensuring that it meets the economic, social and environmental needs of present and future generations. All orders of government are seeking opportunities to improve efficiencies, enhance citizen experience and optimize costs through becoming smarter. Innovative technologies such as smart systems, predictive analytics, blockchain, cloud computing, artificial intelligence, and Information Technology (IT) - Operations Technology (OT) integrations are being used to optimize core operations, transportation, infrastructure, sustainability, citizen empowerment, safety, and livability. These technologies enable the vision of becoming a Smart City. Some examples are:

- IT-OT integration for fleet optimization and fuel management solutions;
- Sensors to monitor asset utilization and health, and predict maintenance needs;
- Real-time analytics to inform policy and decision making;
- Predictive modeling and simulation to help keep citizens safe through real-time situational awareness; and
- Adoption of cloud platforms to support scalability and adopt to changing citizen needs.

ESTP program and roadmap will enable the City to become a smarter City by setting up technology, business process, security and data foundations.

2.2.4 Data-driven governance

In an effort to resolve policy issues and enhance citizen services through real-time analytics and intelligence, public sector organizations are moving towards consolidating data sources, identifying sources of truth and eliminating data and functional silos. Governments in numerous countries, such as Australia and New Zealand, are moving towards data-driven digital government by consolidating operational data within their ERPs.

2.2.5 Emphasis on Data Security is Critical

Governments collect and track critical citizen data, and the volume of this information will only grow in the future. In light of the increased risk of cyber-attack incidents, it is critical to protect data, increase transparency about cybersecurity measures, and reassure citizens that their data is secure to build trust and encourage continued citizen engagement.

It is critical that organizations manage this data effectively within robust, modern enterprise systems, and that this data is governed by appropriate lifecycle management policies.

2.2.6 Disruptive Technology Trends

Public sector organizations are transitioning to standardized, tightly integrated, cloud-based Enterprise Systems as the platforms to support their operations. The following technology trends driving such transformations are central to the value of these platforms and provide important context for this business case:

- Significant reduction in technology customizations supporting those processes to increase organizational change resilience, with some functionality trade-offs;
- Technology Integration layers (integration software) embedded within a holistic technology architecture facilitate better ongoing collaboration between modular and standard technology needs of organizations;
- Increased agility in the deployment of technology with growth of cloud models; and
- Increased access to growing sets of organizational and operational data to enable predictive analytics and data driven decision making, and to effectively support Artificial Intelligence (AI).

Modern day ERPs support the direction set by these trends for any public sector organization.
Administration conducted a jurisdictional scan on the direction of public sector organizations in Canada and the US to support this business case. The details of this jurisdictional scan can be found in Appendix A – Jurisdictional Scan.

2.3 Current State Organizational Capability Model

Administration developed a high-level map identifying the systems and applications currently supporting enterprise capabilities at the City of Edmonton .. Key observations from this analysis are:

- Core enterprise functions at the City are supported by a large number of systems. This has resulted in increased technical and functional complexity and limited systems integration across functions; and
- Numerous business functions and capabilities within the City are being supported by multiple, concurrent systems, as indicated by the color legend in Figure 1. This has significant impacts on data integrity and transparency, and on the consistency of processes.

Based on the above observations, this business case proposes a recommended future state and roadmap to guide the City's transition to a simplified, integrated and standardized technology ecosystem.

Capabilities shown in white in Figure 1 are not currently supported by any of the core enterprise systems or major feeder applications.

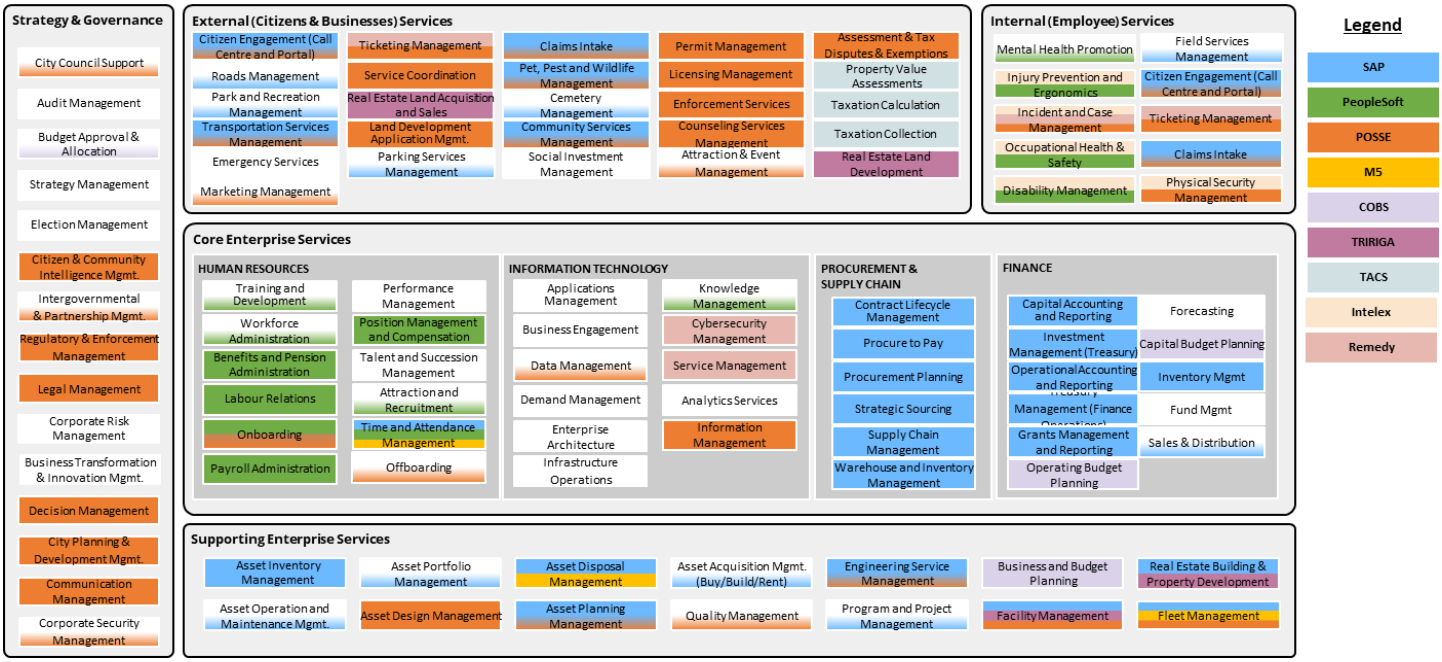


Figure 1: Current state capability map with technology overlay

3 Business Case Approach

The approach used to develop this business case focused on three primary goals: first, understanding the future vision of the City, its employees and citizens; next, understanding current state from a macro lens; and finally, assessing findings against technology trends across public sector organizations.

This business case approach brought together branches from across the City to discuss a comprehensive view of the future vision of enterprise systems at the City. These discussions were followed by an analysis of future state options from high level architectural, financial, logistical, organizational readiness and functional requirements perspectives.

The business case was developed in three phases: the assessment phase, the design and build phase, and the review and present phase. Figure 2 provides an overview of this approach:

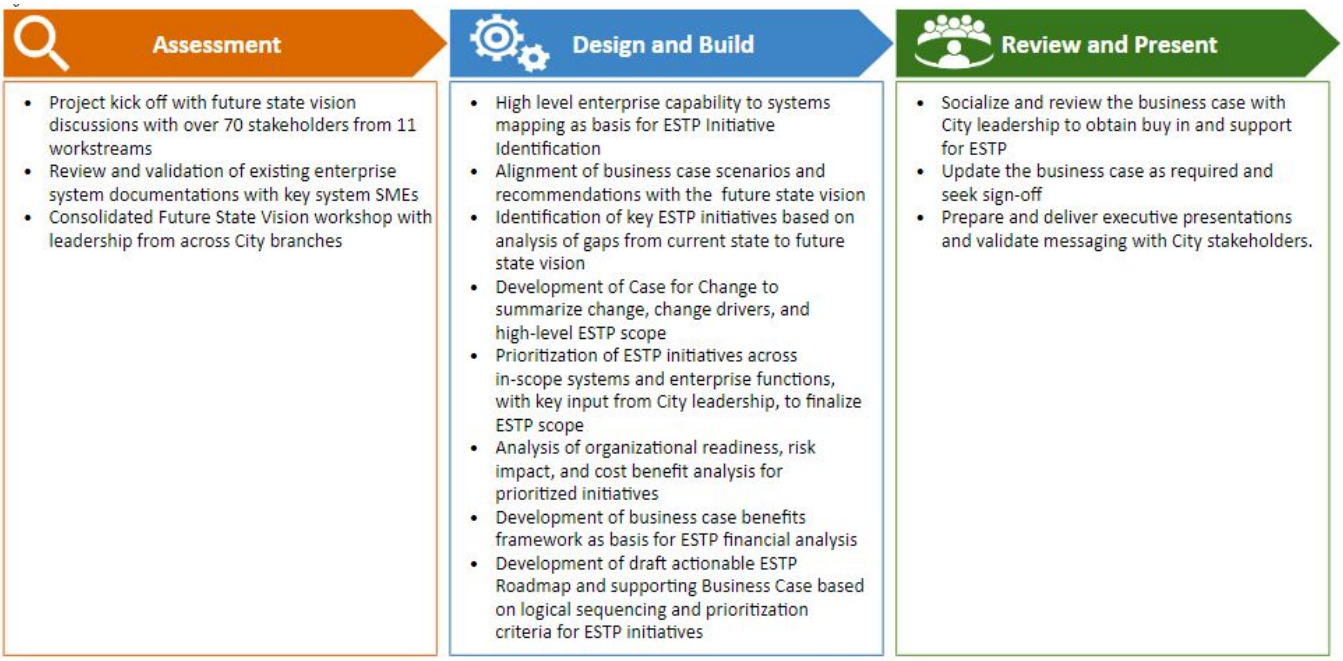


Figure 2: ESTP business case approach

4 Case for Change

In addition to multiple internal and external factors influencing the City to transform its processes and technology, there are significant opportunities that can be realized through the ESTP program. Once realized, these opportunities bring the City closer to implementing its Business Technology Strategy.

4.1 Opportunities for transformative change

This assessment has identified opportunities to realize benefits by implementing an enterprise systems transformation at the City. These opportunities are based on internal and external factors that strengthen the case for transformative change.

Internal factors include:

- Low level of process standardization;
- Weak cross-functional collaboration;
- Legacy technology landscape with disparate, disjointed and out-of-support systems;
- Data integrity issues across systems;
- Process governance concerns; and
- Low employee satisfaction with technology used to support business functions.

External factors include:

- Citizen expectations for cost efficient delivery of services and processes;
- Increased citizen expectations for transparency and open data;
- Need to secure citizen and employee data against cyber threats;
- Rapidly changing regulatory environment;
- Evolution of enterprise systems providing industry best practices out of the box for business processes;
- Increased expectations to move towards a digitized, multi-channel service delivery model; and
- Enhanced citizen engagement through innovative technologies such as Artificial Intelligence (AI).

The table below summarizes ESTP opportunities based on the internal and external factors described above, their mapping to the internal drivers of change identified in the City's Business Technology Strategy, and descriptions of the opportunities and benefits that can be realized from each of those opportunities.

ESTP Opportunity	City's Drivers of Change (based on BTS)	Description of Opportunity and Resulting Benefits
Enhanced citizen experience through cross-functional collaboration	Organizational Efficiency	The City can encourage cross-functional collaboration among branches through defined process and system governance. Cross-functional collaboration among branches will reduce process inefficiencies and enhance citizens' experience with the City services (better collaboration will reduce response time, and reduce errors in service delivery). This will encourage collaborative decision making, reduce technology redundancy across branches and focus investments.

ESTP Opportunity	City's Drivers of Change (based on BTS)	Description of Opportunity and Resulting Benefits
Process standardization and optimization opportunities	Transparent Processes	The City has the opportunity to optimize and standardize its business processes in alignment with industry standards that are driven by technology transformation. Standardized processes allow for higher levels of transparency and encourage greater integration among branches. This is aligned with Council's Vision 2050 of providing a transparent government.
Improved Oversight of Internal Controls	Organizational Efficiency	The City has an opportunity to implement standard mechanisms, rules and workflows to enhance internal controls, enforce consistency and promote accountability across the corporation. Implementing a single, integrated system with a defined SOD model will improve the City's ability to exclude potential violations and conflicts across systems and processes, and will allow the use of fraud prevention and detection tools.
Standardized and defined project governance	Organizational Efficiency	The City has an opportunity to define project management and governance standards to support and encourage standardization of project delivery and reporting processes. This will improve leadership reporting and enhance transparency in tracking project delivery, thereby increasing efficiency in project spending.
Efficient processes through automation	Organizational Efficiency	The City can increase process automation by using innovative technologies that reduce redundant activities. Process automation will increase employee efficiency and reduce time spent on unnecessary manual work. Process standardization sets the foundation for process automation through technologies including Robotics Process Automation (RPA) and Artificial Intelligence (AI).
Managed enterprise systems portfolio	Focused Investments	The City has an opportunity to consolidate and rationalize its currently disparate enterprise systems portfolio through a defined and integrated vision of its ERPs. This will improve the management and support of its entire application landscape and reduce the costs for system management and keep its enterprise systems portfolio aligned with business needs. It will also keep the City's technology investments in line with its BTS vision of having an integrated, corporate-wide approach towards technology investments and decision making.
Informed decision making	Informed Leadership	Improved data management and governance across systems and processes will provide accurate and timely information to the City's leadership and allow for informed decision making. The City's data currently resides across multiple enterprise systems with minimal data governance and lifecycle management, resulting in limited and untimely access to corporate-wide data for leadership and staff. For instance, different organizational structures reside on SAP and PeopleSoft, often requiring manual effort to consolidate data. Improved governance and lifecycle management initiatives will support gathering of intelligent business insights through business intelligence and advanced analytics, allowing Council to better project the City's future growth trajectory. Governance and lifecycle management will also empower City leadership to effectively invest in the City's future initiatives and negotiate better collective bargaining terms for its employees.
Safe citizen and employee data	Citizen Experience Expectations	As the City increases transparency across its processes, higher volumes of data will be available to citizens and businesses across multiple platforms (web and mobile). As this data becomes available, increased risks of cyber-attacks could expose the City to a variety of data breaches as well as legal and reputational risks. The new systems transformation will need to ensure that security policies and regulations for data governance are supported. Modern day enterprise systems support the majority of security and regulatory needs around data management, thereby complying with the security needs related to citizen and employee data.

ESTP Opportunity	City's Drivers of Change (based on BTS)	Description of Opportunity and Resulting Benefits
Tracking to budgets	Economic Development and Growth	Increasing efficiencies across people, processes and technology at the corporation is a significant area of focus for the CIty. Aligning processes with industry best practices and standards while managing data integrity across systems will allow the City to track and compare actual spending to the budget in real time, and to optimize operational spending. The proper tracking of actual to planned investments on the budget will enhance the quality of information available to the leadership and encourage informed decision making.
Cloud-based delivery models	Environmental Stewardship	Cloud-based delivery models are being increasingly leveraged by businesses and governments for their enterprise systems-based services. The City has the opportunity to leverage the cloud delivery model to realize the following benefits: ● Ability to scale on demand as citizen and business needs change. ● Better stewardship of funds from tax payers by reducing the cost of technology support over time. ● Shift from capital costs to operational costs through cloud delivery. ● Improved alignment with mobile strategy.
Digital citizens and workforce mobility	Citizen Experience Expectations	Process standardization and modern enterprise systems can support the objectives of setting up optimal data governance for the City. This will enhance data integrity and provide a foundation for service delivery through digital platforms such as web and mobile. In addition, process standardization and modern enterprise systems support the vision to provide a consistent experience to citizens and optimize and monitor service delivery costs across platforms.
Alignment with regulatory needs	Environmental Stewardship	As the City grows and citizen needs evolve, regulatory changes will require the City to be agile in its processes and operations to align with the changing regulatory environment (e.g. changes in building code regulations or changes to Collective Bargaining Agreements (CBAs)). The City has the opportunity to achieve a higher level of agility by setting up process controls and governance, and standardizing processes using technology.

4.2 Why Now?

These opportunities provide a rationale to undertake an enterprise systems transformation. In addition to these strategic drivers described in the previous section, some of the City's enterprise systems are nearing end of life and others are demonstrating significant sustainment costs, as described below.

4.2.1 Systems nearing end of lifecycle

Certain enterprise systems at the City are approaching the end of their functional lifecycle and need to be upgraded or replaced in the near term. Even if the City decides to stay with Status Quo, these systems require investments in upgrades or replacement, and the City will not realize the benefits of implementing a consolidated enterprise system. The table below provides details on the systems nearing end of life.

System	End of Vendor Support	End of 3rd Party Support	Implications

SAP Business Suite	2025	N/A	• As the SAP Business Suite ceases to be supported by SAP, an SAP S/4HANA upgrade will be required for the multiple modules of SAP being used at the City by Finance, Asset Management, Real Estate, Facilities Management and Corporate Procurement and Supply Services branches, before 2025. This will necessitate investment into a significant upgrade by 2024.
			• At that point, if the City chooses to stay on legacy SAP, it will likely face the following concerns:
			  ○ Run unsupported systems or,
			  ○ Purchase a cost prohibitive maintenance agreement
			• Alternatively, if the City chooses to proceed with the upgrade, an automated and clear migration path from the current SAP version to S/4HANA does not exist due to different functional architectures for certain processes. As a result, a green-field implementation (that is, implementing a new system rather than upgrading the existing systems) with data migration may become the only option.

PeopleSoft	2017	2025	• PeopleSoft upgrade will be required prior to 2025, thereby reducing the payback period for investments being made in the current system today. • Upgrade to cloud may necessitate standardization of some processes, including administration of payroll, pension and benefits, in line with the City's multiple collective bargaining agreements. • The PeopleSoft version currently utilized at the City went out of vendor (Oracle) support in 2017. Since then, the City's PeopleSoft version is on freeze (will not receive further upgrades) and is being supported by a third party. This state imposes increased risks to the City and is not sustainable in the long run. The most critical risks are specifically related to the inability to upgrade Peoplesoft to keep up with technical advancements and business demands.

4.2.2 Rising Total Cost of Ownership

Sustaining customized and legacy enterprise systems at the City and maintaining integrations between these and tertiary systems is increasing the Total Cost of Ownership (TCO) for the City. There is an immediate need to rationalize these systems to minimize cost overheads related to duplication of system functionalities, complex system integrations and the associated infrastructure and personnel costs.

Administration has forecasted the future Total Cost of Ownership for each of the City's enterprise systems (SAP, PeopleSoft, and POSSE) based on trends in historical spending on these systems and has concluded that costs will rise significantly in the future due to the following factors:

- Increasing architectural complexity due to multiple ad-hoc and point integrations. In other words, the complexity of the City's enterprise system landscape with continue to increase with the pressing need to connect disparate systems using inconsistent methods;
- Increase in costs to sustain systems that are nearing end of life such as PeopleSoft and the Learning Management System(LMS);
- Increasing costs to manage and further customize systems to meet business needs due to non-standard processes; and

- Costs of necessary upgrades to SAP and PeopleSoft due to the end of vendor support for the versions being used at the City of Edmonton.

5 Scope Definition of ESTP

ESTP is a holistic and integrated approach to developing a modern enterprise technology platform that will support the City in providing complex, citizen-focused services. To this end, the business case promotes the following foundational concepts:

- **Simplify** how the City works;
- **Radically standardize** systems and align processes accordingly;
- Set target state to reflect **industry leading practices** for all dimensions of this transformation; and
- Focus on solutions with **minimal customization** to reduce the costs of upgrading, maintaining and supporting enterprise systems.

5.1 Key Considerations for ESTP

The City's leadership identified key the following considerations to inform the business case roadmap and initiatives:

Figure 4: Key considerations for the ESTP program

5.2 ESTP Scope

ESTP capabilities will be addressed in the program's roadmap initiatives through the procurement, configuration and roll out phases of a core homogeneous ERP. The majority of these capabilities are currently supported by SAP, PeopleSoft, POSSE, and tertiary integrated systems such as Visier, Taleo, Cority, Intelex, M5 and Tririga.

Figure 5 below shows core capabilities and business functions that are in-scope for the ESTP transformation. **In-scope** capabilities will be directly addressed by the core ERP modernization initiatives. **To be assessed** capabilities, such as Enterprise Asset Management (EAM) and POSSE, need further assessment in order to be consolidated into the application landscape.

Out of scope capabilities and functions, such as Customer Relationship Management (CRM), Enterprise Information Management (EIM), Cybersecurity, etc, will not be included in ESTP's roadmap.

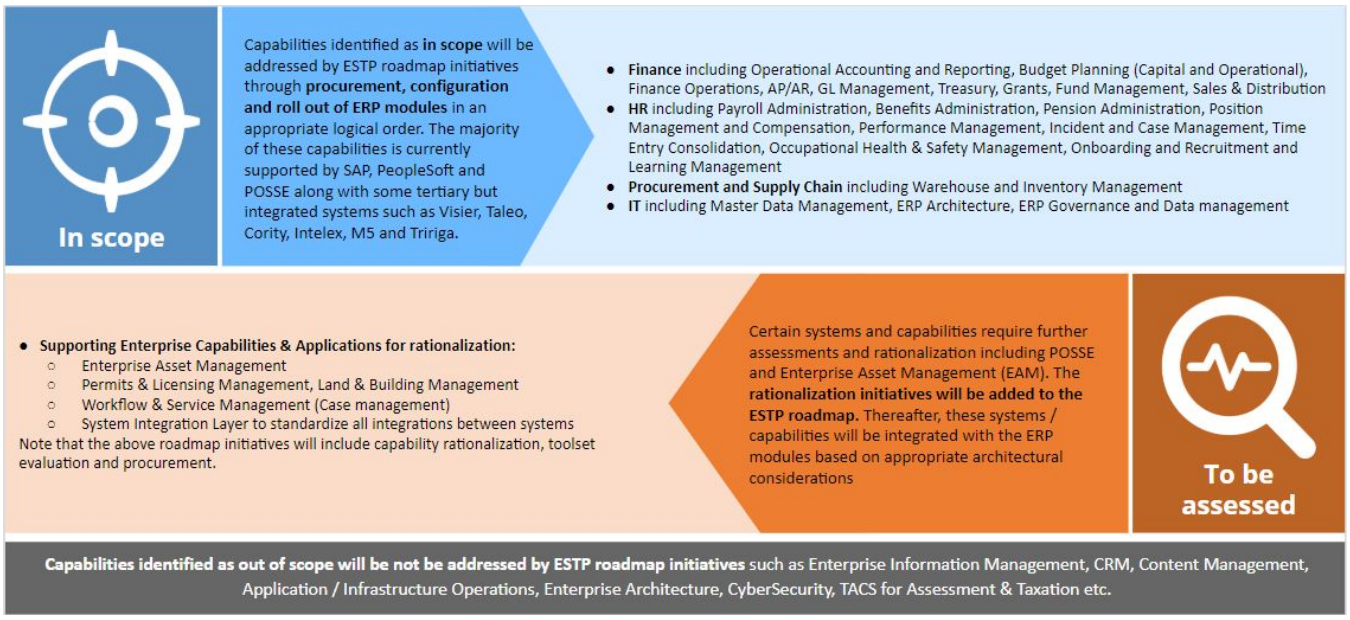


Figure 5: ESTP Program Scope

5.2.1 ESTP Scope Definition by Functional Capabilities

As part of the business case assessment, Administration developed a capability model for all Branches to define the scope of the ESTP:

- Capabilities highlighted as in-scope will be delivered through Core ESTP initiatives;
- Capabilities highlighted in orange are the capabilities that will require further assessment to identify their current technology landscape fit and the best means of integration in to the new architecture. These include:
    - Enterprise Workflow Management system (workflows currently in POSSE that are truly enterprise workflows);
    - POSSE Permits and Licensing (for land and building management workflows); and
    - Enterprise Asset Management (EAM) to rationalize asset management applications at the City.
- Capabilities that are not highlighted will not be included in the scope for the program.

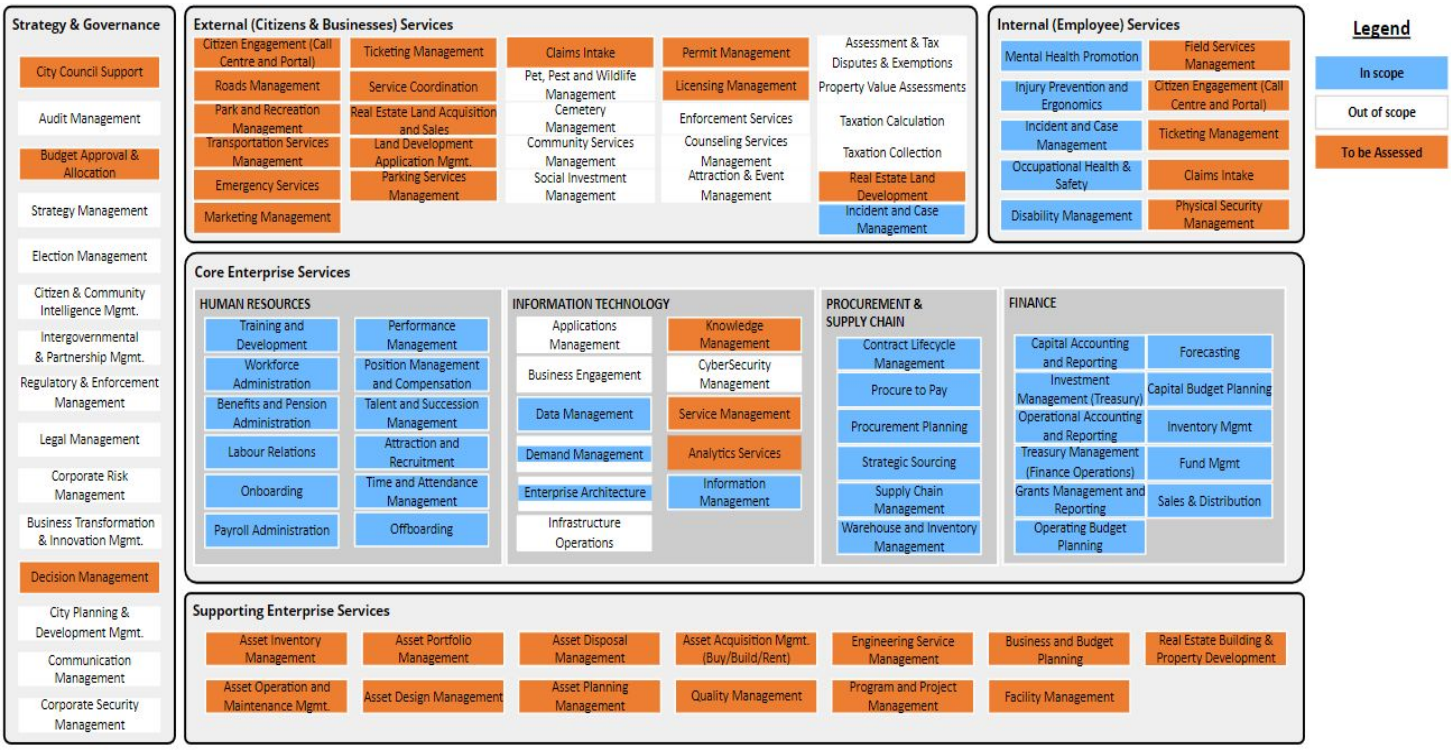


Figure 6: High Level Future State Mapping of ESTP Scope

6 Guiding Principles and Evaluation Criteria

The following guiding principles were identified by the City as the critical evaluation criteria for the options considered by this business case.

Alignment to City Goals	Alignment of the options being considered to the City's goals and the BTS guidelines of providing innovative, integrated, citizen-focused solutions. The solutions should allow for focused investments that support City leadership in making informed decisions and empower citizens by providing the right information at the right time. The solution options will be evaluated for alignment with the goals of the BTS and City Council's Vision 2050.
Total Cost of Ownership	The Total Cost of Ownership (TCO) will be estimated by performing an analysis of the direct and indirect costs associated with each solution option and will include ESTP program implementation and sustainment costs. Total costs for the enterprise systems will be rationalized while providing value to the citizens. Along with the TCO, the assessment also looks at costs for implementing and sustaining each of the options and potential realizable benefits associated with each option.
Enabling Adoption of Emerging Technologies	Evaluating the solution options that help the City be better prepared for emerging technologies. Such solutions will set up a foundation for future technologies such as RPA and AI as well as align with the future needs of a Smart City.
Solution Complexity	Each solution's complexity with respect to architecture, implementation, integration and sustainment will be evaluated. Options that present lower solution complexity will be ranked higher.
Solution Risk Profile	The options will be evaluated using a risk assessment. Options with a lower risk profile (taking into account mitigation and avoidance plans) will be selected. Any remaining risks will have mitigation plans to minimize impacts on City services and citizen experience.
Impact of Organizational Readiness	Organizational readiness will be assessed to gauge the options that are most aligned with organizational needs and culture. Options with lower organizational readiness implications for the City will be ranked higher.
Time to Value	A time-to-value assessment will show the duration to implement each option while considering potential constraints such as availability of resources to support the option.

7 ESTP Business Case Options

7.1 Options Overview

The City evaluated four transformation options for this business case. This section provides a description and analysis of each option based on the evaluation criteria outlined in the **Guiding Principles and Evaluation Criteria** section. A summary of the relative strength of all four options under each evaluation criterion is found in section 7.2.

	Option 1: Status Quo	Option 2: Core Homogenous ERP	Option 3: SAP Cloud First	Option 4: Best of Breed
Description	The City continues with 'business as usual' and maintains current disparate ERP systems. Capital and operational spending on Status Quo continues as-is and no benefits are realized for citizens or City employees.	The City implements a single consolidated ERP solution that spans across the City's core enterprise functions including HR, Finance and Supply Chain. In addition, integration points with EAM and POSSE will be considered.	The City implements an SAP Cloud ERP solution that spans across the City's core enterprise functions, leveraging available procurement alternatives to execute. In addition, integration points with EAM and POSSE will be considered.	The City implements the 'best of breed' ERP solution for each of the City's core enterprise functions including HR, Finance and Supply Chain. Procurement processes will be needed to evaluate 'best of breed' systems for each business function at the City.

7.2 Business Case Options Assessment

Each of the business case options was evaluated against all identified evaluation criteria as outlined in the following table. For the purpose of fair comparison, the study period for each of the options has been harmonized to ten years *from the start of implementation*; for SAP Cloud First option, this period is from 2019 - 2028. For the Core Homogeneous and Best of Breed options, this period is from 2019 - 2029 due to longer procurement cycles. For the Status Quo option, this period is from 2019 - 2029 to perform a fair comparison with the other options.

The assessment shows that if the City decides to stay with the Status Quo, it will continue to perpetuate process inefficiencies, necessitate further customizations, increase risk and continue to incur a high total cost of ownership.

	Option 1: Status Quo	Option 2: Core Homogenous ERP	Option 3: SAP Cloud First	Option 4: Best of Breed
Alignment to the City's goals	• Poorly aligned with the City's goals of having focused investments and enabling integration and collaboration across the City. • Does not invest in any transformative technologies. • Technology support costs will increase in the future due to mandatory upgrades required for PeopleSoft and SAP and a deferred spend in 2022-2024.	• Aligns with goal to establish focused investments into a modern, cloud based enterprise system that consolidates multiple core functions in the City under the same technology platform. • Aligns with the City's vision to provide integrated and collaborative environment among branches. • Aligns with ongoing initiatives at the City such as "Program and Service Review", "Urban Form Business Transformation" and "EPM".	• Provides benefits that are similar to those of the core homogeneous ERP option with a shorter time to value if procurement can be bypassed.	• Best alignment with the City's goals by providing the best technology support core functions and enhancing citizen experience. • Provides best future state support with investments in innovative technology for each of the core functions. • This option will not have short time to value because it will require long procurement cycles for each technology solution.

	Option 1: Status Quo	Option 2: Core Homogenous ERP	Option 3: SAP Cloud First	Option 4: Best of Breed
Total Cost of Ownership	**$314.1M**	**$296.6M**	**$264.9M**	**$310.6M**
Enabling Adoption of Emerging Technologies	• Does not set a foundation for emerging technologies such as Analytics, RPA and AI.	• Sets a solid foundation for emerging technologies by providing accurate master data and establishing a modern, agile platform	• Sets a solid foundation by providing accurate master data for emerging technologies such as Analytics, RPA and AI, and establishing a modern, agile platform.	• Sets a foundation through multiple integrations by providing accurate master data for emerging technologies.
Solution Complexity	• Status Quo solution is highly complex. Administration anticipates that the support of existing, highly customized and aging systems will become increasingly difficult.	• Solution will have medium / moderate complexity. While it impacts a breadth of City processes , technology architecture, sustainment and management processes, it will enable consolidation of business processes through an integrated and simplified technology landscape.	• Solution will have medium / moderate complexity. While it impacts a breadth of City processes ,technology architecture, sustainment and management processes, it will consolidate business processes through an integrated and simplified technology landscape.	• Solution will have high complexity. Technology architecture is more complex and requires multiple integrations and higher level of governance and management to oversee a more diverse application portfolio.
Solution Risk Profile	• Solution has the highest risk profile. The current state neither meets evolving business needs nor provides sufficient value to the citizens.	• Solution has relatively lower risk profile as it moves the City away from Status Quo, provides value for residents through standardization and setsa foundation for future innovation.	• Solution has a relatively lower risk profile as it moves the City away from Status Quo, provides value for residents through standardization, and sets a foundation for future innovation.	• Solution has a relatively high risk profile. It resolves current state issues but also creates complexity around managing and negotiating multiple vendor contracts, makes the application portfolio more complex to sustain and manage financially and architecturally.
Impact of Organizational Readiness	• No impact to the City and no organizational readiness required in short-term; however, mandatory upgrades to technology will require readiness and change management in the longer-term.	• High-level of impact to the City; the solution will only be successful if the organization adopts it. A great level of effort will be required for change management and training.	• High-level of impact to the City; the solution will only be successful if the organization adopts it. A great level of effort will be required for change management and training.	• High-level of impact to the City; the solution will only be successful if the organization adopts it. A great level of effort will be required for change management and training.

	Option 1: Status Quo	Option 2: Core Homogenous ERP	Option 3: SAP Cloud First	Option 4: Best of Breed
Time to Value	• No value is achieved for citizens by retaining the status quo • The City's ROI from investments into Status Quo processes and technologies will continue to decline due to increasing architectural complexity	• Medium time to value. While the City will reap the benefits of a consolidated technology landscape and standardized processes,more time will be needed to address procurement requirements.	• Assuming the procurement cycle can be bypassed, this option provides the shortest time to value.	• Longest time to value as procurement will be needed for multiple technology platforms.
Internal Rate of Return	**Nil**	**20 percent**	**20 percent**	**18 percent**

	Option 1: Status Quo	Option 2: Core Homogenous ERP	Option 3: SAP Cloud First	Option 4: Best of Breed
Program Benefits	**Nil**	**$209.1M**	**$204.2M**	**$210.2M**
Program Implementation and Sustainment	**N/A**	**$119.8M**	**$118.4M**	**$133.8M**
Implementation	**N/A**	**$53.9M**	**$53.1M**	**$54.0M**
Sustainment	**N/A**	**$65.9M**	**$65.3M**	**$79.8M**
Payback Period	**N/A**	**7.3 years**	**6.5 years**	**7.6 years**

7.3 Recommendation

The business case makes the following three recommendations for the enterprise process and technology transformation:

1. **Transforming the City's Core Functions through Enterprise Systems Transformation:**
   Based on findings from the assessment of all four options and the associated strategic, financial and risk factors, summarized in section 7.2, the business case recommends Option 2 - The Selection and Implementation of a Core Homogeneous Cloud ERP Solution that spans the City's core functions such as Finance, HR, CPSS etc., while radically standardizing processes based on technology and industry standards.

Until procurement requirements are clarified and the recommendation is updated , the current recommendation is to select, procure and implement a Core Homogeneous ERP. This approach will provide the following benefits to the City:

- Modernize the City's technology environment with a cutting-edge solution that provides innovative functional capabilities, bettercross-department integration, and robust tools to manage and utilize data;
- Enhance information security controls, with increased protection of critical citizen and employee data;
- Meet the vast majority of the City's requirements for selecting a leading ERP that will hit the requirements of radical standardization, data integrity, cloud security and breadth of functionality; and
- Reduce the Total Cost of Ownership (TCO) by transitioning into a single, core homogeneous and integrated enterprise system (TCO - $296.6M) when compared to status quo (TCO - $314.6M) or to that of a best of breed solution (TCO - $310.6M). This reduction is due to:
    - Management of single vs. multiple system vendor contracts.
    - Reduction in technology management and maintenance costs as a result of less integration, fewer systems and more easily managed upgrades.
    - Optimization of resources through increase in process efficiencies and reduction in service delivery timelines.

However, the TCO associated with Option 2 - Core Homogeneous ERP is higher than that of Option 3 - SAP Cloud First due to the increased duration and additional effort required for additional procurement cycles.

2. **Transforming the City's Enterprise Asset Management through Enterprise Systems Transformation:**
   As core functions move towards a single core homogeneous ERP, other branches within the City (such as Real Estate, Fleet Services and Facilities Management) have an opportunity to rationalize[4] their technology landscape. The branches in question currently use multiple technology platforms such as SAP, M5 and TRIRIGA to manage and deliver their services. Some of these systems can be rationalized through the selected core homogeneous ERP and, hence, deliver an integrated solution for these branches. A detailed assessment is required and recommended to identify these rationalization opportunities.

3. **Transforming the City's Workflow Management through POSSE Transformation:**
   There is a need to rationalize the processes and technologies in business functions that utilize POSSE as an enterprise delivery and workflow management system in order to lower the costs for managing the platform. To meet these needs, the business case recommends that a detailed assessment and rationalization of the City's POSSE platform be undertaken.

The full benefits of the business case will be realized when POSSE and EAM platforms have also been standardized to align with industry best practices. Since the scope of this business case includes a high level analysis of these platforms, Administration recommends performing further detailed assessments of both POSSE and EAM in order to produce a detailed future state vision and roadmap for each of them.

The overall ESTP transformation recommendation supported by this business case is based on a very strong financial return to the City with *Total Cost of Ownership (TCO) reduction of 6 percent, Internal Rate of Return (IRR)*

[4] Application Rationalization is the practice of strategically identifying business applications across an organization to determine which applications should be kept, replaced, retired or consolidated. The goal is to achieve improvement to business operations along with reducing the total cost of ownership

at 20 percent, Return on Investment (RoI) of 74.5 percent and Net Present Value (NPV) of $62.2 million (for a conservative sensitivity scenario). Detailed financial analysis is provided in Appendix J of this document.

8 ESTP Program Definition

8.1 ESTP High-Level Roadmap and Implementation Plan

The ESTP program roadmap identified and defines the initiatives that need to be executed to implement Option 2 - Core Homogeneous System, over a period of four years (2019 - 2022).

Initiatives have been grouped into five main streams:

1. **ERP Core Initiatives** - This stream outlines the core initiatives required for the process and technology transformation of the core business functions, including HR, Finance and Supply Chain Services at the City. Identified initiatives will enable radical process standardization and technology transformation for the core business functions.

2. **ERP Ancillary Initiatives** - This stream identifies ancillary initiatives to support core initiatives during execution as well as for sustainment and benefit realization once the core initiatives have been executed.

3. **EAM Rationalization and Rollout** - This stream will include initiatives to assess and rationalize the Enterprise Asset Management (EAM) technology landscape. It will also execute concurrent initiatives to radically standardize EAM processes and align them to the industry leading practices using EAM technology transformation as a driver.

4. **POSSE Modernization** - This stream will include initiatives to assess and select a Workflow Management System (WMS) for niche services such as permits and licensing, pets and wildlife management etc. It will further look at rationalizing the current POSSE platform into the selected WMS by migrating prioritized POSSE workflows to the new WMS. Process standardization for these workflows and business process areas will be completed concurrently with the implementation of these workflows in the new WMS.

5. **Communication and Change Management** - This stream outlines communication and change management initiatives to ensure the success of the ESTP program. As the above mentioned streams are delivered, managing communications and facilitating the adoption of these initiatives through a robust change management approach will be critical.

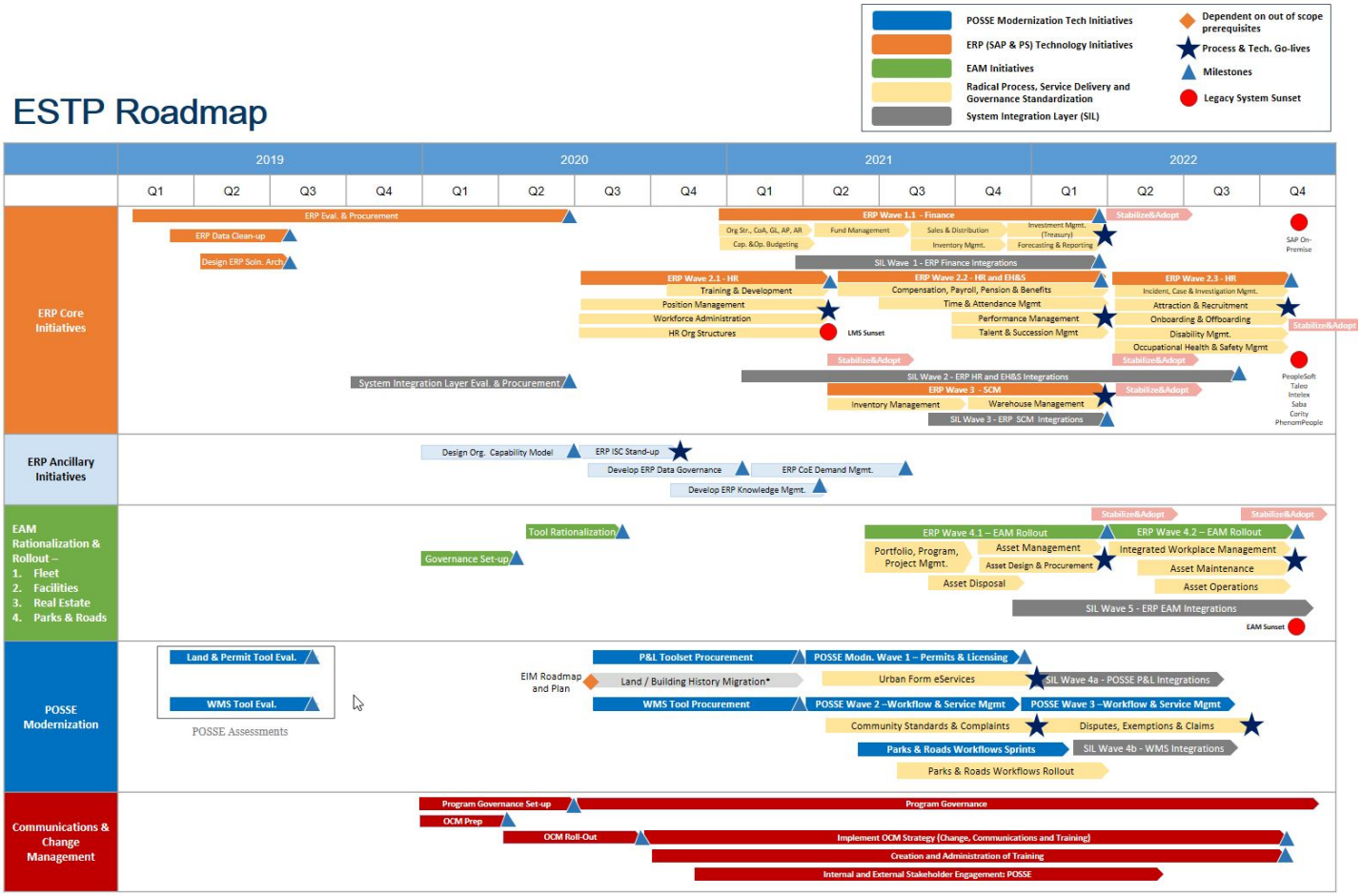


Figure 7: ESTP Roadmap - 2019 - 2022

The roadmap is based on an 18-month procurement timeline followed by a three year implementation period (2020 - 2022) in which the majority of the investment will be incurred. The implementation period will be followed by a seven year harvest period, where the benefits from the program will be realized (2023 - 2029).

The roadmap includes preparation, software selection, software implementation and stabilization, along with data cleansing and business process standardization for each of the core functions including Finance, HR and Supply Chain Management. It also outlines sunset / phase out milestones for the City's existing legacy systems, including PeopleSoft, SAP on premise, EAM, and other tertiary HR systems including Taleo, Cority, Intelex, PhenomPeople and Saba.

The initiatives have been prioritized and sequenced based on interdependencies among them, their relationship to ongoing initiatives at the City, and other assumptions highlighted in the Appendix B – ESTP Roadmap Prioritization Considerations. Some initiatives suggested for 2020 can be initiated in 2019, depending on funding and resources availability.

Each initiative identified on the roadmap has been described in a High-level Initiative Overview card in Appendix E - High-level Initiative Overviews. Definitions include a description of the initiative and its dependencies, the estimated

duration, the cost to implement (+-20 percent), and resource requirements (functional/process, technical, program management).

8.2 Initiative Overviews

8.2.1 ERP Core Initiatives

Per the roadmap, the following initiatives will be completed (with approximate timelines highlighted in parenthesis).

8.2.1.1 ERP Preparation Initiatives (January 2019 - June 2020)

ERP Preparation Initiatives include:

- **ERP Evaluation and Procurement** that will include an evaluation of various homogenous ERPs and selection of the solution that best fits the City's requirements. ERP requirements will be gathered from various corporate units (Finance, Human Resources & Employee Health and Safety, and Corporate Procurement and Supply Chain), and vendor solutions will be evaluated against those requirements. In addition, architectural and cost evaluations will be performed. Representation from the City of Edmonton's Law Branch, Corporate Information Governance Section and Corporate Information and Cyber Security Section will be closely involved starting with requirements definition and through the development and execution of vendor agreement contracts;
- **ERP Data Clean-up** (Master Data Management) that will include preparation and clean-up of existing ERP data to ensure that it is ready to be moved to the new ERP during implementation; and
- **ERP Solution Architecture Design** that will be required to define the structure and interactions of Cloud ERP and other feeder systems in the future state. This initiative will be guided by enterprise architecture and business considerations at the City.

8.2.1.2 ERP Implementation Initiatives (July 2020 - December 2022)

The future state ERP solution should be deployed in implementation waves that are described as follows:

- **ERP Finance Implementation Waves** in which Finance modules of the Cloud ERP (such asGeneral Ledger, Sales and Distribution, Funds Management, etc.) will be configured, tested and deployed. Process standardization, data migration and service delivery and governance model design will occur in parallel for future state Finance capabilities (functions) outlined on the future state capabilities map in section 5.2;
- **ERP Human Resources and Employee Health & Safety Implementation Waves** in which the Human Resources and Health and Safety modules of the Cloud ERP (Human Capital Management, and Employee Health and Safety modules) will be configured, tested and deployed. Process standardization, data migration and service delivery and governance model design will occur in parallel for future state Human Resources and Health and Safety capabilities (functions) at the City outlined in the future state capabilities map in section 5.2;
- **ERP Supply Chain Implementation Waves** in which the Supply Chain modules of the Cloud ERP (Inventory and Warehouse Management) will be configured, tested and deployed. Process standardization, data migration and service delivery and governance model design will occur in parallel for future state CPSS capabilities (functions) outlined in the future state capabilities map in section 5.2; and

- **Systems Integration Layer (SIL) Implementation Waves**: For each of the three implementation waves outlined above, integration waves to integrate the Cloud ERP solution to existing feeder systems (such as GIS, TRIRIGA, etc.) will be undertaken concurrently using the Systems Integration Layer.

8.2.2 ERP Ancillary Initiatives

ERP ancillary initiatives are not mandatory for the implementation of the ERP solution, but should be considered by the City as part of the Program in order to better support and sustain its Enterprise Systems:

- **Design Detailed Organizational Capability Model**: The current high level capability model would be developed in more detail during this initiative. This detailed capability analysis, although not necessary, would facilitate discussions on EAM Rationalization and POSSE Modernization initiatives;
- **ERP Internal Support Center Stand-up**: An ERP Internal Support Center would be designed, formalized and operationalized during this initiative. This ERP Internal Support Center would be comprised of business, technical and project resources; and the mandate for the Support Center, the roles required, its operating model and its organizational structure would be defined in this initiative;
- **ERP Demand Management:** This initiative would set-up a demand management process and mandate for the ERP platform specifying its intake process, demand prioritization mechanisms and demand process governance bodies;
- **Develop ERP Data Governance:** This initiative would define ERP master data management processes and policies as well as the governance structure around it; and
- **Develop ERP Knowledge Management (KM):** This initiative would define how knowledge (documentation) is managed in the ERP Internal Support Center. The initiative would define KM processes & workflows, tools, approval processes and governance structure(s).

8.2.3 Enterprise Asset Management (EAM) Rationalization Initiatives

The following initiatives will be completed as part of this stream (with approximate timelines highlighted in parenthesis).

8.2.3.1 EAM Rationalization Preparation Initiatives (January - August 2020)

EAM Rationalization Preparation Initiatives include:

- **EAM Governance Setup** will include designing, formalizing and operationalizing governance mechanisms for EAM between Real Estate, Fleet and Facilities, Parks & Roads business branches, and other branches at the City. The mandate for this governance body will be to make key decisions about EAM rationalization, data management and lifecycle, and to provide strategic direction for the development of an EAM strategy and roadmap for the City of Edmonton;
- **EAM Tool Rationalization** will include conducting detailed analysis across branches that use and provide asset management services (including Fleet & Facilities, Parks & Roads, and Real Estate) to provide the City with a recommendation on:
    - whether Operational / Capital Asset Management and Financial Asset Management capabilities should be managed by a separate system of record (i.e. IBM Tririga) with integrations developed with the Core Cloud ERP System; or
    - whether Operational / Capital Asset Management and Financial Asset Management capabilities should be moved into a module within the City's Core Cloud ERP, hence eliminating the need to

develop custom integrations(Note: The City should use the same system--either selected Cloud ERP or IBM Tririga--for both Financial and Operational / Capital Asset Management Capabilities to avoid confusion on the system of record for Asset Management); and

- Identify the best-fit system for Integrated Workplace Management (IWMS) capabilities.

8.2.3.2 EAM Rationalization Implementation Initiatives (July 2021 - December 2022)

The outcome of the EAM Rationalization Initiative will provide clarity on the future state solution for the EAM requirements at the City. The solution should be deployed in implementation waves that are described as follows:

- **EAM Implementation Wave 1 (ERP Wave 4.1)** in which technical modules will be implemented for Project and Portfolio Management (PPM); EAM Asset (Portfolio) Management, Asset Design and Procurement, and Asset Disposal. Process standardization, data migration and service delivery and governance model design will occur in parallel with capabilities (i.e. functions) at the branches in-scope of this wave (Real Estate, Fleet & Facilities, and Parks & Roads);
- **EAM Implementation Wave 2 (ERP Wave 4.2)** in which EAM Work Management, Asset Maintenance and Asset Operations modules will be implemented. Process standardization, data migration and service delivery and governance model design will occur in parallel with capabilities (i.e. functions) at the branches in-scope of this wave (Real Estate, Fleet & Facilities, and Parks & Roads); and
- **EAM Integrations Wave** in which EAM modules will be integrated with other ERP modules and feeder systems wherever needed.

8.2.4 POSSE Modernization Initiatives

The following initiatives will be completed as part of this stream (with approximate timelines highlighted in parenthesis).

8.2.4.1 POSSE Modernization Preparation Initiatives (January 2019 - March 2021)

POSSE Modernization Preparation Initiatives include:

- **Permits & Licensing Tool Evaluation & Procurement** of a solution (e.g. POSSE, Accella, and ESRI CityWorks) based on business requirements, architecture, and cost and benefit considerations; and
- **Workflow Management System Tool Evaluation & Procurement** of a solution (e.g. ServiceNow, BMC Remedy, and Salesforce) based on business requirements (including case management, queue management etc.), architecture, and cost and benefit considerations.

8.2.4.2 POSSE Modernization Implementation Initiatives (April 2021 - December 2022)

- **POSSE Implementation Wave 1** in which the selected Permits & Licensing Tool will be implemented out-of-the-box (i.e. without modifications). Process standardization for Urban Form business units in scope of this wave will occur in parallel to the implementation, building on the ongoing Urban Form Business Transformation initiative. Point integrations to SAP, PeopleSoft, Tririga, and ESRI may be required in the interim. These integrations can later be moved to the Systems Integration Layer when the core ERP Implementation has been completed;
- **POSSE Implementation Waves 2 & 3** in which the selected Workflow Management Tool will be implemented out-of-the-box (i.e. without modifications), without modifications. Process standardization and workflow migration sprints will occur for the highest priority workflows selected by City stakeholders. Each workflow

will be moved to the selected workflow management system along with its integrations and associated data; and

- **POSSE Integration Waves** in which two waves of integration will be undertaken. The first wave will be focused on integrating the newly implemented Permits and Licensing system with the new ERP and other applications such as GIS, and the second wave will integrate the newly implemented Workflow and Service Management Tool with the new ERP and other applications such as GIS. In addition, interim point integrations may be needed for the Permits and Licensing tool with SAP, PeopleSoft, Tririga, and ESRI, as mentioned earlier.

8.2.5 Communications and Change Management Initiatives

The following initiatives would be completed as part of this stream (with approximate timelines highlighted in parenthesis).

- **Program Governance Setup:** In this initiative, a governance structure will be established to manage decision making and support ESTP. This initiative will include stakeholders from across the organization and have an established meeting frequency;
- **Organizational Change Management Strategy Preparation:** this initiative will include the formation of a change management team comprised of external resources along with internal City of Edmonton resources. The key activities during this phase include performing current state and cultural assessments, developing a stakeholder engagement plan, and creating a high level organizational change management strategy;
- **Organizational Change Management Strategy Rollout** will engage stakeholders from across the organization to assess change management and training needs, and to understand how best to channel the organization's current capabilities and competencies for the ERP transformation;
- **Organizational Change Management Strategy Implementation:** This initiative will include the development and delivery of tailored communications for all ERP Initiatives, including developing key messages, management of change activities and governance of change management initiatives through monitoring communications and stakeholder engagement metrics;
- **Creation and Administration of Training:** This initiative will include the development of a training plan using information gathered from the training needs and competency assessments. Training modules will be developed for each phase of the ERP implementation. Training will be designed based on stakeholder needs and will incorporate several different training methods; and
- **Internal and external Stakeholder Engagement POSSE:** This initiative will specifically target City employees and Edmonton residents that will be affected by the POSSE Modernization. This initiative will identify all stakeholders and their communications and change management needs and will include development and implementation of the stakeholder engagement plan.

8.2.6 Program Sustainment Initiatives

ESTP will require sustainment and support after the implementation of ERP modules. The support will primarily be provided through the following initiatives:

- **ERP Internal Support Center** will play a crucial role during latter implementation stages of the Cloud ERP and through the post implementation sustainment phase. This organizational unit will provide Tier 2[5] (medium

[5] Tier 2 Support requires a degree of functional and/or technical knowledge, and is staffed by resources with troubleshooting capabilities. Tier 2 support staff is often experienced and knowledgeable on a particular product or service

level expertise) support to all corporate and business units that will be using the newly implemented Cloud ERP, and will act as a hub of knowledge supporting the City's ERP users; and

- **Ongoing Change Management and Training** is critical to the sustainment of the ERP system. A dedicated change management team will support stakeholders across the organization through continually providing tailored communications along with training and coaching.

8.3 Program Interdependencies

In addition to interdependencies between initiatives on the roadmap, there are some additional interdependencies with other initiatives at the City. These include:

- **Enterprise Information Management (EIM) initiative:** The EIM initiative will identify information / data types, data classification and categorization at the City as well as defining the policies and procedures required to manage this information and data at the City across all of its branches. This initiative will likely inform the preferred toolset for storing the data records moved from POSSE system and will impact POSSE modernization initiatives;
- **Service Management strategy and roadmap:** This initiative is recommended to define the City's Enterprise Service Management roadmap and strategy, including the preferred service management toolset. Enterprise Service Management Strategy defines standardized service management methodologies, descriptions and service delivery toolset for the services delivered by the City's branches. As these services are identified and defined by the Program and Service Review (PSR) initiative, standardizing management and delivery mechanisms will provide citizens and businesses with a consistent experience across all services requested from the City.

  As modern day enterprise service management toolsets also offer workflow management capabilities, the selection of this toolset will directly impact the selection of a Workflow Management System (WMS), which is required for POSSE modernization initiatives;
- **Cybersecurity policies:** While these policies will not have a direct impact on the ESTP, some policies, such as data retention policies, data repatriation policies, data ownership rights, may dictate contract negotiations with the selected ERP provider; and
- **SAP Ariba Implementation:** The initiatives in the business case roadmap will need to align with the currently ongoing SAP Ariba implementation, which is expected to be completed by Q1 2020. The implementation of ESTP's Cloud ERP Supply Chain - Inventory and Warehouse management modules - starts in Q2 2021. It is important to note that the SAP Ariba implementation is aligned with the Core Homogeneous ERP option recommended in the business case.

9 ESTP Resource Requirements

The ESTP program will require a significant resource investment by the City, including large numbers of City staff across each of the core functions being transformed. The business case identifies a need for internal resources from the City's Executive Leadership Team, the Open City and Technology branch, and other business units. Apart from internal resources, the City will need external vendor advisory and technical implementation resources to support the preparation, implementation and sustainment of the Program. The major stakeholder groups (internal and external) identified for the purpose of resourcing are outlined below.

9.1 ESTP Stakeholder Groups

- **City of Edmonton Leadership:** The City leadership group will comprise of the ESTP Sponsor, the ESTP Advisory Board, the City of Edmonton Executive Leadership Team, the Business Technology Steering Committee, and the Business Technology Working Group. This group will identify stakeholders to resolve escalated risks and issues and provide decisions and direction to the delivery team.
- **City of Edmonton Branch Leadership & Staff:** This group will have leadership representation from Financial Services, Financial Strategies and Budget, Corporate Procurement and Supply Services, Corporate Safety and Employee Health, Human Resources, Law, and Real Estate. In addition, procurement facilitation services for all ESTP related procurement activities will be provided by procurement staff.
- **Open City and Technology** (**OCT) Leadership:** This technology-led implementation will be championed by OCT leadership, including the Branch Manager, Chief Information Security Officer, Directors, and other Senior leaders from the OCT branch.
- **OCT Staff:** This group includes representatives from the Enterprise Architecture team and IT teams within the OCT branch of the City. Representatives from this group will participate in all phases on an as required basis, working with other internal and external teams to support the implementation of the new ERP and its integration with existing systems.
- **Core Project Teams (Internal):** These teams will be composed of the internal project team or teams who will collaborate with external consultants to execute and deliver the initiatives outlined on the roadmap based on direction provided by the City, Branch and OCT leadership,.
- **Core Project Teams (External):** These teams will include the external consultants who will collaborate with the City to deliver the various initiatives outlined on the roadmap and perform day-to-day project technical, process and project activities related to the Program.
- **Functional Specialists:** These specialists will provide business representation from various branches that will use the new ERP in the future. These specialists will be engaged during the various stages of the systems implementation lifecycle.
- **ERP Internal Support Center:** A new ERP Internal Support Center will be established as part of the preparation and implementation phases of the Program. Comprised of business, technical and project resources, this ERP Internal Support Center will play a crucial role during the later stages of the implementation phase, and will provide ongoing support during the sustainment phase of the Cloud ERP. The Center will provide Tier 2 (medium level expertise) support to all corporate and business units that will use the ERP, and will act as a hub of knowledge for the ERP.

Detailed resourcing for each of the above stakeholder groups split by preparation, implementation and sustainment phases can be found in Appendix C - Resourcing Requirements.

9.2 Proposed ESTP Governance

Following best practice research as well as successes and lessons learned from other leading public sector organizations, it is critical to identify the key governance bodies necessary to establish consistency and standardization across the City. The proposed governance structure will be put in place during implementation and will continue to operate throughout all key initiatives to ensure efficiency and accuracy in decision making and risk escalation. Activities required to establish a functional governance structure include:

- Development of a centralized governance model;
- Development and deployment of governance policies and procedures (including mandates, roles and responsibilities, approvals and governance processes for the engagement);
- Identification and implementation of appropriate success and performance metrics and measures; and
- Alignment of technical architecture of ESTP to support and sustain operations.

Maintaining a centralized approach to governance will be key to enabling the success of ESTP and establishing standard, consistent technology and processes across the City.

Figure 8 summarizes the high level governance structure for the ESTP initiative:

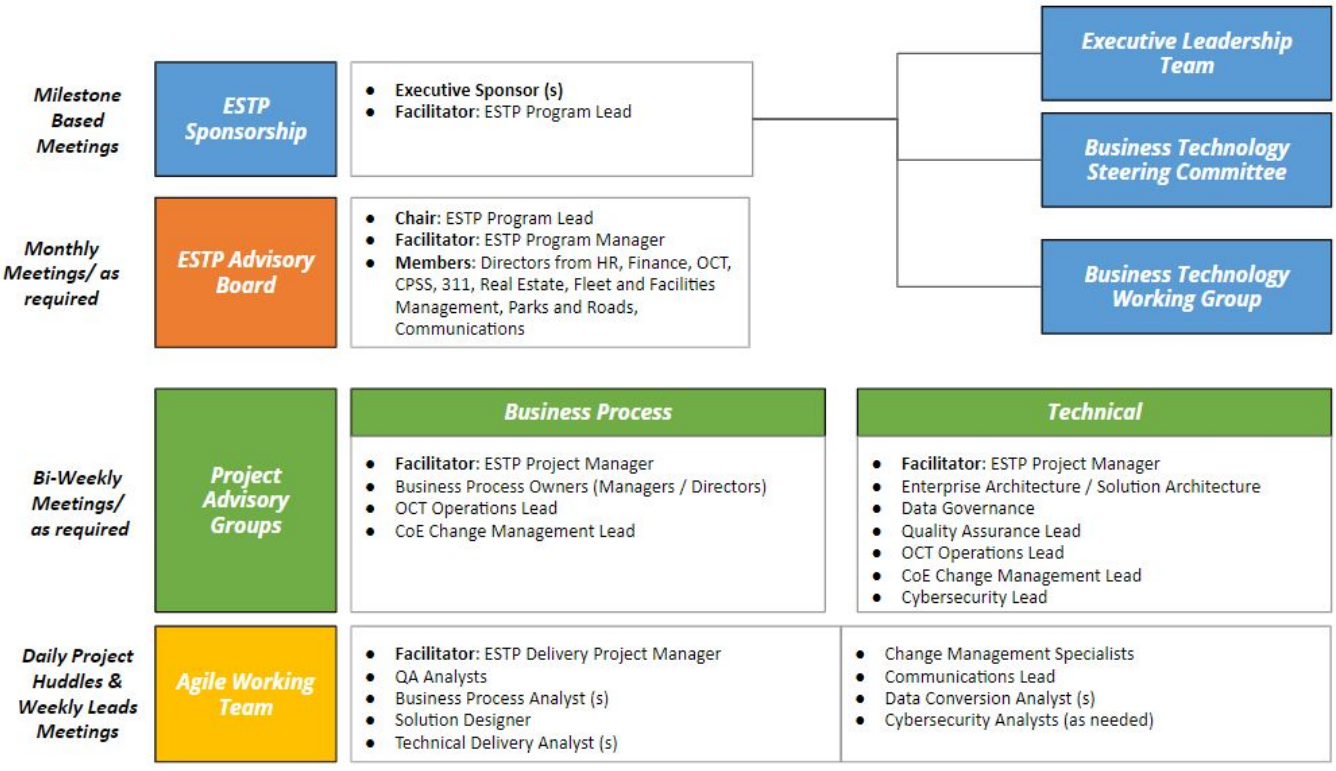


Figure 8: ESTP Governance Model

The mandate and responsibilities for each of the governance bodies identified in figure 8 are discussed in Appendix D - Mandates and Responsibilities.

10 Organizational Readiness Approach & Strategy

The City is a leader in transformation, as demonstrated through multiple initiatives such as Program and Service Review, Enterprise Performance Management, and the Business Technology Strategy. As the City moves forward with the ESTP program, a clear change management strategy is required to align, engage and create ownership of the changes that will occur across the organization. City departments and branches will need to work collectively to create a robust change management strategy for the program. Engaging City's employees will be critical to the success of the program.

10.1 ESTP Organizational Readiness Assessment Approach

Organizational readiness is a key component of any large business transformation and is an indicator of how well-informed stakeholders are about the transformation, their attitudes towards the transformation and their reaction to the organizational change management and communication efforts. Organizational Readiness Assessments provide periodic pulse-checks of people's ability to transition to new ways of working.

The business case used the following approach to conduct the organizational readiness assessment that informed the proposed Organizational Change Management (OCM) Plan and change strategy.

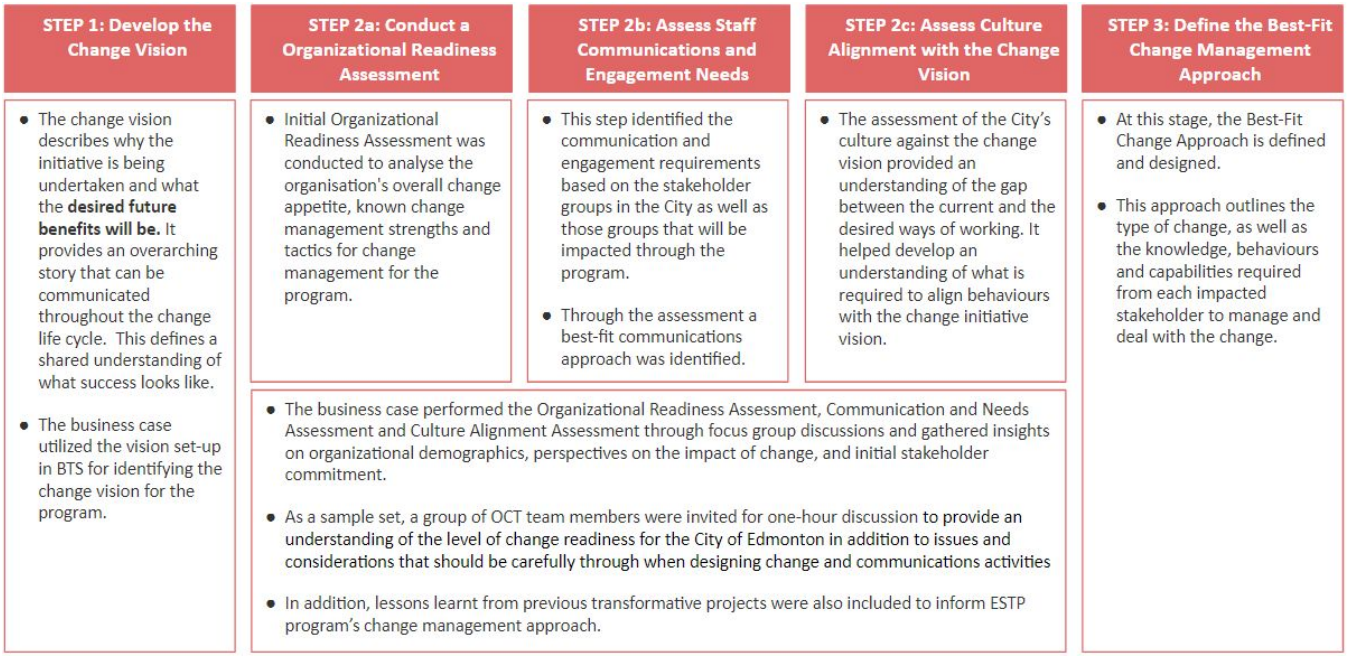


Figure 9: ESTP organizational readiness assessment approach

10.2 Insights and Recommendations - Organizational Readiness Assessment

As part of the business case, an organizational readiness assessment was conducted with the objectives of:

- Establishing a baseline as to where different stakeholders sit on the change readiness spectrum, allowing the opportunity to measure throughout different project phases;
- Identifying existing strengths that can be leveraged throughout the transformation; and
- Identifying opportunities and tactics to improve stakeholder readiness for change.

Based on the assessment, the following **key strengths** were identified:

- There is a clear case for change that can be championed through the leadership team and across the organization;
- There is an appetite for the business and information technology teams to work together to ensure that the ESTP is well aligned to meet the needs of the City of Edmonton; and
- There are groups of stakeholders that show high commitment levels even if the level of impact to their areas is reportedly high.

The **key opportunities and areas of focus** identified during the initial focus group were:

- Stakeholder communications can be enhanced to effectively communicate ESTP roadmap and stakeholder value;
- Stakeholder buy-in can be improved through early engagement; and
- Change fatigue from past initiatives should be taken into consideration.

Based on the focus group and overall organizational readiness the business case makes the following **recommendations:**

- Establish a strong communications and change management initiative to create awareness, instill anticipation, and ensure on-board processes and project knowledge are ready;
- Create key messages describing the corporate benefits and positive job impacts to be derived from transformation;
- Leverage stakeholders as change champions, influencers, and advocates where and when possible;
- Set expectations early in the process, particularly around project benefits and scope;
- Identify notable opportunities to further engage leadership in ESTP messaging and activities;
- Encourage support for communications from leadership, which is imperative to ensure stakeholder engagement; and
- Collaborate with City business areas to address the challenges associated with balancing the timelines and effort required by the ESTP implementation with other corporate priorities.

10.3 Proposed ESTP Organizational Change Approach

Change management, communications and stakeholder engagement strategies need to be developed in tandem in order to drive a successful transformation. Specifically, tailoring the change management approach to address the needs of different types of stakeholders across the City is imperative. The change management strategy should take into account staff communication and engagement needs, cultural alignment and the degree of adherence to the change vision.

The Change Management approach considers the findings from the readiness assessment as well as the following foundational principles from similar public sector transformations:

- Anchoring the change in the business and technology strategy;
- Prioritizing initiatives based on value-based outcomes for the City and its stakeholders;
- Creating a personal and empowering experience for people through intentional and engaging communications; and
- Encouraging adoption of prioritized initiatives through early engagement, and through ongoing learning and development.

The overall organizational change management and communications plan is described below.

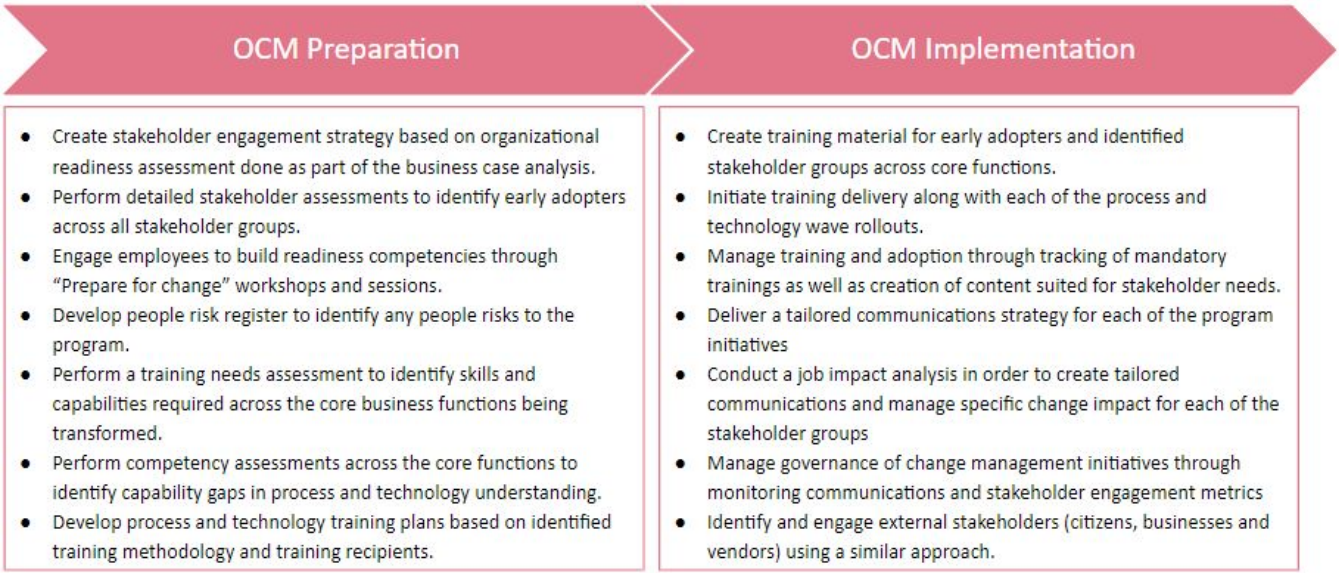


Figure 10: Organizational Change Management Approach

Organizational change management will include stakeholder-specific strategies to ensure that the City communicates with employees and citizens throughout the process so that stakeholders are prepared for the changes that will result from the ESTP modernization.

Organizational change management will put the citizens at the center of change, requiring collaboration across the City business areas. The business case recommends building a core change management team to be present throughout each of the change management activities and that has participation from branches and vendors.

11 ESTP Financial Analysis

11.1 Cost - Benefit Analysis Results

ESTP's estimated costs and benefits were analyzed to assess the expected return on investment and payout of the overall capital investment required for the delivery of the program for all four options assessed in this business case. However, the details throughout this section are specific to the recommended option,Core Homogeneous ERP. The summary of the financial analysis for all options is available in Appendix J - Financial Analysis for All Options.

From 2019 to 2029, the following financial metrics are expected for the program.

Program Gross Benefits	**$209.1 million**
Program Implementation and Sustainment Costs	**$119.8 million**
Implementation	**$53.9 million**
Sustainment	**$65.9 million**
Program Net Benefits	**$89.2 million**
Net Present Value	**$62.2 million**
Internal Rate of Return	**20 %**
Return on Investment	**74.5%**
Payback in Years	**7.3 Years**

The yearly breakdown of the **expected Net Benefits** of **$89.2 million** is provided in the graphic below. For each year, the net benefits are based on annual expected gross benefits, less the annual expected costs for the program.

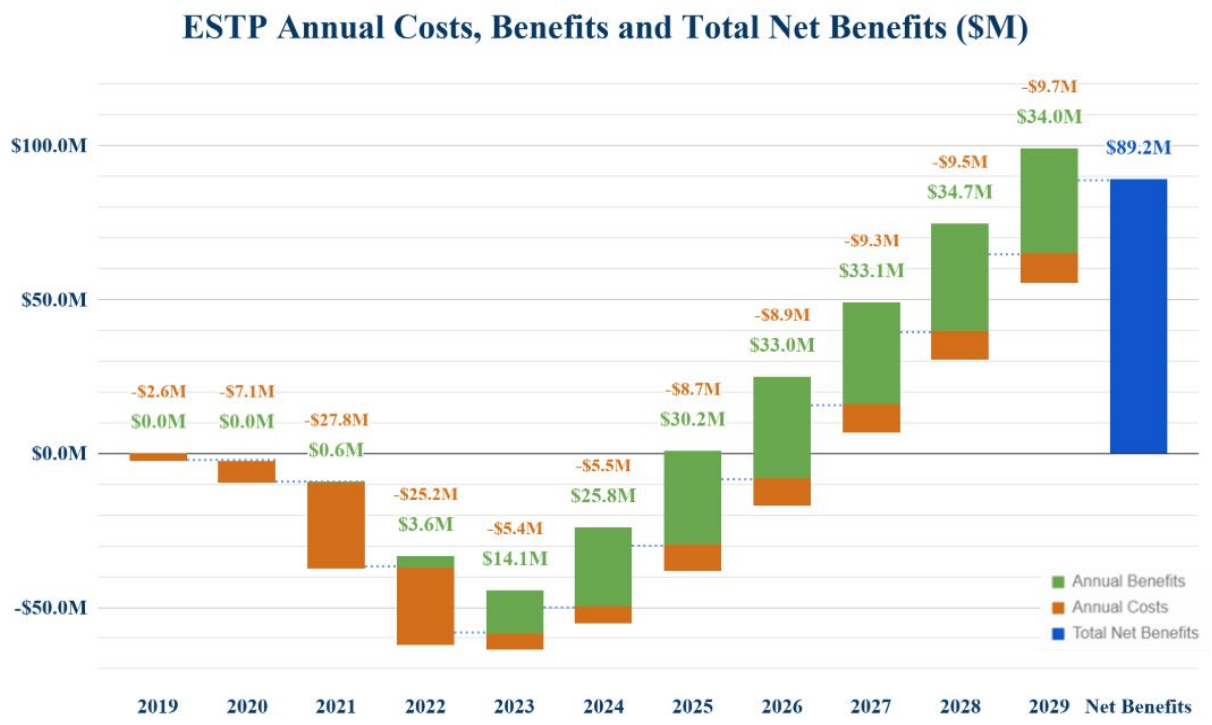


Figure 11: ESTP annual costs, benefits and net total benefits breakdown by year

11.2 ESTP Costs

The costs of this program were estimated for an 11 year period for the Core Homogeneous ERP option from 2019 - 2029. The costs include the estimates for technology procurement and licensing, and implementation and sustainment costs for internal City and/or external consulting/vendor resources cover all initiatives outlined on the program roadmap, with the exception of the following ancillary initiatives:

- Design Organizational Capability Model;
- Develop ERP Data Governance;
- Develop ERP Internal Support Center Demand Management Processes; and
- Develop ERP Knowledge Management.

11.2.1 Cost Analysis Approach and Assumptions

The analysis of costs for program initiatives is **effort driven,** and based on a **bottom-up approach** that costs all initiatives on the roadmap and rolls those costs up into appropriate views.

The major assumptions made in deriving costs are as follows:

- The study period for each of the options has been harmonized to ten years from the start of implementation**.** For SAP Cloud First option, this period is from 2019 - 2028.or Core Homogeneous and Best of Breed options, this period is 2019 - 2029 due to longer upfront procurement preceding the implementation;
- Cost estimates are provided based on the scope of work but do not constitute a guarantee. Costs may change based on the implementation timeline selected by the City;
- Rates used for external support are based on competitive Edmonton and Calgary market rates for consulting services;

- Rates used for resources internal to the City are derived from the following:
    - Internal Branch resource rate tables (OCT)
    - Collective Bargaining Agreement (CSU 52) 2018 resource rates
    - 2019-22 proposed City operating budget (blended branch rates for Finance, Human Resources and OCT)
    - Blended resource rates provided by the City (CPSS)
- Annual factors are used to account for average year-over-year cost increase. These factors are based on the Municipal Price Index (MPI) of the City of Edmonton, and the Commercial Software Price Index (CSPI) published by Statistics Canada;
- Costs for external resources are assumed wherever external specialist skills will be required; and
- Other assumptions related to program implementation and sustainment costs have been detailed in Appendix G - Financial Analysis Assumptions.

In general, the business case financial model has been developed using a **conservative modelling approach**. This approach implies that the costs have been estimated on the higher end of expected cost values, while the benefits have been estimated on the lower end of expected benefit values. This conservative approach was taken to provide a contingency for the City's investment in order to respond to issues such as unforeseen delays or challenges in realizing full benefits.

Some of the key cost assumptions that support the conservative approach are:

- Status Quo costs that carry over to the future state have been ramped down at a conservative rate over a period of five to six years,though these costs can likely be ramped down earlier and at a faster rate;
- Infrastructure costs related to existing on premise systems have not been ramped down at all over the 10 year implementation period, even though there is likely to be some level of infrastructure cost rationalization by moving to a cloud platform;
- Costs have been estimated for the initiatives on the ESTP implementation roadmap by factoring contingencies such as unforeseen delays in all phases of the program; and
- Costs have been estimated for internal resources at their highest rates based on internal rate cards, inflating the costs for the new program;

11.2.2 Preparation, Implementation and Sustainment Costs

The costs for this program may be rolled up into its three phases - preparation, implementation and sustainment. Preparation and implementation phases of the program run from 2019 to 2022. All of the costs associated with these two phases are one-time costs. The sustainment phase is scheduled to commence in late 2020, and full sustainment will begin in early 2023 after the implementation of the entire ERP has been completed. All costs related to the sustainment phase are ongoing costs (paid on a continuous basis). **Ongoing costs related to the sustainment phase include costs for software licensing and vendor support, ERP internal support center, contingencies, future enhancement projects, and ongoing personnel training.** The program implementation and sustainment costs by each phase have been summarized in the following chart.

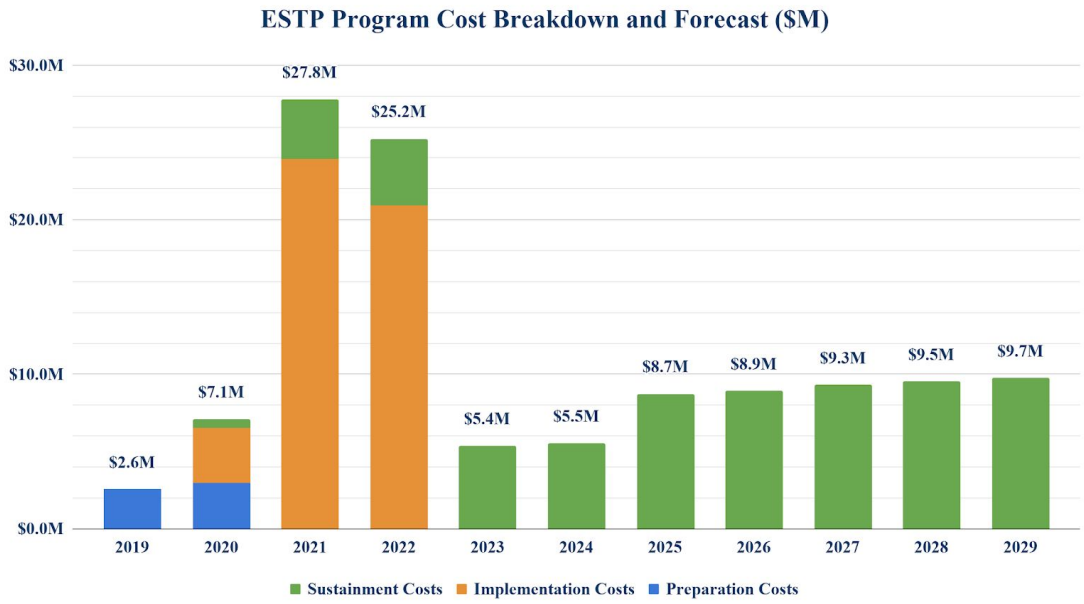


Figure 12: ESTP Program Implementation and Sustainment Costs Breakdown

11.2.3 Initial and Total Funding Requirements

The Initial funding requirement is defined as the funding that the City will need for the **first four years** of the program, from **2019 to 2022**. The requirement includes costs for all key program preparation and implementation initiatives outlined on the implementation roadmap, and for a few sustainment initiatives between 2019 and 2022, namely software and system integration layer licensing costs, and ERP internal support costs. As such, the funding requirement of this time period (i.e. 2019-2022) is expected to be around **$62.7 million**. The total funding requirements including preparation, implementation and sustainment costs[6] over 11 years (i.e. 2019-2029) is expected to be around **$119.8 million,** as outlined in the chart below. Sustainment costs include costs for software licensing and vendor support, ERP internal support center, future enhancement projects, and ongoing personnel training.

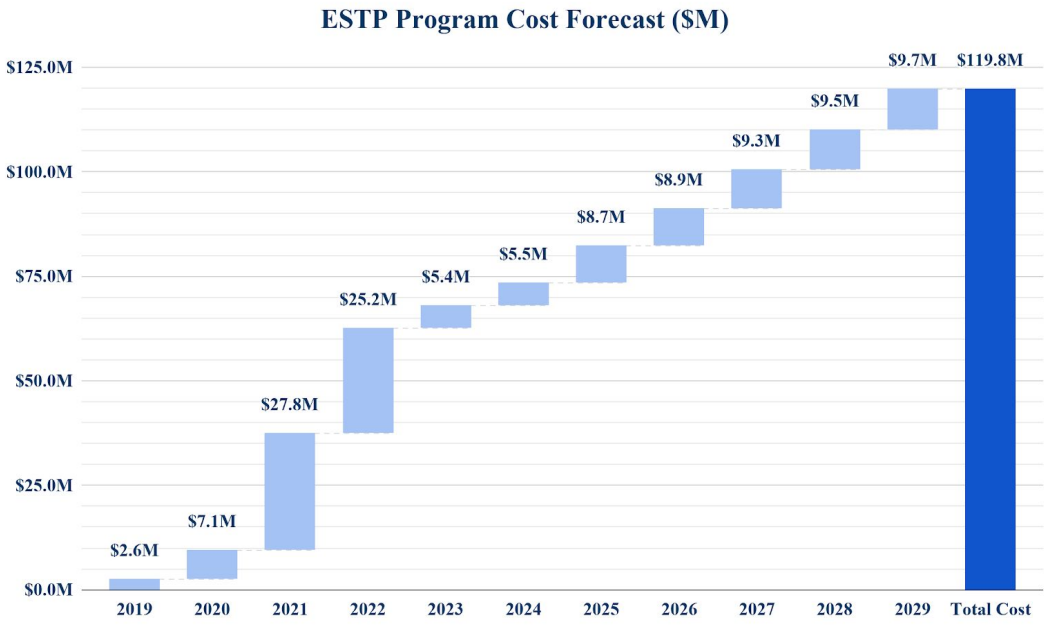


Figure 13: ESTP Program Implementation and Sustainment Costs Totals by Year

The following table provides a summary of the 11-year program implementation and sustainment costs. A detailed yearly breakdown of the 11-year program implementation and sustainment costs can be found in Appendix H - Detailed Breakdown of Program Implementation and Sustainment Costs.

Cost Category	Total Costs Estimate (2019-2029)
One-Time Costs	**$53.9 million**
Ongoing Costs	**$65.9 million**
Program Implementation and Sustainment Costs	**$119.8 million**

[6] Ongoing costs related to the sustainment phase include costs for software licensing and vendor support, ERP internal support center, contingencies, future enhancement projects, and ongoing personnel training. These costs will replace a portion of the costs of sustaining current state

11.3 ESTP Benefits

The expected benefits from this program cover a breadth of qualitative and quantitative factors. As the City of Edmonton transforms its enterprise technology environment, the benefits of modernization and standardization to be realized. This section outlines the analysis, estimation and proposed realization approach for the program benefits.

11.3.1 Benefit Analysis Approach

The approach to analyzing the Qualitative and Quantitative benefits from this program is outlined in figure 14 below:

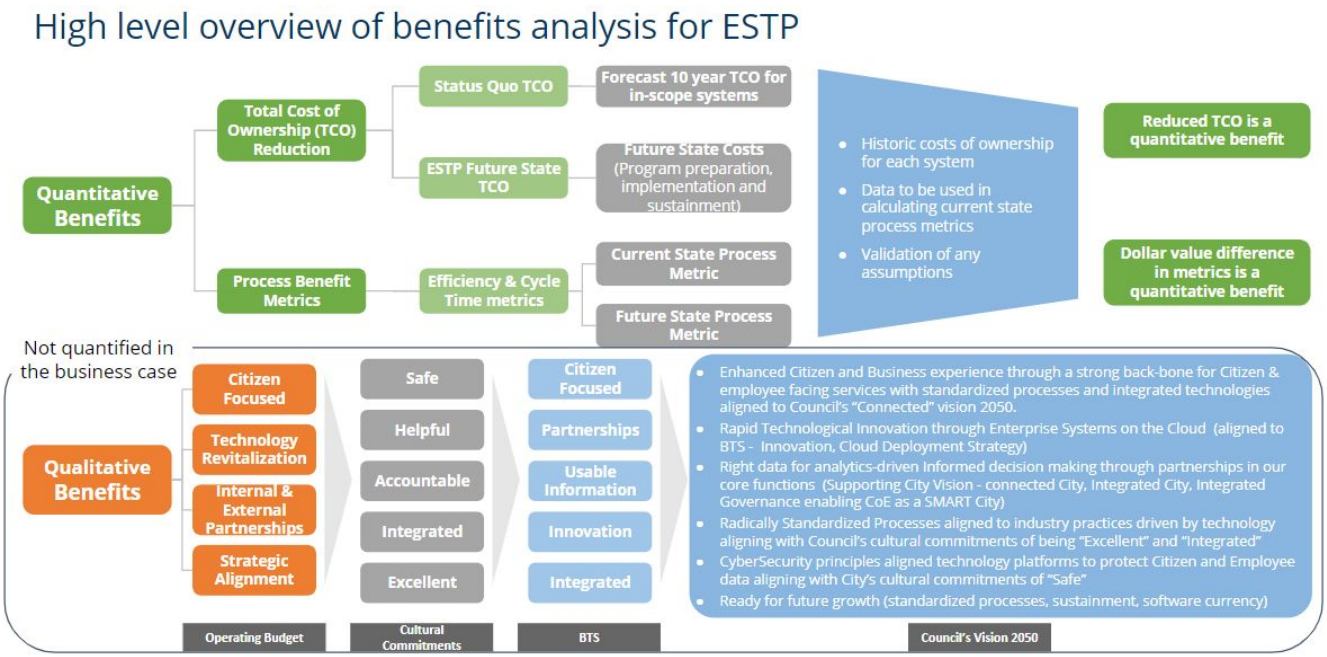


Figure 14: ESTP Program Benefits Overview

Qualitative benefits from this program have been captured and aligned to the **Council's Vision 2050**, the City's **Operating Budget**, components of the City's **Cultural Commitments**, and key elements of the City's **Business Technology Strategy**. Quantitative benefits from this program are captured and aligned to **Reduction in Total Cost of Ownership** and **Process Efficiency Improvement**. The baseline cost of ownership is based on the forecasted costs of maintaining Status Quo (i.e., the Status Quo option of this business case). Analysis done for this business case concludes that the total cost of ownership resulting from implementing the recommendation is expected to be lower than maintaining the status quo. Process efficiency improvement benefits are captured by comparing process efficiency and cycle time current state metrics to future state metrics based on relevant industry benchmark metrics from public sector organizations[7].

[7] APQC Government and Military Benchmarks used for this business case analysis.

11.3.2 Qualitative Benefits Analysis

The qualitative benefits of this program will enhance operations and service delivery at the City. As discussed in the section 4 of this business case, ESTP will drive efficiencies and effectiveness by implementing leading practices to standardize processes and introduce modernized, integrated technology platforms. These qualitative benefits will help the City be ready for future growth through standardized processes and sustainment methods, with impacts on operations, service delivery, and citizen and employee experience.

Citizen Driven Services: The ESTP will provide intuitive and consistent experiences across devices, improve turnaround times for services requested by citizens and businesses, and increase citizen engagement. In alignment with Council's "Connected" vision for 2050, these benefits will be enabled through a strong back-bone for service delivery along with standardized processes and integrated technologies**.** Specifically, ESTP is expected to enhance citizen service delivery through:

- Standardizing core processes and functions across the City;
- Enabling the use of mobile communications and other emerging means of service delivery (e.g., mobile pothole assessments, remote monitoring of parks and roads, eCitizen identity management);
- Providing data to citizens in near real-time for their service requests as well as for City's performance;
- Using more adaptive and focused communications channels for notifications, customer relationship management, and disputes management; and
- Developing a City of Edmonton wide service delivery model focused on connecting the needs of citizens and businesses to the core enterprise functions at the City.

Employee Productivity: ESTP will increase employee productivity through enhanced ERP service accessibility and readiness. Standardized processes aligned to industry best practices support the City's cultural commitments of being "Excellent" and "Integrated". In streamlining enterprise functions like Finance, Human Resources and Corporate Procurement & Supply Service, ESTP will better enable employees to efficiently deliver City services. Additionally, ESTP will simplify interactions and break silos between branches by providing integrated enterprise services including:

- Increase employee capacity for value-add work by automating processes that are low complexity and high volume (e.g. off-boarding, AR/AP, mass seasonal hiring, etc.);
- Maintain consolidated financial systems of record to simplify and streamline reporting on actual spending against operating and capital budget;
- Shorten the capital and operating budget reporting cycle time through higher process efficiency;
- Enable rolling multi-year budget cycles based on leading practices in municipal administration;
- Streamline compensation, payroll, pension and benefit payments administration by implementing fit-for-purpose ERP modules and establishing solid integration between HR and Finance modules;
- Increase effectiveness and reliability of end-to-end payroll processes and supporting technologies at the City through consolidation and centralization of time entry, time reporting and staff scheduling capabilities;
- Enhance enterprise workflow management, enterprise asset record management, and customer relationship management capabilities through focused governance and technology support in rationalizing the use of POSSE at the City;
- Establish a cohesive mandate of land leasing through a unified system of record for land at the City; and

- Setup governance and implement supporting technologies to enable a full enterprise lifecycle management mandate at the City.

Analytics Driven Management: ESTP will improve data quality and analytics at the City by generating centralized, accessible and reliable information to manage resources and to support the City in making more informed business decisions. This is in alignment with the City's vision for a Connected City, Integrated City, and SMART City. Some examples of expected functional improvements include:

- Enhanced data collection and analytics for management on integrated workplace use, operations, maintenance, financial services, and environmental sustainability; and
- Increased ability to produce consolidated end-to-end analytics of service delivery.

City Leadership Transparency: ESTP will integrate the City's enterprise technology and governance landscape and support the City's leadership vision of an Open City and a SMART City. Some examples of expected benefits for City Leadership include:

- Focused development of knowledge management and succession management governance and supporting technology to increase the City organization's resilience to change;
- Standardized processes aligned with modernized technology will provide City leadership with the foundation for the development of a value delivery focused enterprise culture; and
- Increased access to reliable analytics will enhance the overall transparency.

Technology Revitalization: ESTP will increase the City's capacity for rapid technological Innovation through enterprise systems on the Cloud in alignment with the Business Technology Strategy pillars of Innovation and the Cloud Deployment Strategy. Some examples of expected technology revitalization benefits include:

- Eliminating the need for bulky, inefficient and unreliable point-to-point integration between current enterprise systems and applications (including many examples of integrations between M5, SAP, PeopleSoft, Questica, POSSE, SLIM, etc.);
- Rationalizing the City's portfolio of enterprise applications, reducing complexity and total cost of ownership, and increasing agility and responsiveness to Citizen expectations and technology advancements;
- Focusing the use of enterprise systems and applications on their intended purpose and shifting away from heavily customizing tools ; and
- Enhancing the Cybersecurity of the City through technology platforms designed to protect Citizen and Employee data, in alignment with the City's cultural commitments of Safety.

11.3.3 Quantitative Benefits Analysis

The quantitative benefits of this program encompass a reduction in the Total Cost of Ownership of enterprise systems at the City, as well as increased efficiencies in processes utilized by enterprise functions at the City. All assumptions related to benefits calculations have been detailed in Appendix G - Financial Analysis Assumptions.

In line with the **conservative modelling approach**, all benefits have been estimated on the lower side of expected benefits values. Some of the key benefits assumptions that highlight the conservative approach are:

- Benefits from the new technology implementation and the associated process standardization have been ramped up at a highly conservative rate over a period of six to eight years, even though these benefits can likely be ramped up earlier and at a faster rate;
- Process benefits have been realized at conservative internal resource rates by reducing the branch blended rates by 5 percent (e.g. Finance, HR), or by using a lower blended rate as provided by the City (e.g. CPSS);
- Process efficiency improvement benefits arising from POSSE and EAM streams have not been quantified, even though new systems will provide process benefits in those areas; and
- A discount rate of 3 percent has been used to discount the future state benefits (and costs), even though the City's 10-year financing rate is between 2 percent to 2.67 percent. This lowers the net present value of the investment.

The following table provides a summary of gross benefits estimates for the recommended option (Core Homogeneous ERP) in this business case. (Note: Figures might not add up exactly due to rounding):

Benefit Category	Total Benefits Estimate (2019-2029)
Total Process Efficiencies	**$71.7 million**
Finance Process Efficiencies	$45.0 million
HR Process Efficiencies	$23.5 million
CPSS Process Efficiencies	$3.3 million
Total TCO Reduction (Gross) Benefits	**$137.3 million**
SAP TCO Reduction	$79.0 million
POSSE TCO Reduction	$20.1 million
PeopleSoft TCO Reduction	$27.9 million
HR and EH&S Applications TCO Reduction	$6.9 million
External IT Support Groups Cost Reduction	$3.4 million
Total Benefits (Gross)	**$209.1 million**

This business case considers **harvestable** benefits to be savings that may be realized through lower City expenditures, and **non-harvestable** benefits to be savings that may be realized through the reallocation of resource capacity to alternative value-added tasks. As such, benefits from reduction in capital/project, licensing, vendor support, and infrastructure costs are considered to be **harvestable**, and benefits from reduction in personnel costs are considered **non-harvestable**. The breakdown by these categories can be found below.

Benefit Category	Benefits Estimate (2019-2029)
Harvestable Benefits (Gross)	**$88.5 million**
Non-Harvestable Benefits	**$120.5 million**
Total Benefits	**$209.1 million**

In capturing the **Total Cost of Ownership Reduction (Gross)** benefits for this case, baseline costs were gathered from the City and used to forecast the costs required to maintain status quo for the period extending from 2019 to 2029. The future state costs reduction for each option were estimated based on assumptions regarding cost ramp down, which are aligned with systems being decommissioned. The TCO Reduction benefits summary is shown in figure 15 below. Assumptions underlying forecasted Total Cost of Ownership Reduction benefits can be found in Appendix G - Financial Analysis Assumptions.

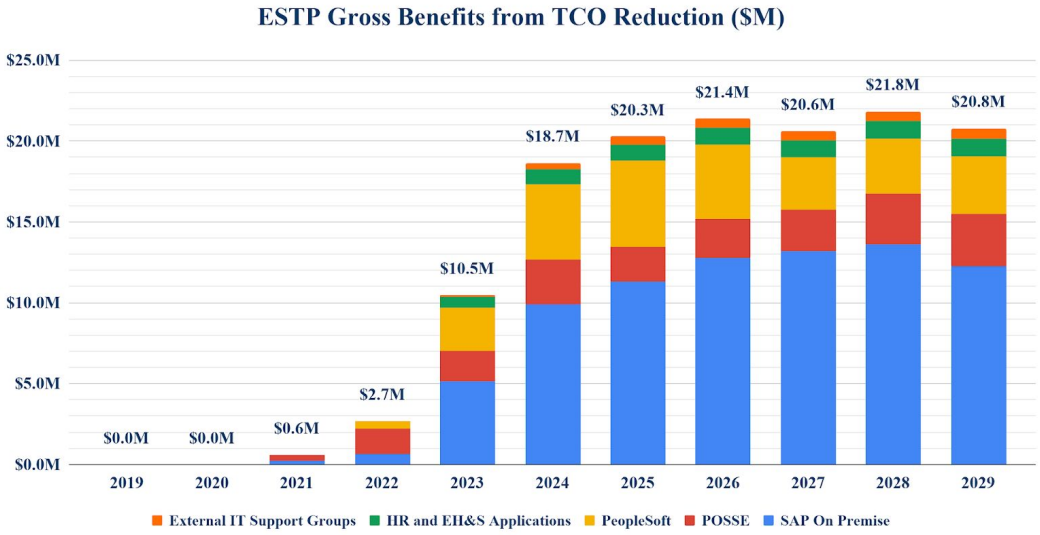


Figure 15: TCO (gross) Reduction Benefits Breakdown

In capturing the **Process Improvement** benefits for this case, process efficiency and cycle time metrics were selected for process groups within Finance, Human Resources and Corporate Procurement & Supply Services. The data inputs required to calculate the current state values for each of these benefit metrics were gathered from the City where possible and estimated based on assumptions when needed. The assumptions related to process improvement benefits have been detailed in Appendix G - Financial Analysis Assumptions. The future state values for each of these benefit metrics were defined as an achievable target based on the gap to the industry benchmark for each metric. These industry benchmarks are median values from the AQPC Government sector benchmark surveys. An important assumption in quantifying the process benefits relates to the annual revenue for the City - assumed to be approximately $3 billion based on the 2017 Annual Report published by the City. The operating revenue used is the City of Edmonton's total revenue excluding net transfers to Boards and Commissions (such as EPS and EPL etc.), and EPCOR revenues. The City's Boards and Commissions and EPCOR have separate operating structures (with their own

FTEs supporting functions such as HR) and, hence, this headcount will not be impacted by the business case. Other assumptions related to process benefits can be found in Appendix G - Financial Analysis Assumptions.

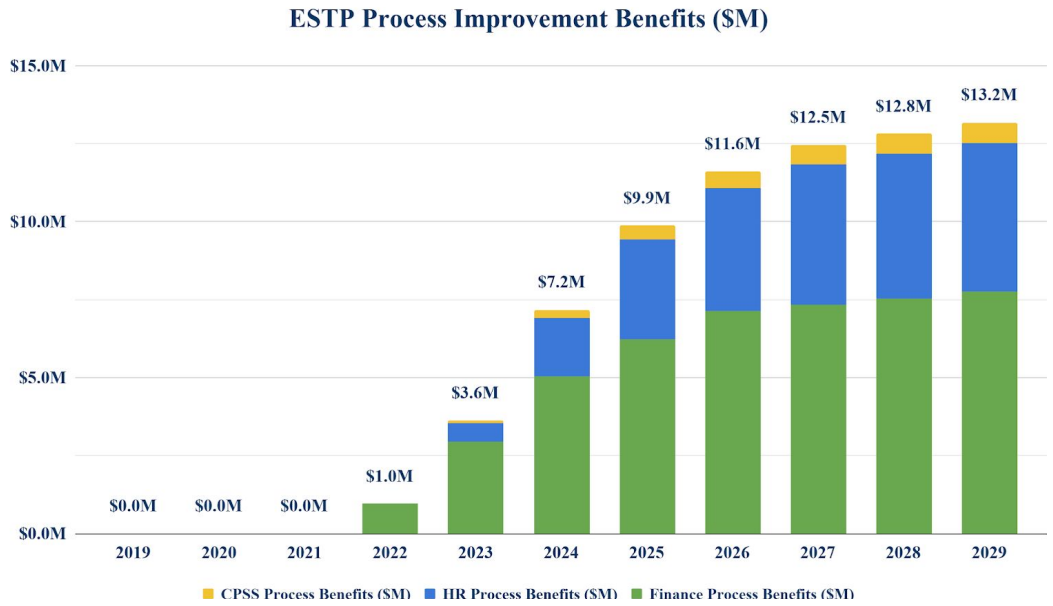


Figure 16: Process Benefits Breakdown

11.3.3.1 Benefits Estimates Breakdown

Financial breakdown by Function (HR, Finance, and CPSS) can be found in Appendix I - Cost Benefit Analysis Breakdown by Function for a Core Homogeneous ERP.

11.4 Benefits Realization Approach

The proposed approach for the City to realize the benefits outlined in this business case is integrated in the delivery of the ESTP. As a major implementation wave or stream on the roadmap is completed, the decommissioning of old technology will trigger the reduction of TCO for related technologies. As City employees are trained on new systems and the standardized processes supported by those systems, the processes will become more efficient and benefits will be realized in a gradual manner. Key assumptions related to benefit realization can be found in Appendix G - Financial Analysis Assumptions.

12 Proposed ESTP Sustainment Plan

ESTP focuses on transforming processes and technology platforms by aligning them with industry leading processes and toolsets. The City understands that, in order to continue realizing benefits from a vital investment such as ESTP, it will need to undertake additional sustainment practices.

In order to successfully sustain processes and technologies for each of the core functions, the City will need to design and define operating models and service delivery models for each of the core functions. These operating model design efforts will establish a solid foundation for the systems implementation as part of the program.

As the program focuses on best practice business process standardization and integration, the operating model design will focus on value delivery and capability development for each key functional area. Meanwhile, the service delivery model will support and guide the evolution of the system that is implemented.

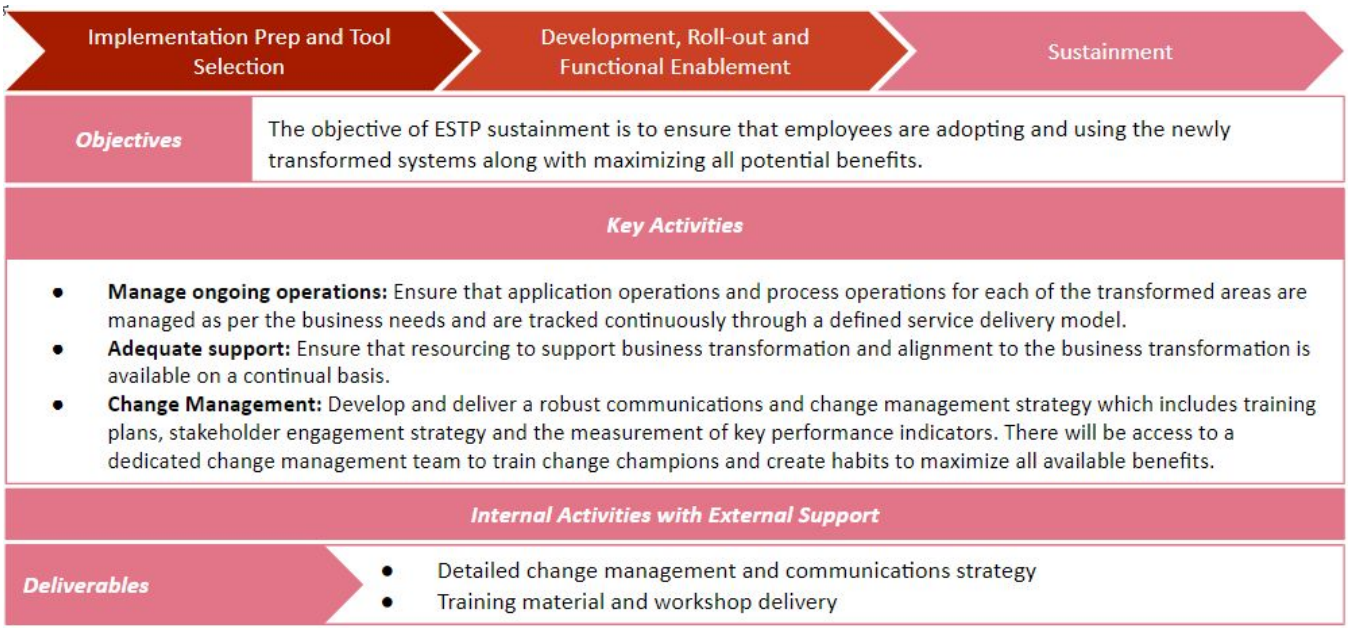


Figure 17: Proposed ESTP sustainment approach

Additionally, the City of Edmonton will establish an ERP Internal Support Center team dedicated to identifying improvement opportunities related to people, process, structure, and technology.

12.1 Continuous Improvement

As a part of the Program, Administration advises that the City develop a dedicated ERP Internal Support Center team to drive continuous improvement, enable and sustain benefit realization, and to support the long term success of the ESTP. The Support Center team will identify, prioritize, and implement improvement opportunities related to business process, people, and technology. The objectives of the continuous improvement initiative are to:

- Enhance capabilities;
- Drive value; and
- Provide guidance and governance.

These objectives will be achieved through the following activities at people, process and technology levels:

People

- Empower City of Edmonton staff with information, allowing them to react quickly to changes and issues;
- Develop and coach underperforming teams to improve capabilities;
- Maintain a focus on team performance through reinforcement of optimal behavior for all team members;
- Build a consistent and sustainable culture of performance; and
- Increase the capacity of critical teams to focus on strategic projects and improvement efforts.

Process

- Improve identification, diagnosis, and remediation of end-to-end process pain points; and
- Prioritize process improvement efforts and resource allocation.

Technology

- Provide quantifiable facts and improved data to support business cases for additional technology investments;
- Prioritize the improvement roadmap and identify the need for additional technology functionality and tools; and
- Increase user adoption and support benefit realization ahead of and following the implementation.

13 Risk and Impact Assessment

ESTP is a transformative program that will span 11 years and impact the services and operations of multiple branches. A program of such magnitude carries risks of various types and severity levels, all of which need to be proactively identified, categorized, assessed and documented. In addition, appropriate mitigation strategies need to be in place to ensure that the City can deploy these strategies in a timely manner if any of these risks threatens to occur. Apart from the risks unique to the ESTP solution recommendation,risks around the project itself include those related to the selection, implementation, and adoption of the solution.

The following risk assessment matrix was used to evaluate the severity level associated with each risk that was identified as part of the business case analysis.

Risk Assessment Matrix		***Risk Impact***		
		Modest	***Moderate***	***Severe***
Risk Likelihood	***Unlikely***	***Low***	***Low***	***Medium***
	Moderately Likely	***Low***	***Medium***	***High***
	Likely	***Medium***	***High***	***Very High***

Figure 18: Risk assessment matrix

The risk severity level - Low, Medium, High, and Very High - was assessed based on two factors, the risk impact that is represented on the horizontal axis, and risk likelihood that is represented on the vertical axis. Risk impact is the financial, timeline, or reputational impact that a risk would have on the program (and on the City) should the risk materialize. The risk impact could be:

- **Modest**: Low financial impact; or a few days of project timeline delay; or negligible reputational harm.
- **Moderate:** Moderate financial impact; or a few weeks of project timeline delay; some reputational harm.
- **Severe**: High financial (> $100,000) impact; or months of project timeline delay; or considerable reputational harm.

Risk likelihood is the probability of occurrence of a risk. The risk likelihood could be:

- **Unlikely**: The probability of occurrence of a risk is low (<0.25).
- **Moderately Likely:** The probability of occurrence of a risk is moderate (0.25-0.75)
- **Likely:** The probability of occurrence of a risk is high (>0.75)

The key risks identified for the ESTP initiative have been organized into categories - Governance, Standardization, Change Adoption, Resourcing, Technology, Data, Procurement, and Delivery. The following risk assessment map shows where each of the identified risks lies, with a label denoting the category to which the risk belongs.

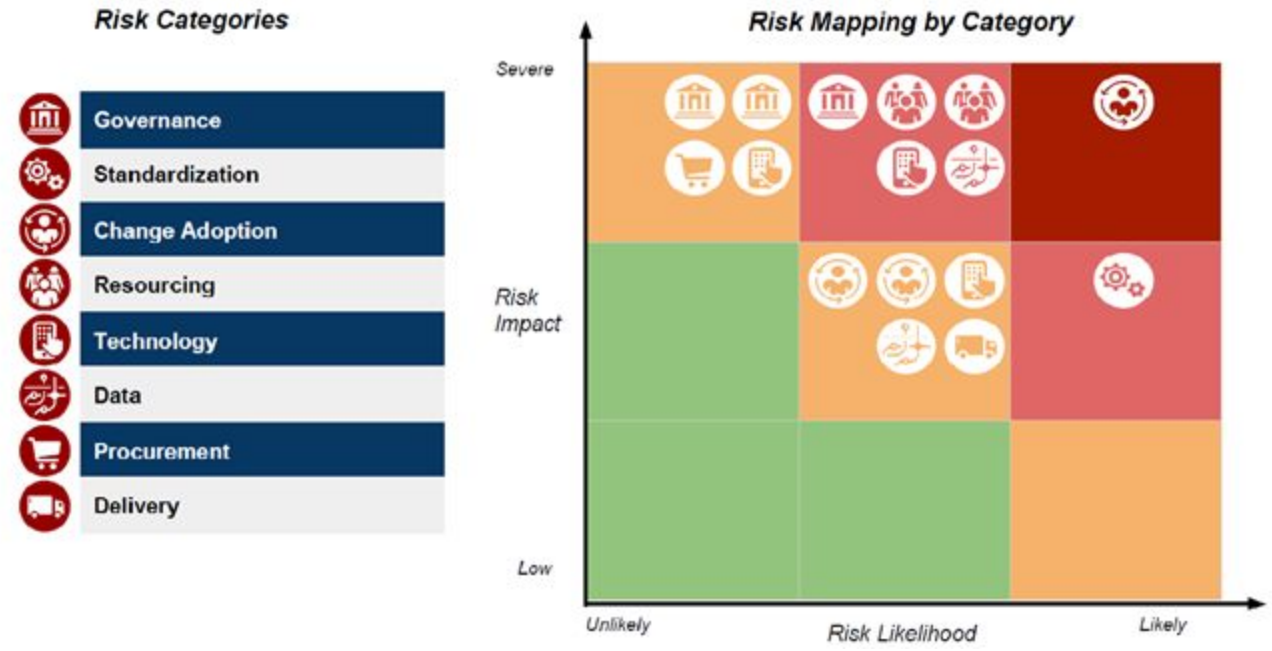


Figure 19: Risk Categories and Risk Mapping by Categories

Detailed risks around each of these categories along with proposed mitigation plans are provided in Appendix F - Risks and Mitigation Plans.

14 Appendix A – Jurisdictional Scan

Some of the national and municipal governments have enabled these new trends through systems modernization coupled with the associated business transformation. There are learnings from each of those stories that the City of Edmonton could adopt;some examples are highlighted in the table below:

Government	Direction Taken	Impact	Learnings
Government of Alberta - Service Alberta	Service Alberta is progressing towards implementation of an SAP Cloud and standardizing its core business processes including Finance, HR, and Supply Chain	Future impacts considered are: ● Better citizen and business experience with better core functional services provided by the Government including grants, management of cases, payrolls and efficient workplace management	● Process standardization needs to align with technology standards to reap maximum efficiencies as well as minimize technical customizations
City of Toronto - eCity Modernization Project	City of Toronto has gone ahead with SAP S4/Hana implementation in alignment with its eCity modernization strategy. The project has gone ahead with procurement, finance, HR, payroll and real estate modernization with a mobile strategy in view as well. The project also focuses on standardizing the processes along with technology rationalization.	Project aligns with City of Toronto's eCity strategy and is considered as a strategic project to drive the City in the direction of becoming a smarter city, enhancing citizen and business experience and providing better service value to its customers.	● Process standardization needs to align with technology standards to reap maximum efficiencies as well as minimize technical customizations ● Additionally, benefit realization is an ongoing process even after the project completion to ensure processes are further optimized on their path to maturity

Government	Direction Taken	Impact	Learnings
Government of Canada - Project Phoenix	Government of Canada implemented Oracle ERP through a project better known as *Project Phoenix.*	• Significant learnings have been realized. Changes to the project have been implemented.	• Change management is critical for any project of this magnitude to encourage adoption as well as standardize the way these systems are used • Process standardization is a critical need and must accompany technology modernization in order to reap benefits of simple & integrated processes that enhance citizen experience
State of Indiana, United States of America	State of Indiana executed Management and Performance Hub (MPH) project to create a citizen centric IT architecture with SAP S4 HANA so that the state can develop an enterprise-wide data management system that will be used to inform and define state policy.	• The project improved data quality across all data sources, aggregated that data and performed predictive analytics that informed state policy. It effectively reduced drug abuse and infant mortality rates in the state.	• Data governance and quality is critical for informed decision making. Siloed data-sets residing across disparate systems in the City obstruct this goal and have to be integrated to deliver the best value to citizens and define policy that aligns with citizen needs.
Strathcona County and City of Saskatoon	• Strathcona County and the City of Saskatoon are also moving towards a similar journey as the City of Edmonton and are considering the implementation of an ERP and process transformation. • Project is underway to look at standardizing the processes and procuring the ERP system for the transformation with a focus on process standardization and technology implementation as well while aligning the processes to standard OOTB processes. • Process standardization along with technology transformation to enhance stakeholder experience and provide a strong foundation for the City's services.		

15 Appendix B – ESTP Roadmap Prioritization Considerations

Initiative prioritization on the implementation roadmap was performed in consultation with the vendor Subject Matter Experts and the City Stakeholders. The following considerations defined the prioritization exercise:

- The City's existing SAP modules are heavily customized, therefore a greenfield (fresh) deployment of a Core Homogeneous ERP will be required for this program (as migration of existing modules would require significant clean-up);
- The general sequence of a Cloud ERP implementation begins with HR implementation waves for areas that are independent of the existing SAP on premise, such as training and development, position management that provide foundation for core HR functionalities in the next wave.
- Next on the roadmap are Finance ERP implementations waves, running along with Human Resources, Supply Chain and EAM (if included in the scope of the Core Homogeneous ERP) ERP implementations waves. Similar sequencing has been successfully followed by other Canadian municipalities.
- The number of go-lives (i.e. transitions from old to new systems) have been reduced and kept to a cadence that would cause minimal business continuity impact and provides a clear line of sight into the sunset of existing enterprise systems.
- The go-live for Human Resources ERP Wave 2.1 is relatively independent of Finance and Supply Chain Modules because these modules do not have any relative dependencies other than GL Ledger chart of accounts being moved into the new Core Homogeneous ERP solution first (required for payroll, benefits and compensation processing). Some integrations might be needed between the old Learning Management System (LMS) and the Core Homogeneous ERP's Human Capital Management (HCM) Cloud, and PeopleSoft and the Core Homogeneous ERP's Human Capital Management (HCM) Cloud in the interim state, the details for which can be finalized in the ERP solution architecture design initiative;
- Initiatives on the roadmap that depend on the completion of other initiatives appear later on the roadmap timeline (e.g., the ERP Finance modules are dependent on the implementation of a Charts of Accounts, hence the General Ledger module with the Chart of Accounts would be implemented first followed by other Finance modules);
- Some initiatives are best implemented in parallel with other initiatives (e.g., Supply Chain ERP module implementations are closely tied with Finance ERP implementations, therefore, the Supply Chain ERP modules for Inventory and Warehouse Management are implemented in parallel with Finance modules, and they go live at the same time as Finance second go-live – ERP Wave 1.1);
- The procurement window for evaluation and procurement of the ERP solution is eighteen months based on the assumption that the City will need to go to procurement for selecting the ERP vendor based on an ERP evaluation phase. The roadmap shows implementation initiatives from 2020 - 2022. Some of these initiatives may be moved to 2019 based on the City's organizational readiness, interdependencies with ongoing projects and funding availability;
- POSSE Modernization initiatives are generally considered independent of ERP Core initiatives and sequenced as a separate stream; It is expected that there may be some inter-dependencies that may be discovered during the POSSE assessment work;
- The time needed to implement technology modules and process standardization depends on internal and external resources requirements outlined in Appendix C - Resource Requirements;

- As much as possible, the Program spend for the roadmap is spread out over three years to make it easier for the City to plan and budget for the costs associated with the Program;
- The City should validate and refine the prioritization and sequencing of these initiatives with the selected vendor before commencing implementation of the Cloud ERP.

16 Appendix C – Resource Requirements

Stakeholder Group	ERP Preparation *January – June 2020* *(6 Months)*	ERP Implementation *July 2020 – Dec 2022* *(30 Months)*	Post-Implementation Sustainment *January 2023 Onwards* *(7 Years)*
City of Edmonton Leadership	• ESTP Sponsorship • ESTP Advisory Board • City of Edmonton Executive Leadership Team • Business Technology Steering Committee • Business Technology Working Group Full-Time Equivalent (FTE): 10 percent	• ESTP Sponsorship • ESTP Advisory Board • City of Edmonton Executive Leadership Team • Business Technology Steering Committee • Business Technology Working Group FTE: 5 percent	• ESTP Advisory Board • City of Edmonton Executive Leadership Team • Business Technology Working Group FTE: 5 percent
City of Edmonton Branch Leadership & Staff	• Branch Manager (BM) - Financial Services • BM - Financial Strategies and Budget • BM - Employment Services • BM - Corporate Safety & Employee Health • BM - Corporate Procurement and Supply Services • BM - Real Estate FTE: 10 percent • BM - Infrastructure Planning and Design • BM - Infrastructure Delivery • BM - Business Planning and Support • BM - Fleet and Facilities Services • BM - Parks and Roads Services • BM - Business Performance and Customer Experience • BM - Engagement • BM - Communications • BM - City Planning • BM - Corporate Strategy • BM - Development Services FTE: 2-3 percent • Manager - Communications and Engagement x 1 • Manager - Procurement x 2 FTE: 50 percent	• BM - Financial Services • BM - Financial Strategies and Budget • BM - Employment Services • BM - Corporate Safety & Employee Health • BM - Corporate Procurement and Supply Services • BM - Real Estate FTE: 10 percent • BM - Infrastructure Planning and Design • BM - Infrastructure Delivery • BM - Business Planning and Support • BM - Fleet and Facilities Services • BM - Parks and Roads Services • BM - Business Performance and Customer Experience • BM - Engagement • BM - Communications • BM - City Planning • BM - Corporate Strategy • BM - Development Services FTE: 2-3 percent • Manager - Communications and Engagement x 1 • Manager - Procurement x 1 FTE: 50 percent	• BM - Financial Services • BM - Financial Strategies and Budget • BM - Employment Services • BM - Corporate Safety & Employee Health • BM - Corporate Procurement and Supply Services • BM - Real Estate FTE: 5 percent • BM - Infrastructure Planning and Design • BM - Infrastructure Delivery • BM - Business Planning and Support • BM - Fleet and Facilities Services • BM - Parks and Roads Services • BM - Business Performance and Customer Experience • BM - Engagement • BM - Communications • BM - City Planning • BM - Corporate Strategy • BM - Development Services FTE: 2-3 percent • Manager - Communications and Engagement x 1 FTE: 5 percent

Stakeholder Group	ERP Preparation *January – June 2020 (6 Months)*	ERP Implementation *July 2020 – Dec 2022 (30 Months)*	Post-Implementation Sustainment *January 2023 Onwards (7 Years)*
OCT Leadership	• BM - OCT • Director - Technology Planning • Senior Leader - Technology Transformation • Director - Infrastructure Operations • Director - Business Solutions FTE: 10 percent • Chief Information Security Officer FTE: 25 percent	• BM - OCT • Director - Technology Planning • Senior Leader - Technology Transformation • Director - Infrastructure Operations • Director - Business Solutions FTE: 10 percent • Chief Information Security Officer FTE: 25 percent	• BM - OCT • Director - Technology Planning • Senior Leader - Technology Transformation • Director - Infrastructure Operations • Director - Business Solutions FTE: 5 percent • Chief Information Security Officer FTE: 5 percent
OCT Staff	• Enterprise Architect x 1 • Data Architect x 1 FTE: 100 percent • Manager - SAP x 1 • Manager - PeopleSoft x 1 • Manager - POSSE x 1 • Solution Architect x 1 • Security Analyst x 1 FTE: 25 percent	• Enterprise Architect x 1 • Solution Designer x 2 • Solution Architect x 2 FTE: 100 percent • Application Manager - SAP x 1 • Application Manager - PeopleSoft x 1 • Application Manager - POSSE x 1 FTE: 50 percent • Change & Release Manager x 1 • Environment Manager x 1 FTE: 50 percent • Security Analyst x 1 FTE: 25 percent	• IT Staff FTE: As needed
Core Project Teams (Internal)	• Program Manager x 1 • Project Manager x 2 • Business Analyst x 4 • Change Management x 2 FTE: 100 percent	• Program Manager x 1 • Project Manager x 4 • Business Analyst x 8 • Change Management x 2 FTE: 100 percent	• Program Manager • Project Manager • Business Analyst • Change Management FTE: As needed

Stakeholder Group	ERP Preparation *January – June 2020 (6 Months)*	ERP Implementation *July 2020 – Dec 2022 (30 Months)*	Post-Implementation Sustainment *January 2023 Onwards (7 Years)*
Core Project Teams (External)	• Consulting Leadership x 1 • Functional Consultants x 8 • Technical Consultants x 4 • Change Management Consultants x 4 FTE: 100 percent	• Consulting Leadership x 4 • Functional Consultants x 12 • Technical Consultants x 16[1] • Change Management Consultants x 4 FTE: 100 percent	• Change Management Consultants x 2 FTE: Ongoing as needed
Functional (Business) Specialists	• Business Representative - Finance x 4 • Business Representative - Human Resources x 4 • Business Representative - Health & Safety x 2 • Business Representative - CPSS x 2 • Business Representative - EAM x 4 • Business Representative - POSSE x 4 (across branches) FTE: 25 percent	• Business Representative - Finance x 4 • Business Representative - Human Resources x 6 • Business Representative - Health & Safety x 2 • Business Representative - CPSS x 2 • Business Representative - EAM x 4 • Business Representative - Permits & Licensing x 4 • Business Representative - Workflows x 4 FTE: 50 percent	• Business Representative - All Branches FTE: As needed
ERP Internal Support Center (Internal)	• N/A	• Team Lead / Manager x 1 • Project Manager x 1 • Technical and Business Analyst - Finance x 2 • Technical and Business Analyst - Human Resources x 2 • Technical and Business Analyst - Health & Safety x 1 • Technical and Business Analyst - CPSS x 2 • Technical and Business Analyst - EAM x 2 • Technical Analyst - Change and Release Management x 1 • QA Analyst x 1 • Knowledge Management Analyst x 1 • Enterprise Architect x 1 • ERP Architect x 1 Total Resources: 16 FTE: 100 percent (after ERP Internal Support Center Stand-up and resource hiring is complete, expected July-Dec 2021)	• Team Lead / Manager x 1 • Project Manager x 1 • Technical and Business Analyst - Finance x 2 • Technical and Business Analyst - Human Resources x 2 • Technical and Business Analyst - Health & Safety x 1 • Technical and Business Analyst - CPSS x 2 • Technical and Business Analyst - EAM x 2 • Technical Analyst - Change and Release Management x 1 • QA Analyst x 1 • Knowledge Management Analyst x 1 • Enterprise Architect x 1 • ERP Architect x 1 Total Resources: 16 FTE: 100 percent

[1] Quality Assurance, Data conversion team, and Developers are all assumed to be external resources.

17 Appendix D – Mandates and Responsibilities

Committee	Mandate	Responsibilities
Executive Leadership Team	Provide strategic vision and direction to the engagement and aligning expectations for the City Council	• Provide guidance from the perspective of the City of Edmonton's mandates and responsibilities; • Understand the needs of the ESTP and work to provide key messages to the employees of the City of Edmonton; • Provides context to the ESTP Advisory Board
Business Technology Steering Committee	The Business Technology Steering Committee is responsible for high-level oversight and guidance to the Business Technology Working Group and represent the ESTP. It will have delegated authority to govern the ESTP based on clear parameters and processes that are accepted by the participants.	• Approves all changes to program scope; • Provides the highest-level authority and guidance for the EST Program; • Focuses on the City of Edmonton mandates holistically and determines priorities; • Represents the interests of ESTP stakeholders in the shared ESTP environment; • Provides endorsement and approval for elements requiring executive-level support; • Provides guidance and direction to the ESTP Working Committee as required; • Functions as EST Program Champions; • Resolves escalated issues from the ESTP Working Committee as required
Business Technology Working Group	The Business Technology Working Group is responsible for providing oversight and guidance over the EST Program. The Committee has the delegated authority to govern the EST Program within clear parameters and processes	• Provides recommendations to ESTP Steering Committee for strategic level ESTP decisions; • Responsible for the oversight and successful outcome of the ESTP; • Champions an 'Integrated City' approach by leveraging the ESTP to work in common ways with standardized business processes; • Resolves disputes and issues escalated by the EST Program and/or disputes and issues from subordinate groups; • Reviews and drives consensus on decision requests
ESTP Project Advisory Board	The Project Advisory board's mandate is to provide senior operations level advice, decision support and problem solving to the ESTP Working Team. The ESTP Project Advisory Group proves senior level representation on and across the ESP business function is responsible mandate is to provide senior operations level advice and decision support to ensure an integrated and coordinated approach to solving project issues.	• Contributes to and supports the ESTP tactical and strategic plans; • Understands and interprets the strategic direction provided by the ESTP Working Committee, and establishes priorities based on the direction; • Endorses funding requests for ESTP scope changes or change requests; • Resolves issues, risks and disputes within the Program Team and/or escalated by program manager;
Working Team	The Working Team is responsible for ensuring alignment with the strategic initiatives. They are responsible for ensuring that the project direction is met and are responsible for the implementation. They ensure that appropriate issues are escalated to the operational team and working committee.	• Implements activities that are necessary for transformation in an agile delivery model • Follows the strategic direction that is set by the Operations committee • Escalates issues, risks and disputes within the Program team to the Working and Operations committee

18 Appendix E – High-level Initiative Overviews

18.1 ERP Core Initiatives

ERP Evaluation

Initiative Description

ERP Evaluation will be required to ascertain the best core homogenous ERP that fits into the City's architecture landscape. Activities include:

- ERP requirements from core functions including Finance, Human Resources, Corporate Procurement and Supply Chain, and EAM (Real Estate, Fleet & Facility, Parks and Roads) branches at the City
- Requirements analysis and consolidation by the project resources
- Architectural evaluation and cost evaluation of ERP vendors and contracts
- This initiative will be followed by ERP Selection

Dependency on other Initiatives

- None identified

Technology Implementation

- Not Applicable

Process Standardization

- Not Applicable

Costing Requirements

- **Internal:** $400-600K
- **External:** $250-350K (~12 weeks)

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• Finance x 4 (10%) • HR x 4 (10%) • EH&S x 2 (10%) • CPSS x 2 (10%) • EAM x 3 (10%)	• NA	• NA	• NA	• PM x 1 (50%) • BA x 2 (100%) • Enterprise Architect x 1 (10%) • OCT Operations Lead x 1 (10%) • Security Lead x 1 (5%) • Security Analyst x 1 (5%)	• Project Manager (PM) x 1 (100%) - 12 weeks • Business Analyst (BA) x 2 (100%) - 12 weeks

Initiative Timeline	2019				2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (48 weeks)												

ERP Procurement/Selection

Initiative Description

ERP Selection will be required to select the vendor(s) who will be responsible for the design, configuration and implementation of the ERP solution. Activities include:

- An regular procurement process where an RFP is written to incorporate the business requirements, and inputs are consolidated from various representative on the procurement selection team
- Evaluation criteria definition with inputs from the selection team and/or other standard criteria followed by the City for its procurement processes
- Selection of the vendor based on the criteria outlined
- Negotiation details related to timelines, resourcing and pricing, and finalizing the contract
- Procurement of ERP licenses post contract negotiations (if needed)

Dependency on other Initiatives

- ERP Evaluation Initiative

Technology Implementation

- Not Applicable

Process Standardization

- Not Applicable

Costing Requirements

- **Internal:** $300-400K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• Finance x 2 (10%) • HR x 2 (10%) • EH&S x 1 (10%) • CPSS x 1 (10%) • EAM x 1 (10%)	• NA	• NA	• NA	• PM x 1 (20%) • BA x 1 (50%) • CPSS Staff x 2 (50%) • Enterprise Architect x 1 (10%) • OCT Operations Lead x 1 (10%) • Security Lead x 1 (5%) • Security Analyst x 1 (5%)	• NA

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (24 weeks)												

ERP Data Clean-up

Initiative Description

ERP Data Clean-up should be performed to ensure that the existing ERP data currently residing in the on-premise SAP and PeopleSoft systems is ready for use (wherever needed) in the new Cloud ERP. Activities include:

- Identifying data model required in the new ERP and map core data elements (master data) that will be required to move to the new ERP
- Converting / preparing data elements into the right format for the new data model - migrate using automated migration paths / some manual efforts may be needed
- Follow industry standards for data clean-up prior to out-of-the-box ERP implementations

Dependency on other Initiatives

- None identified

Technology Implementation

- Not Applicable

Process Standardization

- Not Applicable

Costing Requirements

- **Internal:** $20-30K
- **External:** $500-750K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• NA	• NA	• OCT Solution Architect X 1 (50%)	• Data Management Lead x (100%) • Data Analyst x 2 (100%) • QA x 1 (100%)	• PM x 1 (20%) • OCT Operations Lead x 1 (10%)	• Project Manager x 1 (100%)

Initiative Timeline	2019				2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (12 weeks)												

ERP Solution Architecture

Initiative Description	Dependency on other Initiatives
ERP Solution Architecture will be required for the architectural design of the future state ERP solution and its key interactions with other systems such as GIS, Tririga, CRM through the Systems Integration Layer (SIL). The solution architecture for these major systems (ERP and other major systems) should be designed to ensure that the City's current (e.g. well integrated systems for reporting) and possible future needs (e.g. systems scalability, Identity and Access Management (IAM) implementation) are incorporated at the onset from an architecture standpoint.	• None identified

Technology Implementation	Process Standardization	Costing Requirements
• Not Applicable	• Not Applicable	• **Internal:** $8-12K • **External:** $60-80K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• NA	• NA	• Solution Architect x 1 (20%)	• Solution Architect x 1 (100%)	• Enterprise Architect x 1 (10%)	• NA

Initiative Timeline	2019				2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (12 weeks)												

Systems Integration Layer (SIL) Evaluation

Initiative Description	Dependency on other Initiatives
SIL Evaluation will be required to the best fit systems integration solution that fits into the City's architecture landscape. Activities include: • SIL requirements from technical and architecture resources at the City. • Requirements analysis and consolidation by the project resources • Evaluation of cost and benefits for SIL vendors (with possible demos) • This initiative will be followed by SIL Selection	• None identified

Technology Implementation	Process Standardization	Costing Requirements
• Not Applicable	• Not Applicable	• **Internal:** $30-50K • **External:** $130-180K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• NA	• NA	• NA	• NA	• PM x 1 (50%) • BA x 1 (50%) • Enterprise Architect x 1 (10%) • OCT Operations Lead x 1 (10%) • Security Lead x 1 (5%) • Security Analyst x 1 (5%)	• Project Manager (PM) x 1 (50%) • Business Analyst (BA) x 1 (100%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (12 weeks)												

Systems Integration Layer (SIL) Procurement/Selection

Initiative Description

SIL Selection will be required to select the vendor who will be the provider of the SIL solution. Activities include:

- An regular procurement process where an RFP is written to incorporate the technical requirements, and inputs are consolidated from various representative on the procurement selection team
- Evaluation criteria definition with inputs from the selection team and/or other standard criteria followed by the City for its procurement processes
- Selection of the vendor based on the criteria outlined
- Negotiation details related to timelines, resourcing and pricing, and finalizing the contract
- Procurement of SIL licenses post contract negotiations (if needed)

Dependency on other Initiatives

- SIL Evaluation Initiative

Technology Implementation

- Not Applicable

Process Standardization

- Not Applicable

Costing Requirements

- **Internal**: $100-120K

Resource Requirements

Process Resources

Internal	External
• NA	• NA

Technology Resources

Internal	External
• NA	• NA

Program Resources

Internal	External
• PM x 1 (20%) • BA x 1 (50%) • CPSS Staff x 2 (25%) • Enterprise Architect x 1 (10%) • OCT Operations Lead x 1 (10%) • Security Lead x 1 (5%) • Security Analyst x 1 (5%)	• NA

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (24 weeks)												

ERP Wave 1.1 - Finance

Initiative Description

ERP Wave 1.1 - Finance will be the first major ERP wave required to implement the new Cloud ERP technology and related process standardization for Finance functions. Activities include:

- Technology implementation for General Ledger, Inventory Management (Treasury), Accounts Receivable, Accounts Payable, Capital and Operating Budget, Funds Management, Inventory Management, Sales & Distribution, and Forecasting & Reporting on the Core Homogenous Cloud ERP Finance modules
- Standardization of processes related to the above functions within the Finance Branches
- Future state organization structure and operating model design (including governance model design) to feed into the overall operating model for the two Finance branches

Dependency on other Initiatives

- ERP Selection
- ERP Data Clean-up
- ERP Solution Architecture

Technology Implementation

- OOTB implementation, data conversion, cleanup and migration, and go live of ERP modules for:
  - General Ledger
  - Treasury
  - AR and AP
  - Capital & Operating Budget
  - Fund Management
  - Inventory Management
  - Sales & Distribution
  - Forecasting & Reporting

Process Standardization

- Implement vendor provided standard processes for all Finance functions (modules) defined in the technology implementation box
- Standardize processes till the L5 level
- Future org structure and operating model design

Costing Requirements

- **Internal**: $600-800K
- **External**: $7000-8500K

Resource Requirements

Process Resources

Internal	External
• Process Owner x 2 (25%) • Business Representative x 4 (50%)	• Functional Business Analyst x 4 (50%)

Technology Resources

Internal	External
• Solution Designer x 1 (20%) • Solution Architect x 1 (40%) • Change/Release Lead x 1 (10%) • Environment Mngr x 1 (10%)	• Technical Lead x 4 (100%) • Tech Analyst x 4 (100%) • Data Analyst x 1 (100%) • QA Lead x 1 (100%) • QA Analyst x 2 (50%)

Program Resources

Internal	External
• Leadership – OCT and Finance x 8 (2%) • OCT Ops Lead x 1 (20%) • EA x 1 (20%) • PM x 1 (40%) • Security Lead x1 (10%) • Security Analyst x1 (10%)	• Leadership x 2 (10%) • Project Manager x 1 (100%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (60 weeks)												

Finance Stabilize and Adopt Wave

Initiative Description

Finance Stabilize and Adopt wave will be required after the implementation of all Finance ERP modules to ensure that the product is stable and working as intended.
Any technical changes required to the product will be incorporated in this wave.

Dependency on other Initiatives

- ERP Selection
- ERP Data Clean-up
- ERP Solution Architecture
- ERP Wave 1.1 - Finance

Technology Implementation

- Stabilization and adoption of all Finance Cloud ERP modules after implementation and go live

Process Standardization

- NA

Costing Requirements

- **External**: $400-500K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• NA	• NA	• NA	• Tech Analyst x 4 (100%)	• NA	• Project Manager x 1 (10%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (12 weeks)												

Systems Integration Layer (SIL) Wave 1 – ERP Finance Integrations

Initiative Description

SIL Wave 1 – ERP Finance Integrations will be the first major wave required to integrate between the ERP and other ERP feeder applications at the City. Activities include:

- Defining the scope of feeder applications for which integrations would be required to the ERP Finance modules
- Designing integration details such as (e.g. API architecture, detailed API design) to enable the integrations between systems
- Development, testing, and deployment of the integrations

Dependency on other Initiatives

- ERP Selection
- ERP Data Clean-up
- ERP Solution Architecture
- SIL Evaluation and Procurement

Technology Implementation

- ERP feeder systems and Finance modules APIs architecture
- Detailed API design for data exchange
- Development, testing and deployment integrations to feeder applications using the SIL platform

Process Standardization

- NA

Costing Requirements

- **Internal**: $110-150K
- **External**: $600-700K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• NA	• NA	• OCT Ops Lead x 1 (10%) • EA x 1 (10%) • Solution Designer x 1 (20%) • Solution Architect x 1 (20%) • Change/Release Lead x 1 (5%) • Environment Mngr x 1 (5%)	• Technical Lead x 1 (20%) • Tech Analyst x 2 (50%) • QA Lead x 1 (33%) • QA Analyst x 1 (33%)	• PM x 1 (20%) • Security Lead x 1 (5%) • Security Analyst x 1 (5%)	• Leadership x 2 (5%) • Project Manager x 1 (20%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (48 weeks)												

ERP Wave 2.1 – Human Resources

Initiative Description

ERP Wave 2.1 - Human Resources will be the first major ERP wave required to implement the new Cloud ERP technology and related process standardization for Human Resources functions. Activities include:

- Configuration, testing and deployment of Core Homogenous ERP Cloud ERP modules for HR functions – Training & Development, Position Management, and Workforce Administration – based on inputs from HR business requirements documentation and business representatives
- Standardization of processes related to the above functions within the Human Resources branch
- Future state organization structures and operating model design (including governance model design), to feed into the overall operating model for the Human Resources branch

Dependency on other Initiatives

- ERP Selection
- ERP Data Clean-up
- ERP Solution Architecture

Technology Implementation

- OOTB implementation, data conversion, cleanup and migration, and go live of ERP modules for:
  - Training & Development
  - Position Management
  - Workforce Administration

Process Standardization

- Implement vendor provided standard processes for the Human Resources functions (modules) defined in the technology implementation box
- Standardize processes till the L5 level
- Future org structures and operating model design

Costing Requirements

- **Internal**: $800-1000K
- **External**: $2800-3500K

Resource Requirements

Process Resources

Internal	External
• Process Owner x 4 (25%) • Business Representative x 8 (50%)	• Functional Business Analyst x 8 (50%)

Technology Resources

Internal	External
• Solution Designer x 1 (100%) • Solution Architect x 1 (80%) • Change/Release Lead x 1 (20%) • Environment Mngr x 1 (20%)	• Technical Lead x 3 (20%) • Tech Analyst x 3 (50%) • Data Analyst x 2 (50%) • QA Lead x 1 (50%) • QA Analyst x 2 (50%)

Program Resources

Internal	External
• Leadership – OCT and HR x 6 (2%) • PM x 1 (80%) • OCT Ops Lead x 1 (40%) • EA x 1 (40%) • Security Lead x1 (10%) • Security Analyst x1 (10%)	• Leadership x 2 (10%) • Project Manager x 1 (100%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (40 weeks)												

ERP Wave 2.2 – Human Resources

Initiative Description

ERP Wave 2.2 – Human Resources will be the second major ERP wave required to implement the new Cloud ERP technology and related process standardization for HR functions. Activities include:

- Configuration, testing and deployment of Core Homogenous Cloud ERP modules for HR functions – Compensation, Payroll, Pensions & Benefits, Time & Attendance Management, Performance Management, Talent & Succession Management – based on inputs from HR business requirements documentation and business representatives
- Standardization of processes related to the above functions within the Human Resources branch
- Future state operating model design, including for the governance model, to feed into the overall operating model for the Human Resources branch

Dependency on other Initiatives

- ERP Selection
- ERP Data Clean-up
- ERP Solution Architecture
- ERP Wave 2.1 – Human Resources

Technology Implementation

- OOTB implementation, data conversion, cleanup and migration, and go live of ERP modules for:
  - Compensation, Payroll, Pensions & Benefits
  - Time & Attendance Management
  - Performance Management
  - Talent & Succession Management

Process Standardization

- Implement vendor provided standard processes for the Human Resources functions (modules) defined in the technology implementation box
- Standardize processes till the L5 level
- Future operating and governance model design

Costing Requirements

- **Internal**: $700-900K
- **External**: $4000-5000K

Resource Requirements

Process Resources

Internal	External
• Process Owner x 4 (20%) • Business Representative x 8 (40%)	• Functional Business Analyst x 8 (50%)

Technology Resources

Internal	External
• Solution Designer x 1 (100%) • Solution Architect x 1 (80%) • Change/Release Lead x 1 (20%) • Environment Mngr x 1 (20%)	• Technical Lead x 4 (50%) • Tech Analyst x 4 (100%) • Data Analyst x 2 (50%) • QA Lead x 1 (50%) • QA Analyst x 2 (50%)

Program Resources

Internal	External
• Leadership – OCT and HR x 8 (2%) • OCT Ops Lead x 1 (20%) • EA x 1 (20%) • PM x 1 (50%) • Security Lead x1 (10%) • Security Analyst x1 (10%)	• Leadership x 2 (10%) • Project Manager x 1 (100%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (44 weeks)												

ERP Wave 2.3 – Human Resources and Employee Health & Safety (EH&S)

Initiative Description

ERP Wave 2.3 - HR and EH&S will be the final major ERP wave required to implement the new Cloud ERP technology and related process standardization for HR and EH&S functions. Activities include:

- Configuration, testing and deployment of Core Homogenous Cloud ERP modules for HR and EH&S functions - Incident, Investigations, and Case Management, Attraction & Recruitment Management, Onboarding & Offboarding Management, Disability Management, and Occupational Health & Safety Management - based on inputs from HR and EH&S business requirements documentation and business representatives
- Standardization of processes related to the above functions within the Human Resources and EH&S branches
- Future state operating model design, including for the governance model, to feed into the overall operating model for the Human Resources branch

Dependency on other Initiatives

- ERP Selection
- ERP Data Clean-up
- ERP Solution Architecture
- ERP Wave 2.1 – Human Resources
- ERP Wave 2.2 – Human Resources

Technology Implementation

- OOTB implementation, data conversion, cleanup and migration, and go live of ERP modules for:
  - Incident, Investigations, and Case Management
  - Attraction & Recruitment Management
  - Onboarding & Offboarding Management
  - Disability Management
  - Occupational Health & Safety Mgmt.

Process Standardization

- Implement vendor provided standard processes for the Human Resources functions (modules) defined in the technology implementation box
- Standardize processes till the L5 level
- Future operating and governance model design

Costing Requirements

- **Internal**: $1100-1500K
- **External**: $3600-4500K

Resource Requirements

Process Resources

Internal	External
• Process Owner x 5 (25%) • Business Representative x 10 (50%)	• Functional Business Analyst x 10 (50%)

Technology Resources

Internal	External
• Solution Designer x 1 (100%) • Solution Architect x 1 (80%) • Change/Release Lead x 1 (20%) • Environment Mngr x 1 (20%)	• Technical Lead x 4 (50%) • Tech Analyst x 4 (100%) • Data Analyst x 2 (50%) • QA Lead x 1 (50%) • QA Analyst x 2 (50%)

Program Resources

Internal	External
• Leadership – OCT and HR/EH&S x 10 (2%) • OCT Ops Lead x 1 (40%) • EA x 1 (40%) • PM x 1 (100%) • Security Lead x 1 (10%) • Security Analyst x 1 (10%)	• Leadership x 2 (10%) • Project Manager x 1 (100%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (44 weeks)												

HR and EH&S Stabilize and Adopt Waves

Initiative Description

Three HR and EH&S Stabilize and Adopt waves will be required after the implementation of each HR and/or EH&S ERP modules to ensure that the product is stable and working as intended.
Any technical changes required to the product will be incorporated in this wave.

Dependency on other Initiatives

- ERP Selection
- ERP Data Clean-up
- ERP Solution Architecture
- ERP Wave 2.1, 2.2 and 2.3 (HR and EH&S ERP Waves)

Technology Implementation

- Stabilization and adoption of HR and EH&S Cloud ERP modules after implementation and go live

Process Standardization

- NA

Costing Requirements

- **External**: $150-200K for Wave 1; $450-550K for Wave 2; and $220-300K for Wave 3

Resource Requirements

Process Resources

Internal	External
• NA	• NA

Technology Resources

Internal	External
• NA	• Wave 1 - Tech Analyst x 1.5 (100%) • Wave 2 - Tech Analyst x 4.5 (100%) • Wave 3 - Tech Analyst x 2.25 (100%)

Program Resources

Internal	External
• NA	• Wave 1 - PM x 1 (10%) • Wave 2 - PM x 1 (10%) • Wave 3 - PM x 1 (10%)

Initiative Timeline	2021				2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (12 weeks each)		Wave 1				Wave 2				Wave 3		

SIL Wave 2 – ERP HR and EH&S Integrations

Initiative Description

SIL Wave 2 – ERP HR and EH&S Integrations will be the second major wave required to integrate ERP HR and EH&S modules and other ERP feeder applications at the City. Activities include:

- Defining the scope of feeder applications for which integrations would be required to the ERP HR and EH&S modules
- Designing integration details such as (e.g. API architecture, detailed API design) to enable the integrations between systems
- Development, testing, and deployment of the integrations

Dependency on other Initiatives

- ERP Selection
- ERP Data Clean-up
- ERP Solution Architecture
- SIL Evaluation and Procurement

Technology Implementation

- ERP feeder systems and ERP HR and EH&S modules APIs architecture
- Detailed API design for data exchange
- Development, testing and deployment integrations to feeder applications using the SIL platform

Process Standardization

- NA

Costing Requirements

- **Internal:** $170-250K
- **External:** $1100-1600K

Resource Requirements

Process Resources

Internal	External
• NA	• NA

Technology Resources

Internal	External
• OCT Ops Lead x 1 (10%) • EA x 1 (10%) • Solution Designer x 1 (20%) • Solution Architect x 1 (20%) • Change/Release Lead x 1 (5%) • Environment Mngr x 1 (5%)	• Technical Lead x 1 (20%) • Tech Analyst x 2 (50%) • QA Lead x 1 (33%) • QA Analyst x 1 (33%)

Program Resources

Internal	External
• PM x 1 (20%) • Security Lead x 1 (5%) • Security Analyst x 1 (5%)	• Leadership x 2 (5%) • Project Manager x 1 (20%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (78 weeks)												

ERP Wave 3 – Supply Chain Management (SCM)

Initiative Description

ERP Wave 3 – SCM will be the only ERP wave required to implement Cloud ERP and related process standardization for the Supply Chain (CPSS) functions, except the ones already covered by SAP Ariba implementation. Activities include:

- Configuration, testing and deployment of technology solution for Inventory and Warehouse Management on the Core Homogenous Cloud ERP Supply Chain modules
- Standardization of processes related to the above functions within the CPSS branch
- Future state operating model design, including for the governance model, to feed into the overall operating model for the CPSS branch

Dependency on other Initiatives

- ERP Selection
- ERP Data Clean-up
- ERP Solution Architecture

Technology Implementation

- OOTB implementation, data conversion, cleanup and migration, and go live of ERP modules for:
  - Inventory Management
  - Warehouse Management

Process Standardization

- Implement vendor provided standard processes for the CPSS functions (modules) defined in the technology implementation box
- Standardize processes till the L5 level
- Future operating and governance model design

Costing Requirements

- **Internal**: $120-180K
- **External**: $800-1200K

Resource Requirements

Process Resources

Internal	External
• Process Owner x 2 (10%) • Business Representative x 2 (50%)	• Functional Business Analyst x 2 (50%)

Technology Resources

Internal	External
• Solution Designer x 1 (40%) • Solution Architect x 1 (20%) • Change/Release Lead x 1 (5%) • Environment Mngr x 1 (5%)	• Technical Lead x 1 (20%) • Tech Analyst x 3 (50%) • Data Analyst x 1 (20%) • QA Lead x 1 (10%) • QA Analyst x 1 (50%)

Program Resources

Internal	External
• Leadership – OCT and CPSS x 5 (2%) • PM x 1 (20%) • OCT Ops Lead x 1 (10%) • EA x 1 (10%) • Security Lead x 1 (5%) • Security Analyst x 1 (5%)	• Leadership x 2 (5%) • Project Manager x 1 (50%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (40 weeks)												

SCM Stabilize and Adopt Wave

Initiative Description	Dependency on other Initiatives
SCM Stabilize and Adopt wave will be required after the implementation of inventory and warehouse management ERP modules to ensure that the product is stable and working as intended. Any technical changes required to the product will be incorporated in this wave.	•ERP Selection •ERP Data Clean-up •ERP Solution Architecture •ERP Wave 3 - SCM

Technology Implementation	Process Standardization	Costing Requirements
•Stabilization and adoption of inventory and warehouse management ERP modules after implementation and go live	•NA	•**External**: $150-200K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• NA	• NA	• NA	• Tech Analyst x 1.5 (100%)	• NA	• Project Manager x 1 (10%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (12 weeks)												

SIL Wave 3 – ERP SCM Integrations

Initiative Description	Dependency on other Initiatives
SIL Wave 3 – ERP SCM Integrations will be the first major wave required to integrate ERP Supply Chain modules, SAP Ariba, and other ERP feeder applications at the City. Activities include: •Defining the scope of feeder applications for which integrations would be required to the ERP Supply Chain modules •Designing integration details such as (e.g. API architecture, detailed API design) to enable the integrations between systems •Development, testing, and deployment of the integrations	•ERP Selection •ERP Data Clean-up •ERP Solution Architecture •SIL Evaluation and Procurement

Technology Implementation	Process Standardization	Costing Requirements
•ERP feeder systems and ERP SCM (and SAP Ariba) modules APIs architecture •Detailed API design for data exchange •Development, testing and deployment integrations to feeder applications using the SIL platform	•NA	•**Internal**: $70-90K •**External**: $350-450K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• NA	• NA	• OCT Ops Lead x 1 (10%) • EA x 1 (10%) • Solution Designer x 1 (20%) • Solution Architect x 1 (20%) • Change/Release Lead x 1 (5%) • Environment Mngr x 1 (5%)	• Technical Lead x 1 (20%) • Tech Analyst x 2 (50%) • QA Lead x 1 (33%) • QA Analyst x 1 (33%)	• PM x 1 (20%) • Security Lead x 1 (5%) • Security Analyst x 1 (5%)	• Leadership x 2 (5%) • Project Manager x 1 (20%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (30 weeks)												

18.2 EAM Rationalization and Rollout Initiatives

EAM Governance Set-up

Initiative Description

The rationalization and preparation of Enterprise Asset Management at the City will require this initiative in designing, formalizing and operationalizing governance mechanisms between Real Estate, Fleet and Facilities, and Parks & Roads business branches and other Corporate branches at the City. Activities include:
- A detailed assessment of existing EAM governance mechanisms at the City;
- Designing EAM governance model for City aligned with leading industry practice; and
- Documenting business requirements for considerations in EAM tool rationalization

Dependency on other Initiatives

- ERP Evaluation Initiative

Technology Implementation

- Not Applicable

Process Standardization

- Not Applicable

Costing Requirements

- **Internal:** $10-12K
- **External:** $80-110K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• NA	• NA	• NA	• NA	• PM x 1 (10%)	• PM x 1 (10%) • Business Analyst x 1 (20%) • OCM Analyst x 1 (20%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (24 weeks)												

EAM Tool Rationalization

Initiative Description

EAM Tool Rationalization that will include necessary analysis across the branches that consume and provide asset management services (including Fleet & Facilities, Parks & Roads, and Real Estate) to provide the City with a recommendation on:
- whether they should keep their Operational Asset Management capabilities in a separate system of record (i.e. IBM Tririga) which would require them to configure and use that system for Financial Asset Management and creates a need for integrations with Core Homogenous Cloud ERP; or
- whether they should move their Operational Asset Management capabilities into Core ERP (i.e.ERP RE, ERP PM) which would require them to configure and use ERP platform for Financial Asset Management and does not require additional integrations; (Note: The City should use same systems (Core ERP Cloud or IBM Tririga) for both Financial and Operational Asset Management Capabilities to avoid confusion on the system of record for Asset Management); and
- identify the best-fit system for Integrated Workplace Management (IWMS) capabilities.

Dependency on other Initiatives

- ERP Evaluation Initiative
- EAM Governance Set-up

Technology Implementation

- Not Applicable

Process Standardization

- Not Applicable

Costing Requirements

- **Internal:** $60 - 80K
- **External:** $350 - 450K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• Process Owner - EAM x 3 (10%) • Senior Business Rep - EAM x 3 (20%)	• EAM Process Lead x 1 (50%)	• NA	• EAM Technology Lead x 1 (50%)	• PM x 1 (20%) • BA x 1 (100%) • OCT Ops Lead x 1 (10%) • EA x 1 (10%)	• PM x 1 (100%) • BA x 1 (100%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (24 weeks)												

ERP Wave 4.1 – EAM Rollout

Initiative Description

ERP Wave 4.1 – EAM Rollout will be the fourth major ERP wave required to implement the new Cloud ERP technology and related process standardization. Activities include:

- Technology implementation for Project and Portfolio Management (PPM); EAM Asset (Portfolio) Management, Asset Design and Procurement, and Asset Disposal on Core Homogenous Cloud ERP, or a different tool, depending on the results of the EAM Tool Rationalization initiative;
- Process standardization, and service delivery and governance model design will occur in parallel for those capabilities (functions) at the in-scope branches (Real Estate, Fleet & Facilities, and Parks & Roads); and
- Future state operating model design following from for the governance set-up will be implemented along with policy design and process standardization.

Dependency on other Initiatives

- EAM Governance Set-up
- EAM Tool Rationalization
- ERP Solution Architecture

Technology Implementation

- OOTB implementation, data migration and clean-up, and go live of ERP modules for:
  - PPM
  - Asset Design & Procurement
  - Asset Management
  - Asset Disposal

Process Standardization

- Implement vendor provided standard processes for PPM, Asset Management, Asset Design & Procurement, and Asset Disposal processes

Costing Requirements

- **Internal**: $240-260K
- **External**: $900-1200K

Resource Requirements

Process Resources

Internal	External
• Process Owner x 4 (10%) • Business Representative x 8 (25%)	• Process Lead x 1 (25%) • Functional Business Analyst x 2 (50%) • Functional Business SME x 1 (100%)

Technology Resources

Internal	External
• Change/Release Lead X 1 (5%) • Environment Mngr x 1 (5%) • Solution Designer x 1 (10%) • Solution Designer x 3 (25%) • Solution Architect x 2 (10%) • Solution Architect x 2 (20%)	• Technical Lead x 2 (25%) • BA x 6 (33%) • Data Analyst x 4 (25%) • QA Lead x 2 (25%) • QA Analyst x 2 (25%)

Program Resources

Internal	External
• PM x 1 (20%) • OCT Ops Lead x 1 (10%) • Enterprise Architect x 1 (10%)	• Leadership x 2 (5%) • PM x 1 (50%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (36 weeks)												

ERP Wave 4.2 – EAM Rollout

Initiative Description

ERP Wave 4.2 – EAM Rollout will be the fourth major ERP wave required to implement the new Cloud ERP technology and related process standardization. Activities include:

- Technology implementation for Work Management, Asset Management and Asset Operations on the selected system depending on the results of the EAM Tool Rationalization initiative;
- Process standardization, and service delivery and governance model design will occur in parallel for those capabilities (functions) at the in-scope branches (Real Estate, Fleet & Facilities, and Parks & Roads); and
- Future state operating model design following from for the governance set-up will be implemented along with policy design and process standardization.

Dependency on other Initiatives

- EAM Governance Set-up
- EAM Tool Rationalization
- ERP Solution Architecture
- ERP Wave 4.1 – EAM Rollout

Technology Implementation

- OOTB implementation, data migration and clean-up, and go live of ERP modules for:
  - Work Management
  - Asset Operations
  - Asset Maintenance

Process Standardization

- Implement vendor provided standard processes for Work Management, Asset Maintenance and Asset Operations

Costing Requirements

- **Internal**: $260-300K
- **External**: $1200-1500K

Resource Requirements

Process Resources

Internal	External
• Process Owner x 6 (25%) • Business Representative x 3 (10%)	• Functional Business Analyst x 2 (50%) • Functional Business Analyst x 1 (100%)

Technology Resources

Internal	External
• Change/Release Lead X 1 (5%) • Environment Mngr x 1 (5%) • Solution Designer x 3 (33%) • Solution Architect x 1 (20%)	• Technical Lead x 2 (25%) • BA x 6 (33%) • Data Analyst x 3 (30%) • QA Lead x 3 (33%) • QA Analyst x 3 (33%)

Program Resources

Internal	External
• PM x 1 (20%) • OCT Ops Lead x 1 (10%) • Enterprise Architect x 1 (10%)	• Leadership x 2 (5%) • PM x 1 (75%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (30 weeks)												

EAM Stabilize and Adopt Waves

Initiative Description

EAM Stabilize and Adopt waves will be required after the implementation of all EAM modules to ensure that the product is stable and working as intended.
Any technical changes required to the product will be incorporated in this wave.

Dependency on other Initiatives

- ERP Selection
- ERP Data Clean-up
- ERP Solution Architecture
- ERP Wave 4.1 and 4.2 (EAM Rollout)

Technology Implementation

- Stabilization and adoption of all EAM modules after implementation and go live

Process Standardization

- NA

Costing Requirements

- **External**: $400-480K for Wave 1; $400-480K for Wave 2

Resource Requirements

Process Resources

Internal	External
• NA	• NA

Technology Resources

Internal	External
• NA	• Wave 1 - Tech Analyst x 2 (100%) • Wave 2 - Tech Analyst x 3 (100%)

Program Resources

Internal	External
• NA	• Wave 1 - PM x 1 (10%) • Wave 2 - PM x 1 (10%)

Initiative Timeline	2021				2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (12 weeks each)						Wave 1		Wave 2				

SIL Wave 5 – ERP EAM Integrations

Initiative Description

SIL Wave 5 – ERP EAM Integrations will be the fifth major wave required to integrate EAM modules rolled out in ERP Wave 4.1 and 4.2 to the Core ERP and other feeder applications at the City. Activities include:

- Defining the scope of feeder applications for which integrations would be required to the ERP EAM modules
- Designing integration details such as (e.g. API architecture, detailed API design) to enable the integrations between systems
- Development, testing, and deployment of the integrations

Dependency on other Initiatives

- ERP Selection
- ERP Data Clean-up
- ERP Solution Architecture
- SIL Evaluation and Procurement

Technology Implementation

- ERP feeder systems and ERP EAM Wave 4.1 and 4.2 modules APIs architecture
- Detailed API design for data exchange
- Development, testing and deployment integrations to feeder applications using the SIL platform

Process Standardization

- NA

Costing Requirements

- **Internal**: $80-120K
- **External**: $600-800K

Resource Requirements

Process Resources

Internal	External
• NA	• NA

Technology Resources

Internal	External
• Solution Designer x 1 (20%) • Solution Architect x 1 (20%) • Change/Release Lead x 1 (5%) • Environment Mngr x 1 (5%)	• Technical Lead x 1 (20%) • Tech Analyst x1 (100%) • QA Lead x 1 (33%) • QA Analyst x 1 (33%)

Program Resources

Internal	External
• PM x (20%) • OCT Ops Lead x 1 (10%) • EA x 1 (10%)	• N/A

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (48 weeks)												

18.3 POSSE Modernization Initiatives

Permits & Licensing Evaluation

Initiative Description

Permits & Licensing (P&L) Evaluation will be required to ascertain the best Permits & Licensing solution that fits into the City's architecture landscape. Activities include:
- P&L requirements from core business units that manage those functions at the City
- Requirements analysis and consolidation by the project resources
- Architectural evaluation and cost evaluation of P&L (e.g. Accela, POSSE, Archetype) vendors and contracts
- This initiative will be followed by P&L Tool Selection

Dependency on other Initiatives

- None identified

Technology Implementation

- Not Applicable

Process Standardization

- Not Applicable

Costing Requirements

- **Internal:** $50-70K
- **External:** $450-650K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• Business Representative x 4 (25%)	• NA	• NA	• NA	• PM x 1 (20%) • Enterprise Architect x 1 (10%) • OCT Ops Lead x 1 (10%) • Security Lead x 1 (5%) • Security Analyst x 1 (5%)	• Project Manager (PM) x 1 (100%) • Business Analyst (BA) x 2 (100%)

Initiative Timeline	2019				2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (24 weeks)												

Permits & Licensing Tool Procurement/Selection

Initiative Description

Permits & Licensing Tool Procurement/Selection will be required to select the vendor that will provide licensing for the P&L solution. Activities include:
- A regular procurement process where an RFP is written to incorporate the business requirements, and inputs are consolidated from various representative on the procurement selection team
- Evaluation criteria definition with inputs from the selection team and/or other standard criteria followed by the City for its procurement processes
- Selection of the vendor based on the criteria outlined
- Negotiation details related to pricing and finalizing the contract
- Procurement of licenses post contract negotiations (if needed)

Dependency on other Initiatives

- Permits & Licensing Evaluation Initiative

Technology Implementation

- Not Applicable

Process Standardization

- Not Applicable

Costing Requirements

- **Internal:** $150-200K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• Business Representative x 2 (25%)	• NA	• NA	• NA	• PM x 1 (20%) • BA x 1 (50%) • CPSS Staff x 1 (25%) • EA x 1 (10%) • OCT Ops Lead x 1 (10%) • Security Lead x 1 (5%) • Security Analyst x 1 (5%)	• NA

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (36 weeks)												

Workflow Management System (WMS) Evaluation

Initiative Description

WMS Evaluation will be required to ascertain the best WMS solution that fits into the City's architecture landscape. Activities include:

- WMS requirements from core business units that manage those functions at the City
- Requirements analysis and consolidation by the project resources
- Architectural evaluation and cost evaluation of P&L (e.g. ServiceNow, BMC Remedy, Salesforce) vendors and contracts
- This initiative will be followed by WMS Tool Selection

Dependency on other Initiatives

- None identified

Technology Implementation

- Not Applicable

Process Standardization

- Not Applicable

Costing Requirements

- **Internal:** $50-70K
- **External:** $400-600K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• Business Representative x 4 (25%)	• NA	• NA	• NA	• PM x 1 (50%) • OCT Ops Lead x 1 (10%) • EA x 1 (10%) • Security Lead x 1 (5%) • Security Analyst x 1 (5%)	• Project Manager (PM) x 1 (100%) • Business Analyst (BA) x 2 (100%)

Initiative Timeline	2019				2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (24 weeks)												

Workflow Management System (WMS) Procurement/Selection

Initiative Description

Workflow Management System (WMS) Selection will be required to select the vendor that will provide licensing for the WMS solution. Activities include:

- A regular procurement process where an RFP is written to incorporate the business requirements, and inputs are consolidated from various representative on the procurement selection team
- Evaluation criteria definition with inputs from the selection team and/or other standard criteria followed by the City for its procurement processes
- Selection of the vendor based on the criteria outlined
- Negotiation details related to pricing and finalizing the contract
- Procurement of licenses post contract negotiations (if needed)

Dependency on other Initiatives

- WMS Evaluation Initiative

Technology Implementation

- Not Applicable

Process Standardization

- Not Applicable

Costing Requirements

- **Internal:** $150-200K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• Business Representative x 2 (25%)	• NA	• NA	• NA	• PM x 1 (20%) • BA x 1 (50%) • CPSS Staff x 1 (25%) • EA x 1 (10%) • OCT Ops Lead x 1 (10%) • Security Lead x 1 (5%) • Security Analyst x 1 (5%)	• NA

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (36 weeks)												

POSSE Modernization Wave 1 – Permits & Licensing

Initiative Description

POSSE Modernization Wave 1 – Permits & Licensing will be the first major wave required to implement the selected future state solution (e.g. POSSE, Accela, Archetype) and related process standardization for Permits & Licensing functions. Activities include:

- Configuration, testing and deployment of technology solution for Permits & Licensing functions.
- Point integrations, for an interim period, to SAP, PeopleSoft, Tririga, and ESRI, which can be later moved to the Systems Integration Layer as the other ERP implementation progress
- Process standardization for Urban Form eServices business unit in parallel to the implementation, building on the presently ongoing Urban Form eServices process standardization initiative.
- Future state operating model design, including for the governance model, to feed into the overall operating model for the branch(es) that manage Permits & Licensing

Dependency on other Initiatives

- ERP Selection
- ERP Solution Architecture
- EIM Roadmap and Plan
- Land / Building History Migration

Technology Implementation

- OOTB implementation of the Permits & Licensing solution
- Related data conversion, cleanup and migration, and go live of the selection solution

Process Standardization

- Implement vendor provided standard processes for the Permits & Licensing functions (modules) Standardize processes till the L5 level
- Future operating and governance model design

Costing Requirements

- **Internal**: $140-200K
- **External**: $1300-2000K

Resource Requirements

Process Resources

Internal	External
• Process Owner x 1 (20%) • Business Representative x 2 (50%)	• Functional Business Analyst x 2 (100%)

Technology Resources

Internal	External
• Solution Designer x 1 (20%) • Solution Architect x 1 (20%) • Change/Release Lead x 1 (5%) • Environment Mngr x 1 (5%)	• Technical Lead x 1 (50%) • Tech Analyst x5 (50%) • Data Analyst x1 (100%) • QA Lead x 1 (10%) • QA Analyst x 1 (100%)

Program Resources

Internal	External
• Leadership – OCT and P&L x 5 (2%) • PM x 1 (20%) • OCT Ops Lead x 1 (10%) • EA x 1 (10%) • Security Lead x1 (5%) • Security Analyst x1 (5%)	• Leadership x 2 (5%) • Project Manager x 1 (50%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (30 weeks)												

POSSE Modernization Wave 2 – Workflow & Service Management

Initiative Description

POSSE Modernization Wave 2 – Workflow & Service Management will be required to implement the selected future state solution (e.g. ServiceNow, BMC Remedy, Salesforce) and related process standardization for Community Standards and Complaints, and Parks and Roads functions. Activities include:

- Configuration, testing and deployment of technology solution.
- Process standardization and workflows migration sprints will occur in parallel to the implementation for Community Standards and Complaints, and Parks and Roads functions.
- Future state operating model design, including for the governance model, to feed into the overall operating model for the branch(es) that manage Community Standards and Complaints, and Parks and Roads workflows

Dependency on other Initiatives

- ERP Selection
- ERP Solution Architecture
- EIM Roadmap and Plan

Technology Implementation

- OOTB implementation of the WMS solution
- Related data conversion, cleanup and migration, and go live of the selection solution

Process Standardization

- Implement vendor provided standard processes for relevant workflow functions
- Standardize processes till the L5 level
- Future operating and governance model design

Costing Requirements

- **Internal**: $220-350K
- **External**: $2400-3600K

Resource Requirements

Process Resources

Internal	External
• Process Owner x 2 (20%) • Business Representative x 4 (25%)	• Functional Business Analyst x 2 (100%)

Technology Resources

Internal	External
• Solution Designer x 1 (40%) • Solution Architect x 1 (40%) • Change/Release Lead x 1 (10%) • Environment Mngr x 1 (10%)	• Technical Lead x 1 (50%) • Tech Analyst x6 (50%) • Data Analyst x1 (100%) • QA Lead x 1 (50%) • QA Analyst x 1 (100%)

Program Resources

Internal	External
• Leadership – OCT and P&L x 5 (2%) • PM x 1 (40%) • OCT Ops Lead x 1 (20%) • EA x 1 (20%) • Security Lead x1 (5%) • Security Analyst x1 (5%)	• Leadership x 2 (10%) • Project Manager x 1 (100%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (30 weeks)												

POSSE Modernization Wave 3 – Workflow & Service Management

Initiative Description

POSSE Modernization Wave 3 – Workflow & Service Management will be required to implement the selected future state solution (e.g. ServiceNow, BMC Remedy, Salesforce) and related process standardization for Disputes, Exemptions and Claims functions. Activities include:

- Configuration, testing and deployment of technology solution.
- Process standardization and workflows migration sprints will occur in parallel to the implementation for Disputes, Exemptions and Claims functions.
- Future state operating model design, including for the governance model, to feed into the overall operating model for the branch(es) that manage Disputes, Exemptions and Claims workflows

Dependency on other Initiatives

- ERP Selection
- ERP Solution Architecture
- EIM Roadmap and Plan

Technology Implementation

- OOTB implementation of the WMS solution
- Related data conversion, cleanup and migration, and go live of the selection solution

Process Standardization

- Implement vendor provided standard processes for the Disputes, Exemptions & Claims functions Standardize processes till the L5 level
- Future operating and governance model design

Costing Requirements

- **Internal:** $110-170K
- **External:** $1200-1800K

Resource Requirements

Process Resources

Internal	External
• Process Owner x 1 (20%) • Business Representative x 2 (25%)	• Functional Business Analyst x 2 (50%)

Technology Resources

Internal	External
• Solution Designer x 1 (120%) • Solution Architect x 1 (20%) • Change/Release Lead x 1 (5%) • Environment Mngr x 1 (5%)	• Technical Lead x 1 (50%) • Tech Analyst x3 (50%) • Data Analyst x1 (50%) • QA Lead x 1 (33%) • QA Analyst x 1 (66%)

Program Resources

Internal	External
• Leadership – OCT and P&L x 5 (2%) • PM x 1 (20%) • OCT Ops Lead x 1 (10%) • EA x 1 (10%) • Security Lead x1 (5%) • Security Analyst x1 (5%)	• Leadership x 2 (5%) • Project Manager x 1 (50%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (30 weeks)												

SIL Wave 4a – Permits & Licensing Integrations

Initiative Description

SIL Wave 4a – Permits & Licensing Integrations will be required to integrate newly implemented Permits & Licensing system with the new ERP and other applications such as GIS. Activities include:

- Defining the scope integrations required between Permits & Licensing system with the new ERP and other applications
- Designing integration details such as (e.g. API architecture, detailed API design) to enable the integrations between systems
- Development, testing, and deployment of the integrations

Dependency on other Initiatives

- ERP Selection
- ERP Data Clean-up
- ERP Solution Architecture
- SIL Evaluation and Procurement
- POSSE Modernization Wave 1 – Permits & Licensing

Technology Implementation

- Permits & Licensing system, new ERP and other applications APIs architecture
- Detailed API design for data exchange
- Development, testing and deployment integrations to feeder applications using the SIL platform

Process Standardization

- NA

Costing Requirements

- **Internal:** $55-80K
- **External:** $320-480K

Resource Requirements

Process Resources

Internal	External
• NA	• NA

Technology Resources

Internal	External
• Solution Designer x 1 (20%) • Solution Architect x 1 (20%) • Change/Release Lead x 1 (5%) • Environment Mngr x 1 (5%)	• Technical Lead x 1 (20%) • Tech Analyst x 2 (50%) • QA Lead x 1 (33%) • QA Analyst x 1 (33%)

Program Resources

Internal	External
• PM x 1 (20%) • OCT Ops Lead x 1 (10%) • EA x 1 (10%) • Security Lead x 1 (5%) • Security Analyst x 1 (5%)	• Leadership x 2 (5%) • Project Manager x 1 (20%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (24 weeks)												

SIL Wave 4b – WMS Integrations

Initiative Description

SIL Wave 4b – WMS Integrations will be required to integrate integrating newly implemented Workflow and Service Management system with the new ERP and other applications such as GIS. Activities include:

- Defining the scope integrations required between Workflow and Service Management Tool with the new ERP and other applications
- Designing integration details such as (e.g. API architecture, detailed API design) to enable the integrations between systems
- Development, testing, and deployment of the integrations

Dependency on other Initiatives

- ERP Selection
- ERP Data Clean-up
- ERP Solution Architecture
- SIL Evaluation and Procurement
- POSSE Modernization Wave 2 – Workflow & Service Management
- POSSE Modernization Wave 3 – Workflow & Service Management

Technology Implementation

- Workflow and Service Management system, new ERP and other applications APIs architecture
- Detailed API design for data exchange
- Development, testing and deployment integrations to feeder applications using the SIL platform

Process Standardization

- NA

Costing Requirements

- **Internal:** $55-80K
- **External:** $320-480K

Resource Requirements

Process Resources

Internal	External
• NA	• NA

Technology Resources

Internal	External
• Solution Designer x 1 (20%) • Solution Architect x 1 (20%) • Change/Release Lead x 1 (5%) • Environment Mngr x 1 (5%)	• Technical Lead x 1 (20%) • Tech Analyst x 2 (50%) • QA Lead x 1 (33%) • QA Analyst x 1 (33%)

Program Resources

Internal	External
• PM x 1 (20%) • OCT Ops Lead x 1 (10%) • EA x 1 (10%) • Security Lead x 1 (5%) • Security Analyst x 1 (5%)	• Leadership x 2 (5%) • Project Manager x 1 (20%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (24 weeks)												

18.4 Organizational Change Management Initiatives

Organizational Change Management - Preparation

Initiative Description

The Organizational Change Management Preparation phase will form the change management team with external and internal City of Edmonton resources. The preparation phase will include:
- Performing current state and cultural assessments
- Developing a stakeholder engagement and overall communications plan
- Creating an organizational change readiness strategy
- Engaging and building readiness within the City of Edmonton
- Developing a People Risk Register to identify any people related issues

Dependency on other Initiatives

- ERP Evaluation

Technology Implementation

- N/A

Process Standardization

- N/A

Costing Requirements

Internal: $40-60K
External: $400-500K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• Finance x 1 (5%) • HR x 1 (5%) • EAM x 1 (5%) • SCM x 1 (5%)	• N/A	• N/A	• N/A	• City Leadership x 1 (5%) • OCT Ops Lead x 1 (5%) • Change Management PM x 1 (20%) • Change Management Analyst x 2 (50%)	• OCM Director x 1 (50%) • OCM Manager x1 (50%) • OCM Senior Analyst x 2 (100%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (12 weeks)												

Organizational Change Management - Rollout

Initiative Description

The Organizational Change Management Rollout phase will engage stakeholders from across the organization to identify factors needed in order to implement change management, communications and training. This will be done through four main activities:
- Assess training needs
- Current Competency Assessment
- Identification of competencies/ capabilities required
- Capabilities Gap Analysis

Dependency on other Initiatives

- Change Management Preparation
- ERP Evaluation

Technology Implementation

- N/A

Process Standardization

- N/A

Costing Requirements

Internal: $60-70K
External: $660-780K

Resource Requirements

Process Resources		Technology Resources		Program Resources	
Internal	**External**	**Internal**	**External**	**Internal**	**External**
• Finance x 1 (5%) • HR x 1 (5%) • EAM x 1 (5%) • SCM x 1 (5%)	• N/A	• N/A	• N/A	• City Leadership x 1 (5%) • OCT Ops Lead x 1 (5%) • Change Management PM x 1 (20%) • Change Management Analyst x 2 (50%)	• OCM Director x 1 (50%) • OCM Manager x1 (50%) • OCM Senior Analyst x 2 (100%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (24 weeks)												

Organizational Change Management - Strategy Implementation

Initiative Description

The Organizational Change Management Rollout will take a "people centric" approach to change management this will include three main phases:

- Creating a tailored communications strategy for all ERP Initiatives including development of key messages
- Managing change management activities and creating engagement opportunities
- Governance of change management initiatives through monitoring communications and stakeholder engagement metrics

Dependency on other Initiatives

- Change Management Preparation
- Change Management Rollout
- ERP Selection

Technology Implementation

- N/A

Process Standardization

- N/A

Costing Requirements

Internal: $60-70K
External: $800-950K

Resource Requirements

Process Resources

Internal	External
• Finance x 1 (5%) • HR x 1 (5%) • EAM x 1 (5%) • SCM x 1 (5%)	• N/A

Technology Resources

Internal	External
• N/A	• N/A

Program Resources

Internal	External
• City Leadership x 1 (5%) • OCT Ops Lead x 1 (5%) • Change Management PM x 1 (25%) • Change Management Analyst x 2 (50%)	• OCM Director x 1 (25%) • OCM Manager x1 (25%) • OCM Senior Analyst x 2 (50%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (96 weeks)												

Organizational Change Management - Creation and Administration of Training

Initiative Description

Training will be a key component of a successful ERP Implementation. A training plan will be developed through the information gathered from the training needs and competency assessments. Throughout this phase training modules will be developed for each phase of the ERP implementation. Training will be designed based on stakeholder needs and will incorporate several different training methods.

Dependency on other Initiatives

- Change Management Preparation
- Change Management Rollout
- ERP Selection

Technology Implementation

- N/A

Process Standardization

- N/A

Costing Requirements

Internal: $180-230K
External: $2700-3200K

Resource Requirements

Process Resources

Internal	External
• N/A	• N/A

Technology Resources

Internal	External
• N/A	• N/A

Program Resources

Internal	External
• Learning and Development Lead x 1 (25%) • Learning Analyst x 1 (25%) • Graphic Designer x 1 (25%)	• OCM Director x 1 (25%) • OCM Manager x1 (50%) • Instructional Designer x 4 (50%) • Learning Analyst x 2 (25%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (96 weeks)												

Stakeholder Engagement: POSSE Modernization

Initiative Description

POSSE impacts both internal and external stakeholders therefore it is crucial to develop a strategy to address the citizens of Edmonton. This will include four main phases as outlined on the initiatives roadmap:

- Identify external stakeholders
- Assess communications and change management needs
- Develop External Stakeholder Engagement Plan
- Implement and deliver external stakeholder strategy
- Evaluate and report back on stakeholder engagement

Dependency on other Initiatives

- ERP Selection
- Implementation of Organizational Change Management Strategy

Technology Implementation

N/A

Process Standardization

N/A

Costing Requirements

Internal: $35-50K
External: $370-470K

Resource Requirements

Process Resources

Internal	External
• N/A	• N/A

Technology Resources

Internal	External
• N/A	• N/A

Program Resources

Internal	External
• City Leadership x 1 (10%) • Change Management PM x 1 (25%) • Change Management Analyst x 1 (25%)	• OCM Dir. x 1 (25%) • OCM Mgr x 1 (50%) • OCM Sr. Associate x 2 (50%)

Initiative Timeline	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Proposed Duration (72 weeks)												

19 Appendix F – Risks and Mitigation Plans

The following table details the identified risks related to the ESTP program, their classification by category and risk severity levels, along with the mitigation strategies for each risk.

#	Risk	Category	Level	Mitigation Strategy
1	Inability to make critical decisions and provide approval from the City Leadership.	Governance	Impact: *Severe* Likelihood: *Unlikely* Severity: *Medium*	• Establish robust governance structure as part of ESTP preparation phase
2	Insufficient leadership support for the solution, policies and processes after implementation.	Governance	Impact: *Severe* Likelihood: *Unlikely* Severity: *Medium*	• Develop clear communications strategy to allow for top-down support to encourage policy compliance through education and resource support
3	Low alignment with the other transformation initiatives with overlapping scope to the ESTP initiatives.	Governance	Impact: *Severe* Likelihood: *Moderately Likely* Severity: *High*	• Develop stakeholder engagement strategy to ensure alignment across the organization • Develop key messages to support scope of ESTP initiatives
4	Unique departmental processes not being standardized due to legal regulations or legislation requirements (e.g., collective bargaining agreement processes).	Standardization	Impact: *Moderate* Likelihood: *Likely* Severity: *High*	• Develop and implement leadership vision and direction for this standardization
5	Slow adoption or rejection of new solution and processes related to the ESTP.	Change Adoption	Impact: *Severe* Likelihood: *Likely* Severity: *Very High*	• Clearly define key performance indicators to measure the rate of adoption • Develop comprehensive change management plan, including key messages and training to ensure organizational buy-in for ESTP
6	Non-implementation of integrated change management strategy to guide business readiness.	Change Adoption	Impact: *Severe* Likelihood: *Unlikely* Severity: *Medium*	• Develop clearly defined change management and stakeholder engagement strategy
7	Inadequate communication and engagement with key stakeholders and employees impacted by change.	Change Adoption	Impact: *Severe* Likelihood: *Unlikely* Severity: *Medium*	• Develop communications strategy and progress reporting • Early engagement of key stakeholders
8	Inadequate team resourcing for preparation, implementation and sustainment of the Program - PMO, Core Team and SMEs.	Resourcing	Impact: *Severe* Likelihood: *Moderately Likely* Severity: *High*	• Identify key resources as prior to the ESTP start • Work closely with the HR team to ensure appropriate resources are available

#	Risk	Category	Level	Mitigation Strategy
9	Leadership changes resulting in decreased support for the ESTP Transformation.	Resourcing	Impact: *Severe* Likelihood: *Moderately Likely* Severity: *High*	• Identify alternative executive program sponsor / champion before the leadership changes
10	Cloud-based ERP not adequately meeting all functional needs at the City, including Benefits and Pensions administration.	Technology	Impact: *Moderate* Likelihood: *Moderately Likely* Severity: *Medium*	• Explore possibilities of integrating either best-of-breed systems or existing systems that meet the functional needs to the ERP solution through a systems integration layer
11	Cloud integration challenges with other systems.	Technology	Impact: *Severe* Likelihood: *Moderately Likely* Severity: *High*	• Gather integration requirements ahead of procurement for the system and understand technical capabilities of selected tool • Build in required stage gating into the procurement process for piloting and testing of integration
12	A risk related to data security, data retention, residency and recovery due to the implementation of a Cloud ERP.	Technology	Impact: *Severe* Likelihood: *Unlikely* Severity: *Medium*	• Ensure compliance with legislative and other legal requirements related to moving ERP to cloud
13	Inconsistent data quality between in-scope systems could impact functionality.	Data	Impact: *Severe* Likelihood: *Moderately Likely* Severity: *High*	• Prepare, cleanup and align master data before implementation
14	Extraction and consolidation of data from Cloud ERP to provide complete business analytics may be incomplete.	Data	Impact: *Moderate* Likelihood: *Moderately Likely* Severity: *Medium*	• Finalize/leverage Enterprise Analytics strategy and form a business analytics action plan prior to implementation • Establish agreement with the ERP solution provider on data ownership and usage needs. • Implement the business analytics action plan along with the ERP implementation
15	Lack of ability to execute procurement program in the expected timeline.	Procurement	Impact: *Severe* Likelihood: *Unlikely* Severity: *Medium*	• Explore leveraging the City's existing contracts to save time for procurement of the solution
16	A risk of scope creep could increase costs and cause delays in implementation timeline.	Delivery	Impact: *Moderate* Likelihood: *Moderately Likely* Severity: *Medium*	• Perform due diligence in requirements gathering and preparation phases • Properly assess the need for more additional features than required and limit approval to only critical additions • Limit the number of customizations and align processes to the technology solution

20 Appendix G – Financial Analysis Assumptions

S No	Category	Sub-Category	Assumptions
1	Time Period	General Assumptions	The study period for each of the options has been harmonized to ten years from the start of implementation; for SAP Cloud First option this period is from 2019 - 2028 and for Core Homogeneous and Best of Breed options it is 2019 - 2029 due to longer procurement.
2	Cost Estimation	General Assumptions	Cost estimates are provided based on the scope of work but do not constitute a guarantee, and costs may change based on the implementation timeline selected by the City.
3	Cost Estimation	General Assumptions	Rates used for external support are based on competitive Edmonton and Calgary market rates for consulting services.
4	Cost Estimation	General Assumptions	Rates used for internal resources are based on the following - Internal Branch resource rate tables (OCT), Collective Bargaining Agreement (CSU 52) 2018 resource rates (with addition of benefits), 2019-22 proposed City operating budget (blended branch rates), and blended resource rates provided by the City (CPSS).
5	Cost Estimation	General Assumptions	Yearly factors are used to account for average year-over-year cost increase. Two such factors are based on the Municipal Price Index (MPI) of the City of Edmonton - Wages (Internal and External) increase factor is 1.0288 (2.88 percent), and Other Costs (such as travel, training, membership dues, etc.) increase factor is 1.0208 (2.08 percent). (Source: City of Edmonton MPI)
6	Cost Estimation	General Assumptions	Projects costs increase factor is dependent on Wages increase and therefore assumed to be 1.0288 (or 2.88 percent yearly increase).
7	Cost Estimation	General Assumptions	A cost-increase factor of 2.5 percent per year is used to account for year-over-year cost increases changes in software costs (licensing and maintenance) based on the Commercial Software Price Index (CSPI) published by Statistics Canada. (Source: Statistics Canada CSPI).
8	Cost Estimation	General Assumptions	Infrastructure costs are assumed to increase by the same factor as the Software cost increase factor, i.e., 1.025 (or 2.5 percent yearly increase).
9	Cost Estimation	General Assumptions	Internal FTE support numbers are assumed to increase by 2percent year-over-year for SAP, PeopleSoft and External IT Groups to account for increase in internal support needed for the on premise systems in the future.
10	Cost Estimation	General Assumptions	Personnel costs increase factor is defined as the multiplication of Wages increase factor and FTE increase factor, and equals approximately 1.0494 (or 4.94 percent yearly increase).
11	Cost Estimation	General Assumptions	For internal resources, 48 working weeks are assumed in a year, and 35 average working hours in a week. As a result, 1680 average working hours are assumed in a year.
12	Cost Estimation	General Assumptions	For external resources, 48 working weeks are assumed in a year, and 40 average working hours in a week. As a result, 1920 average working hours are assumed in a year.
13	Cost Estimation	General Assumptions	A discount rate of 3 percent percent is used for Net Present Value (NPV) calculations. The City's 10-year debt financing rate is between 2 to 2.67 percent (Source: City of Edmonton 2017 Annual Report)

S No	Category	Sub-Category	Assumptions
14	Cost Estimation	General Assumptions	Sensitivity analysis is performed using a benefit and cost variability of +-20 percent than the expected value.
15	Cost Estimation	General Assumptions	In the worst case sensitivity scenario, it is assumed that the future state costs for SAP on premise, PeopleSoft and POSSE would stay at 100 percent of predicted Status Quo costs.
16	Cost Estimation	General Assumptions	All benefits related to cost reductions in capital projects, software licensing, software maintenance, infrastructure, and other costs (such as travel, training, membership dues, etc.) are categorized as harvestable benefits.
17	Cost Estimation	General Assumptions	All benefits related to reduction in personnel costs and increase in process efficiencies are categorized as non-harvestable benefits.
18	Cost Estimation	Status Quo - POSSE	The past POSSE CapEx costs provided by the City are explained with a reasonable degree of confidence using a 5-year moving average prediction model. Hence this model is used to predict the future CapEx costs from 2019 to 2029. This CapEx cost model should be validated after the completion of POSSE Deep Dive initiative planned by the City.
19	Cost Estimation	Status Quo - POSSE	The future state POSSE CapEx Costs show a large ramp up and a slight ramp down effect (e.g. CapEx costs go up for the years 2020 to 2024 and go down for 2025 and 2026) due to nature of capital investment in POSSE projects where the investment go up for 5 years and then go down for 1-2 following years. This trend is also observed in past POSSE capital investments at the City investments.
20	Cost Estimation	Status Quo - POSSE	City's past POSSE OpEx costs did not show any consistent trend with a reasonable degree of confidence. Hence, these OpEx costs for the year 2018 are predicted by using the average operating costs of the previous six years (2012-2017) for which the data collected by the City by using a consistent method. This OpEx cost model should be validated after the completion of POSSE Deep Dive initiative planned by the City.
21	Cost Estimation	Status Quo - POSSE	The POSSE OpEx costs for the years 2019-2023 are predicted using the costs of 2018 and a yearly cost increase of 5 percent to take into account the complexity associated with POSSE as compared to other systems. Further, to incorporate the increase in complexity for POSSE in the future, the costs factor is increased to 7 percent from 2024 to 2026 and to 9 percent for 2027 and 2029. This OpEx cost model should be validated after the completion of POSSE Deep Dive initiative planned by the City.
22	Cost Estimation	Status Quo - SAP	All CapEx and OpEx costs for the year 2018 are linearly extrapolated for the entire year using the costs provided for 8 months.
23	Cost Estimation	Status Quo - SAP	The CapEx and OpEx costs for the year 2019 are predicted by using the average costs of the previous four years (2015-2018) and yearly cost-factors already defined (e.g. Capital Projects yearly cost increase - 2.88percent, Personnel yearly cost increase - 4.94 percent, Software and Infrastructure yearly cost increase - 2.5 percent , and so on)
24	Cost Estimation	Status Quo - SAP	To account for the need for future upgrades for SAP on premise systems, for the years 2024 to 2028, a $2 million cost per year is added to SAP Status Quo CapEx costs.
25	Cost Estimation	Status Quo - ARIBA	The CapEx and OpEx costs provided in the SAP Ariba Business Case are incorporated into the predictions for SAP Status Quo Costs in addition to the costs mentioned above by adding those costs to the existing costs.
26	Cost Estimation	Status Quo - PeopleSoft	The CapEx and OpEx cost for the year 2018 are linearly extrapolated for the entire year using the costs provided for 8 months.

S No	Category	Sub-Category	Assumptions
27	Cost Estimation	Status Quo - PeopleSoft	The CapEx and OpEx costs for the year 2019 are predicted by using the average costs of the previous four years (2015-2018) and yearly cost-factors already defined (e.g. Capital Projects yearly cost increase - 2.88 percent, Personnel yearly cost increase - 4.94 percent, Infrastructure yearly cost increase - 2.5 percent , and so on). An exception is the Software Support Costs for 2019 and 2020 where actual contract values are used.
28	Cost Estimation	Status Quo - PeopleSoft	An additional cost of $147,500 is added to PeopleSoft licensing costs for 2019 based on additional user count projections provided by the City.
29	Cost Estimation	Status Quo - PeopleSoft	For Status Quo, it is assumed that the City will upgrade the PeopleSoft system by renewing the contract with Oracle starting 2022.
30	Cost Estimation	Status Quo - PeopleSoft	To account for the need for future upgrades for on premise PeopleSoft system, for the years 2022 to 2026, a $1.5 million cost per year is added to PeopleSoft Status Quo CapEx costs.
31	Cost Estimation	Status Quo - PeopleSoft	The City will be out-of-support for the years 2018 to 2021, for which the City will have to compensate Oracle. Therefore, an additional cost for $680,000 (plus the annual software cost increase factor) is added to PeopleSoft licensing and maintenance costs for the years 2022 to 2025 as compensation to Oracle for the out-of-support period.
32	Cost Estimation	Status Quo - External IT Support Groups	For 2018, it is assumed that there are 1.3 technical external IT support resources in Human Resources branch (actual number provided by the City) and 2 external IT support resources in Finance branch at the City for the year 2018.
33	Cost Estimation	Status Quo - External IT Support Groups	The External IT Support Group costs for the year 2019 to 2029 are predicted using the 2018 FTE numbers, working hours by branch, blended hourly rates by branch, yearly FTE increase factor (2 percent), and yearly wages increase (2.88 percent) factor.
34	Cost Estimation	Status Quo - Other HR and EH&S Apps	The cost for the following HR and EH&S applications were included in the Status Quo costs with a yearly increase factor of 1.025 (2.5 percent) - Oracle Taleo, Visier, OpenText LearnFlex, Saba Human Concepts (Org Charts), PhenomPeople, Intelex and Cority.
35	Cost Estimation	Future State Option - SAP Cloud First	Cost estimates for SAP Cloud First Option are based on a best estimate of the supply market and must be validated through the City's procurement process during the process of business case approval.
36	Cost Estimation	Future State Option - SAP Cloud First	Costs for external resources are assumed wherever external specialist skills will be required during various program phases.
37	Cost Estimation	Future State Option - SAP Cloud First	Program costs are calculated as a summation of costs of initiatives (including process standardization, technology implementation, and change management) on the implementation roadmap and takes business and technical resourcing requirements into consideration.
38	Cost Estimation	Future State Option - SAP Cloud First	Integration platform and the associated costs are assumed to be for an Industry leading product.
39	Cost Estimation	Future State Option - SAP Cloud First	To provision for major future system upgrades, $3 Million per year have been budgeted from 2024 to 2028.

S No	Category	Sub-Category	Assumptions
40	Cost Estimation	Future State Option - SAP Cloud First	Contingency costs were assumed to be $0.5 Million per year from 2022 to 2028. Contingencies may be needed in any component of future state capital and operating costs.
41	Cost Estimation	Future State Option - Core Homogenous ERP	The cost estimation for the Core Homogenous ERP option is derived from the SAP Cloud First option with an additional procurement window of one year.
42	Cost Estimation	Future State Option - Core Homogenous ERP	The 2019 costs for the Core Homogenous option are mainly preparation and procurement costs, and others costs start from the year 2020.
43	Cost Estimation	Future State Option - Core Homogenous ERP	To provision for major future system upgrades, $3 Million per year have been budgeted from 2025 to 2029.
44	Cost Estimation	Future State Option - Core Homogenous ERP	Contingency costs were assumed to be $0.5 Million per year from 2023 to 2029. Contingencies may be needed in any component of future state capital and operating costs.
45	Cost Estimation	Future State Option - Best of Breed	The best-of-breed ERP options were assumed to be Workday for HR, SAP for Supply Chain and Procurement, Oracle for Finance, and IBM Maximo for EAM based SME inputs and market research.
46	Cost Estimation	Future State Option - Best of Breed	Cost estimates for Best of Breed Option are based on a best estimate of the supply market and must be validated through the City's procurement process during the process of business case approval.
47	Cost Estimation	Future State Option - Best of Breed	An additional procurement window of one year was assumed for the Best-of-Breed Option versus the SAP Cloud First Option due to additional time needed to procure different solutions from different vendors.
48	Cost Estimation	Future State Option - Best of Breed	The 2019 costs for the Best-of-Breed option are mainly preparation and procurement costs, and others costs start from the year 2020.
49	Cost Estimation	Future State Option - Best of Breed	10 percent additional integration costs were assumed for this option than the SAP Cloud First option because of the higher number of integrations required among four different ERPs systems and other feeder applications.
50	Cost Estimation	Future State Option - Best of Breed	To provision for major future system upgrades, $3 Million per year have been budgeted from 2025 to 2029.
51	Cost Estimation	Future State Option - Best of Breed	Contingency costs were assumed to be $0.5 Million per year from 2023 to 2029. Contingencies may be needed in any component of future state capital and operating costs.

S No	Category	Sub-Category	Assumptions
52	Benefits Realization	Future State - POSSE	Cost ramp down factors are used to calculate Future State POSSE costs. These ramp down factors are assumed as a percentage of Status Quo Costs. The difference between the Status Quo costs and Future State costs is calculated as the benefit value. The benefit realization from POSSE should be validated after the completion of POSSE Deep Dive initiative planned by the City.
53	Benefits Realization	Future State - POSSE	Future State POSSE CapEx costs for the years 2019 to 2023 are assumed to be 100 percent, 90 percent, 80 percent, 80 percent, and 70 percent of Status Quo POSSE CapEx Costs for the same years, and stable 70 percent from 2024 to 2029.
54	Benefits Realization	Future State - POSSE	Future State POSSE OpEx costs for the years 2019 to 2023 are assumed to be 100 percent, 100 percent, 80 percent, 80 percent, and 80 percent of the Status Quo POSSE OpEx Costs for the same years, and stable at 80 percent from 2024 to 2029.
55	Benefits Realization	Future State - POSSE	The POSSE costs ramp down gradually by 20-30 percent from 2020 to 2023 because of benefits accrual from application rationalization and process standardization, and from using Out-of-the-box technology with minimal customizations.
56	Benefits Realization	Future State - POSSE	The CapEx benefit realization for POSSE is earlier than OpEx benefit realization as the City can put a moratorium on CapEx projects/costs more easily than OpEx costs.
57	Benefits Realization	Future State - POSSE	The remaining portion of the POSSE costs (70-80 percent) that continue into the Future State are assumed to be invested in upgrade projects and operations of new (or existing) Permits and Licensing and Workflow Management Systems after POSSE rationalization initiatives are complete.
58	Benefits Realization	Future State - POSSE	The benefits for Best-of-Breed and Core Homogenous ERP options are realized one year later than the SAP Cloud First Option due to additional time needed to procure different solutions from different vendors.
59	Benefits Realization	Future State - SAP	Cost ramp down factors are used to calculate Future State SAP On-Premise (plus Ariba Cloud) costs. These ramp down factors are assumed as a percentage of Status Quo Costs. The difference between the Status Quo costs and Future State costs is calculated as the benefit value.
60	Benefits Realization	Future State - SAP	Future State SAP CapEx costs for the years 2019 to 2023 are assumed to be 100 percent, 90 percent, 70 percent, 30 percent and 10 percent of the Status Quo SAP CapEx Costs for the same years, and stable at 10 percent from 2024 to 2029. A small decrease happens in 2019 and 2020, costs ramp down to 70 percent in 2021 when portions of the new system would go live, and to 30 percent in 2022 after the implementation of new SAP Cloud ERP is complete. All of existing CapEx costs related SAP On-Premise systems (except SAP Ariba Capital costs of around 10 percent of total) are assumed to be eliminated in 2023, one year after implementation. This sequence of ramp down percentages is based on the implementation roadmap of Future State SAP Cloud implementation.
61	Benefits Realization	Future State - SAP	For the years 2019 to 2023, Future State SAP Personnel and Services Costs (within OpEx) are assumed to be 100 percent, 100 percent, 100 percent, 70 percent, and 30 percent of the Status Quo equivalents costs for the same years, and stable at 0 percent from 2024 to 2028/2029. No cost ramp down is assumed from 2019 to 2021 as the existing systems would still need the personnel support. Costs ramp down to 70 percent in 2022 and 30 percent in 2023 after the implementation of the new SAP Cloud ERP is complete in 2021. All these costs are available for elimination or reallocation from the year 2024. Internal support for the future state ERP cloud system (and SAP Ariba) can be provided through the new Internal Services Support Centre.

S No	Category	Sub-Category	Assumptions
62	Benefits Realization	Future State - SAP	For the years 2019 to 2023, SAP on premise (plus SAP Ariba) licensing, maintenance and vendor support costs are assumed to be 100 percent, 100 percent, 100 percent, 50 percent of the Status Quo costs for the same years, and stable at 25 percent from 2024 to 2029. No decrease happens from 2019 to 2021 because the old system would still be running before the new implementation is complete. These costs decrease to 50 percent in 2022 after the implementation of new SAP Cloud ERP is complete. All licensing, maintenance and support costs related to the current SAP system (except the SAP Ariba costs of ~25 percent of total) are assumed to be eliminated from 2023.
63	Benefits Realization	Future State - SAP	A conservative assumption is made where the infrastructure costs attributed to SAP on premise system are not ramped down at all (or kept at 100 percent of Status Quo Costs). This is because infrastructure costs are difficult to ramp down as the corporate applications share common infrastructure with numerous other applications.
64	Benefits Realization	Future State - SAP	Other costs include training, travel for training/conferences, recognition, membership & professional dues. These are expected to continue into the future state and hence not ramped down at all.
65	Benefits Realization	Future State - SAP	The CapEx benefit realization for SAP is earlier than OpEx benefit realization as the City can put a moratorium on CapEx projects/costs more easily than OpEx costs.
66	Benefits Realization	Future State - SAP	SAP OpEx cost are assumed to stay at 30 percent from 2023 to 2029 to account for the SAP Ariba operational costs.
67	Benefits Realization	Future State - SAP	The benefits for Best-of-Breed and Core Homogenous ERP options are realized one year later than the SAP Cloud First Option due to additional time needed to procure different solutions from different vendors.
68	Benefits Realization	Future State - PeopleSoft	Cost ramp down factors are used to calculate Future PeopleSoft costs. These ramp down factors are assumed as a percentage of Status Quo Costs. The difference between the Status Quo costs and Future State costs is calculated as the benefit value.
69	Benefits Realization	Future State - PeopleSoft	Future State PeopleSoft CapEx costs for the years 2019 to 2023 are assumed to be 100 percent, 90 percent, 70 percent, 30 percent and 0 percent of the Status Quo PeopleSoft CapEx costs for the same years, and stable at 0 percent from 2024 to 2029. A small costs decrease happens in 2019 and 2020 as the implementation of the new system would have only started in those years and the existing system would still have to be maintained. Costs ramp down to 70 percent in 2021 when portions of the new system would go live, and to 30 percent in 2022 after the implementation is complete in December 2021. All existing CapEx costs related PeopleSoft system can be eliminated in 2023. This sequence of ramp down percentages is based on the implementation roadmap of Future State SAP Cloud implementation that will replace PeopleSoft.
70	Benefits Realization	Future State - PeopleSoft	For the years 2019 to 2023, PeopleSoft Personnel and Services Costs (within OpEx) are assumed to be 100 percent, 100 percent, 100 percent, 70 percent, and 30 percent of the Status Quo equivalents costs for the same years, and stable at 0 percent from 2024 to 2028/2029. No cost decreases are assumed from 2019 to 2021 because the existing systems would still need the personnel and services support. Costs slowly ramp down to 70 percent in 2022 and 30 percent in 2023 after the implementation of the new SAP Cloud ERP is complete in December 2021. All these costs are available for reallocation to other places from 2024. Internal support for the future state ERP cloud system, which will replace PeopleSoft, can be provided through the new Internal Services Support Centre.

S No	Category	Sub-Category	Assumptions
71	Benefits Realization	Future State - PeopleSoft	For the years 2019 to 2023, PeopleSoft on premise licensing, maintenance and vendor support costs are assumed to be 100 percent, 100 percent, 100 percent and 30 percent of the Status Quo costs for the same years, and stable at 0 percent from 2024 to 2029. No decrease happens from 2019 to 2023 as the current system will keep running until the end of 2021. A small portion of these costs could carry over to 2022 (assumed to be 30 percent). All licensing, maintenance and support costs related to the current PeopleSoft system are assumed to be eliminated from 2023.
72	Benefits Realization	Future State - PeopleSoft	A conservative assumption is made where the infrastructure costs attributed to PeopleSoft on premise system are not ramped down at all (or kept at 100 percent of Status Quo Costs). This is because infrastructure costs are difficult to ramp down as the corporate applications share common infrastructure with numerous other applications.
73	Benefits Realization	Future State - PeopleSoft	Others costs include training, travel for training/conferences, recognition, membership and professional dues. These are expected to continue into the future state and hence not ramped down at all.
74	Benefits Realization	Future State - PeopleSoft	The CapEx benefit realization for PeopleSoft is earlier than OpEx benefit realization as the City can put a moratorium on CapEx projects/costs more easily than OpEx costs.
75	Benefits Realization	Future State - PeopleSoft	The benefits for Best-of-Breed and Core Homogenous ERP options are realized one year later than the SAP Cloud First Option due to additional time needed to procure different solutions from different vendors.
76	Benefits Realization	Future State - External IT Support Groups	Cost ramp down factors are used to calculate Future State External IT Support Group costs. These ramp down factors are assumed as a percentage of Status Quo Costs. The difference between the Status Quo costs and Future State costs is calculated as the benefit value.
77	Benefits Realization	Future State - External IT Support Groups	Future State costs for the years 2019 to 2024 are assumed to be 100 percent, 100 percent, 100 percent, 70 percent, 30 percent, 0 percent of the Status Quo External IT Support Group costs for the same years, and stable at 0 percent from 2025 to 2029. There is no External IT Support Group cost reduction expected for 2019-2022 with the program in the implementation phase. The resources would be needed to maintain and support the existing systems. Cost reductions are assumed to gradually ramp down to 70 percent in 2022, to 30 percent in 2023 and 0 percent in 2024 and onwards. This gradual ramp down is assumed to give the City two years (2022-23) to reallocate these costs.
78	Benefits Realization	Future State - External IT Support Groups	The benefits for Best-of-Breed and Core Homogenous ERP options are realized one year later than the SAP Cloud First Option due to additional time needed to procure different solutions from different vendors.
79	Benefits Realization	Future State - Other HR and EH&S Apps	The costs for these applications (except Visier) were ramped down at the same rate as PeopleSoft licensing, maintenance and vendor support costs ramp downs. As such, the ramp down percentages used are 100 percent, 100 percent, 100 percent, 30 percent and 0 percent from 2019 to 2023 and stable at 0 percent from 2024. Visier costs were not ramped down at all.
80	Benefit Realization	Process Benefits	Current state process KPI metrics are calculated based on data provided by City stakeholders and subsequently validated with City and vendor SMEs.
81	Benefit Realization	Process Benefits	APQC City Government Process classification source Framework was used as baseline for process definitions.

S No	Category	Sub-Category	Assumptions
82	Benefit Realization	Process Benefits	APQC Government Industry specific process benchmarks have been used for analysis and scaled based on City of Edmonton's revenue.
83	Benefit Realization	Process Benefits	Where appropriate, FTE headcounts for process groups were approximated based on FTE headcounts for the branches provided in the 2018 City Budget.
84	Benefit Realization	Process Benefits	FTE counts for the City's Finance branches are based on 2018 budget numbers, split into the process elements based on the APQC Process classification source Framework.
85	Benefit Realization	Process Benefits	FTE counts for the City's HR branch are based on 2018 budget numbers, split into the process elements based on the APQC Process Classification Framework.
86	Benefit Realization	Process Benefits	FTE Counts for the City's CPSS branch are based on baseline numbers from 2016 CPSS Operating Model engagement.
87	Benefit Realization	Process Benefits	Cycle time benefits tied back to effort (with an estimate of current state FTE effort x cycle time, and a future state FTE effort x cycle time, with the difference being the benefit realized for cycle time. Note that the frequency a specific activity is processed at a given cycle time is assumed and provided in the comments section.
88	Benefit Realization	Process Benefits	Based on the 2017 Annual Report published by the City, the annual operating revenue is assumed to be approximately $3 billion. This revenue is assumed to remain constant for the financial analysis.
89	Benefit Realization	Process Benefits	The operating revenue being used is that of the City of Edmonton entity, excluding Boards and Commissions, and EPCOR revenues. The Boards, Commissions and EPCOR have separate operating structures (with their own FTEs supporting their functions such as HR) and this headcount will not impacted by the business case.
90	Benefit Realization	Process Benefits	Comparison based on the annual revenue (FTE per $1 billion revenue from benchmark, so FTE at $3 billion for the City).
91	Benefit Realization	Process Benefits	In quantifying dollar values for increased process FTE capacity, blended rates were used (as the position of the resources is unknown).
92	Benefit Realization	Process Benefits	The process element benefits from FTE effort reduction are adjusted so that the same FTE effort reduction is not captured in more than one place.
93	Benefit Realization	Process Benefits	For metrics with improvement in process efficiency percent, the net increase is multiplied by the corresponding the FTE based process benefit for a representative benefit.
94	Benefit Realization	Process Benefits	A sensitivity of 50 percent (low) 70 percent (med) and 90 percent (high) was conducted, with medium case being the "expected".
95	Benefit Realization	Process Benefits	All Process Benefits are assumed to be non-harvestable and will be considered harvestable on a case-by-case basis as verified by City leadership.
S No	**Category**	**Sub-Category**	**Assumptions**
96	Benefit Realization	Process Benefits	The ramp up of process benefit realization is assumed to start in the first year after the completion of the corresponding roadmap initiative (i.e., Finance ERP waves for Finance process benefits). For SAP Cloud First and Core Homogenous ERP options, the benefits will be nil until the year following the completion of the corresponding initiative and then ramp up to

			15 percent, 45 percent, 75 percent, 90 percent, and 100 percent. For Best-of-Breed option, the benefits will be nil until the year following the completion of the corresponding initiative and then ramp up to 20 percent, 50 percent, 75 percent, 90 percent and 100 percent.
97	Benefit Realization	Process Benefits	Note that the "Best of Breed" scenarios benefits are assumed to vary from the "SAP Cloud First" scenario in how quickly they ramp up; this is based on the assumption that best of breed applications for each function would most likely see earlier adoption by the users in each function, and thus increase the rate of process efficiency improvement.
98	Benefit Realization	Process Benefits	Finance - A comparison was done of the total FTEs in Financial Services and Financial Strategies and Budget from the 2018 Budget (230.8) representing all Finance related processes at the City of Edmonton, and the APQC Government Sector median benchmark headcount for all Finance related processes (185.7), with the City being approximately 24.3 percent greater FTEs.
99	Benefit Realization	Process Benefits	Finance - In estimating the current state FTE count split for all of Finance process components, the current total Finance FTE count (230.8) was done by scaling the APQC Government Sector median benchmark FTE KPI for each component (FTE/$1B revenue) by 24.3 percent to the current state benchmark FTE KPI
100	Benefit Realization	Process Benefits	Finance - Each process component was then multiplied by the $3 billion revenue that this business case uses for the annual revenue at the City.
101	Benefit Realization	Process Benefits	Finance - The process benefits are captured as the gap between the future state KPI and the current state KPI (on the FTE/$1 billion revenue basis) and the gap is then turned into annual benefits by multiplying by $3 billion revenue that this business case uses for the annual revenue at the City.
102	Benefit Realization	Process Benefits	Finance - In cases where a process component (and the headcount for that component) is incorporated in more than one benefit, the annual benefit estimation is subtracted to ensure the benefits are not double counted.
103	Benefit Realization	Process Benefits	Finance - The benefits that are not FTE related are based on KPIs that are not per $1 billion so they do not get multiplied by a factor of 3.

21 Appendix H – Detailed Breakdown of Program Implementation and Sustainment Costs

Cost Categories	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
One-Time Costs	$2.6M	$6.5M	$24.0M	$20.9M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$53.9M
Ongoing Costs	$0.0M	$0.6M	$3.8M	$4.3M	$5.4M	$5.5M	$8.7M	$8.9M	$9.3M	$9.5M	$9.7M	$65.9M
Total Implementation and Sustainment Costs	$2.6M	$7.1M	$27.8M	$25.2M	$5.4M	$5.5M	$8.7M	$8.9M	$9.3M	$9.5M	$9.7M	$119.8M

22 Appendix I – Financial Analysis Breakdown by Function

Business Function	Category	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Finance	Costs	$0.0M	$0.0M	$7.2M	$2.4M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	**$9.7M**
	Benefits	$0.0M	$0.0M	$0.0M	$1.0M	$2.9M	$5.1M	$6.2M	$7.1M	$7.3M	$7.5M	$7.8M	**$45.0M**
	Net value	**$0.0M**	**$0.0M**	**-$7.2M**	**-$1.5M**	**$2.9M**	**$5.1M**	**$6.2M**	**$7.1M**	**$7.3M**	**$7.5M**	**$7.8M**	**$35.3M**
HR	Costs	$0.0M	$2.2M	$6.7M	$8.3M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	**$17.2M**
	Benefits	$0.0M	$0.0M	$0.0M	$0.0M	$0.6M	$1.9M	$3.2M	$3.9M	$4.5M	$4.6M	$4.8M	**$23.5M**
	Net value	**$0.0M**	**-$2.2M**	**-$6.7M**	**-$8.3M**	**$0.6M**	**$1.9M**	**$3.2M**	**$3.9M**	**$4.5M**	**$4.6M**	**$4.8M**	**$6.2M**
CPSS	Costs	$0.0M	$0.0M	$1.1M	$0.7M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	**$1.8M**
	Benefits	$0.0M	$0.0M	$0.0M	$0.0M	$0.1M	$0.3M	$0.5M	$0.6M	$0.6M	$0.6M	$0.7M	**$3.3M**
	Net value	**$0.0M**	**$0.0M**	**-$1.1M**	**-$0.7M**	**$0.1M**	**$0.3M**	**$0.5M**	**$0.6M**	**$0.6M**	**$0.6M**	**$0.7M**	**$1.5M**
Other Program	Costs	$2.6M	$4.9M	$12.8M	$13.8M	$5.4M	$5.5M	$8.7M	$8.9M	$9.3M	$9.5M	$9.7M	**$91.1M**
	Benefits	$0.0M	$0.0M	$0.6M	$2.7M	$10.5M	$18.7M	$20.3M	$21.4M	$20.6M	$21.8M	$20.8M	**$137.3M**
	Net value	**-$2.6M**	**-$4.9M**	**-$12.2M**	**-$11.1M**	**$5.1M**	**$13.1M**	**$11.6M**	**$12.5M**	**$11.3M**	**$12.3M**	**$11.1M**	**$46.2M**

23 Appendix J – Financial Analysis for All Options

Option Name	Category	Segment	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
1. Status Quo	Costs	TCO	$24.2M	$22.5M	$22.3M	$25.8M	$28.0M	$31.6M	$30.5M	$31.2M	$31.0M	$33.9M	$33.1M	**$314.1M**
		Program Costs	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	**$0.0M**
	Benefits	TCO Reduction	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	**$0.0M**
		Process Efficiencies	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	$0.0M	**$0.0M**
	Net value		**$0.0M**	**$0.0M**	**$0.0M**	**$0.0M**	**$0.0M**	**$0.0M**	**$0.0M**	**$0.0M**	**$0.0M**	**$0.0M**	**$0.0M**	**$0.0M**
2. Core Homogeneous ERP	Costs	TCO	$26.7M	$29.6M	$49.5M	$48.4M	$22.9M	$18.5M	$18.9M	$18.8M	$19.7M	$21.6M	$22.1M	**$296.6M**
		Program Costs	$2.6M	$7.1M	$27.8M	$25.2M	$5.4M	$5.5M	$8.7M	$8.9M	$9.3M	$9.5M	$9.7M	**$119.8M**
	Benefits	TCO Reduction	$0.0M	$0.0M	$0.6M	$2.7M	$10.5M	$18.7M	$20.3M	$21.4M	$20.6M	$21.8M	$20.8M	**$137.3M**
		Process Efficiencies	$0.0M	$0.0M	$0.0M	$1.0M	$3.6M	$7.2M	$9.9M	$11.6M	$12.5M	$12.8M	$13.2M	**$71.7M**
	Net value		**-$2.6M**	**-$7.1M**	**-$27.2M**	**-$21.6M**	**$8.7M**	**$20.3M**	**$21.4M**	**$24.1M**	**$23.8M**	**$25.1M**	**$24.2M**	**$89.2M**
3. SAP Cloud First	Costs	TCO	$32.9M	$49.8M	$45.4M	$21.2M	$17.3M	$20.0M	$18.0M	$19.0M	$19.7M	$21.6M	-	**$264.9M**
		Program Costs	$8.7M	$27.9M	$25.2M	$5.4M	$5.5M	$8.7M	$8.9M	$9.1M	$9.3M	$9.5M	-	**$118.4M**
	Benefits	TCO Reduction	$0.0M	$0.7M	$2.2M	$9.9M	$16.2M	$20.3M	$21.4M	$21.4M	$20.6M	$21.8M	-	**$134.5M**
		Process Efficiencies	$0.0M	$0.0M	$0.9M	$3.5M	$7.0M	$9.6M	$11.3M	$12.1M	$12.5M	$12.8M	-	**$69.7M**
	Net value		**-$8.7M**	**-$27.2M**	**-$22.2M**	**$8.1M**	**$17.6M**	**$21.2M**	**$23.8M**	**$24.4M**	**$23.8M**	**$25.1M**	**-**	**$85.8M**
4. Best of Breed	Costs	TCO	$24.7M	$31.3M	$52.3M	$46.9M	$24.6M	$20.3M	$20.8M	$20.7M	$21.5M	$23.4M	$24.0M	**$310.6M**
		Program Costs	$0.5M	$8.8M	$30.7M	$23.8M	$7.1M	$7.4M	$10.6M	$10.8M	$11.1M	$11.4M	$11.7M	**$133.8M**
	Benefits	TCO Reduction	$0.0M	$0.0M	$0.6M	$2.7M	$10.5M	$18.7M	$20.3M	$21.4M	$20.6M	$21.8M	$20.8M	**$137.3M**
		Process Efficiencies	$0.0M	$0.0M	$0.0M	$1.9M	$6.0M	$10.0M	$11.8M	$12.1M	$12.5M	$12.8M	$13.2M	**$80.3M**
	Net value		**-$0.5M**	**-$8.8M**	**-$30.1M**	**-$19.2M**	**$9.3M**	**$21.3M**	**$21.5M**	**$22.7M**	**$22.0M**	**$23.3M**	**$22.3M**	**$83.8M**