

For Public Release

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Dept: Audit Committee

City of Calgary Infrastructure Review

Interim Report

March 6, 2025



March 6, 2025

City of Calgary
800 Macleod Trail SE,
Calgary AB T2G 2M3

Dear Corrie Smillie,

We have completed our interim report to conduct a review of the Corporate Asset Management Plan (CAMP) and Asset Management Policy (AM Policy), specifically focusing on asset management documentation, practices, and processes, as well as the identification of critical infrastructure, decision-making processes, and investment prioritization. This Interim Report outlines the interim findings of the review. It includes tasks completed to March 6, 2025. We have completed the Interim Report as per our engagement agreement/program plan. Our services March 6, 2025, were performed in accordance with our engagement agreement, dated 27 January, 2025, and our procedures were limited to those described in that agreement, and any subsequent written and agreed changes.

The procedures summarized in our Interim Report do not constitute an audit, a review or other form of assurance in accordance with any generally accepted auditing, review, or other assurance standards, and accordingly we do not express any form of assurance.

Consistent with our engagement agreement, the Interim Report is intended solely for the information and use of The City of Calgary and is not intended to be and should not be used by anyone other than these specified parties.

We appreciate the cooperation and assistance provided to us during our work. We would be grateful if you would indicate your acceptance of the Interim Report below. If you have any questions, please call Shane Thompson at 1(587) 582-1623.

Sincerely,

Ernst & Young LLP

Calgary City Centre, 2200 - 215 2nd Street SW

Calgary, Alberta, T2P 1M4, Canada

Client acceptance

Corrie Smillie, Executive Assistant to Audit Committee
City of Calgary

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1. Introduction

1.1 Project Objectives and Scope

1.1.1 Project background and rationale for this review

The City of Calgary Audit Committee identified the need for a comprehensive review of its Corporate Asset Management Plan (CAMP) and Asset Management Policy (AM Policy). This review focused on asset management documentation, practices, and processes, as well as the identification of critical infrastructure, decision-making processes, and investment prioritization.

This report outlines the interim findings of the review. It includes tasks completed to-date, including review of the AM Policy, CAMP, other associated documentation, approach for critical infrastructure identification, and decision-making processes related to asset reinvestment. Notable insights and opportunities for improvement were identified.

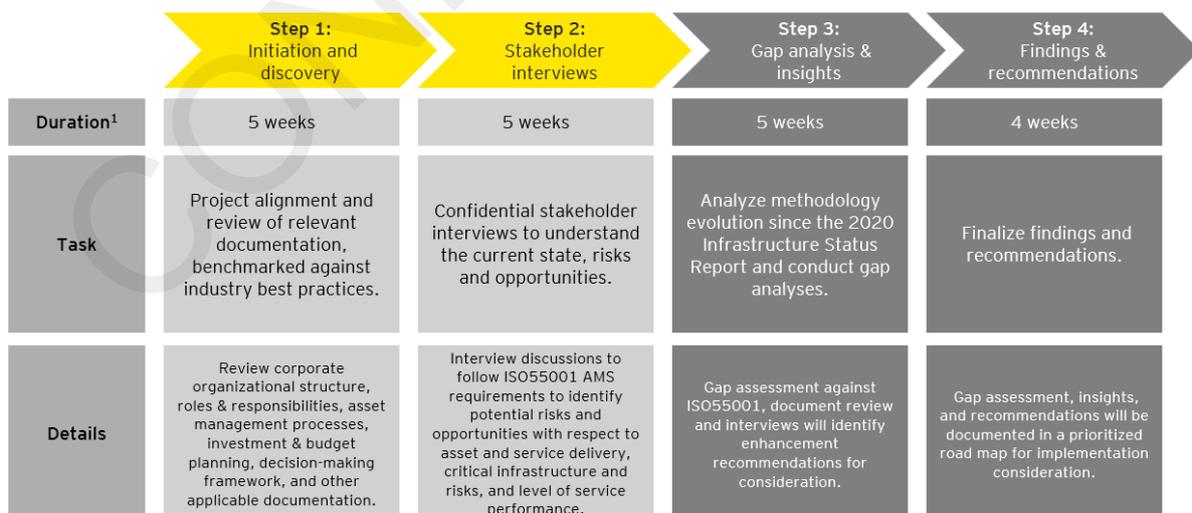
1.1.2 Key Objectives

The key objective of this review is to assess the current methodologies for identifying critical infrastructure and the decision-making processes for asset re-investment, providing notable insights and actionable opportunities for improvement.

1.2 Approach and Timelines

The approach included a review of relevant documentation and information, as well as twenty interviews involving participants from administration, executive leadership, and council. The review includes a four-step approach, with this interim report summarizing findings from the first two steps: initiation and discovery, along with participant interviews, as outlined below.

Figure: Timeline and Approach



1. Only step 1 and 2 are included in this interim report.

1.2 Methodology

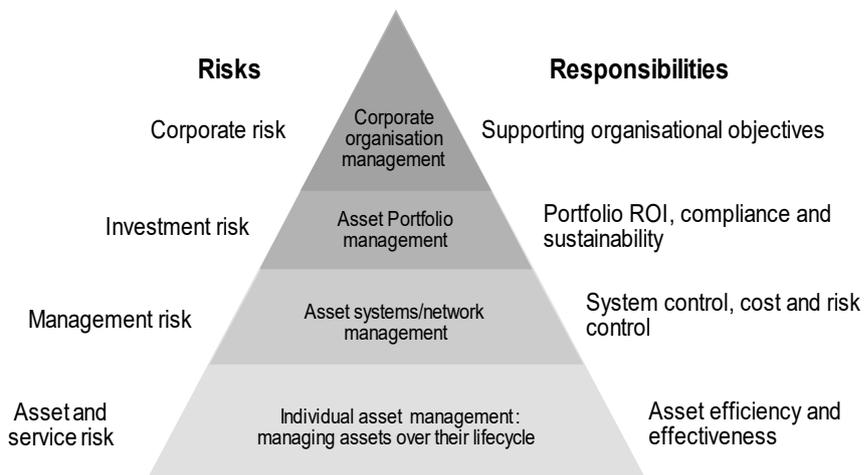
We employed a comprehensive approach to review asset management practices at The City of Calgary (“The City”), focusing on the Corporate Asset Management Plan (CAMP) and the Asset Management Policy (AM Policy). Our methodology included a thorough examination of relevant documentation and materials, as well as conducting stakeholder interviews. We leveraged our proprietary asset management excellence model, adapted from ISO 55001 and the Institute of Asset Management’s (IAM) Conceptual Asset Management Model, along with insights from EY’s Global Government and Infrastructure team, to identify any potential opportunities for consideration within the documentation, frameworks, systems, and processes.

Figure: EY Asset Excellence Model



This holistic approach focused on collating insights into current asset management practices, particularly with respect to critical infrastructure identification and reinvestment processes. This also included review of the risk management process and understanding of roles and responsibilities throughout EY’s asset management hierarchy.

Figure: Asset Management Hierarchy



1.2.1 Documentation Review

We requested documentation from The City to understand the current state of asset management practices and processes, with a particular emphasis on municipally mandated critical infrastructure identification and reinvestment. The City has developed an asset management framework (Figure below), aligned to ISO 55001, and includes a number of documents that supports the framework.

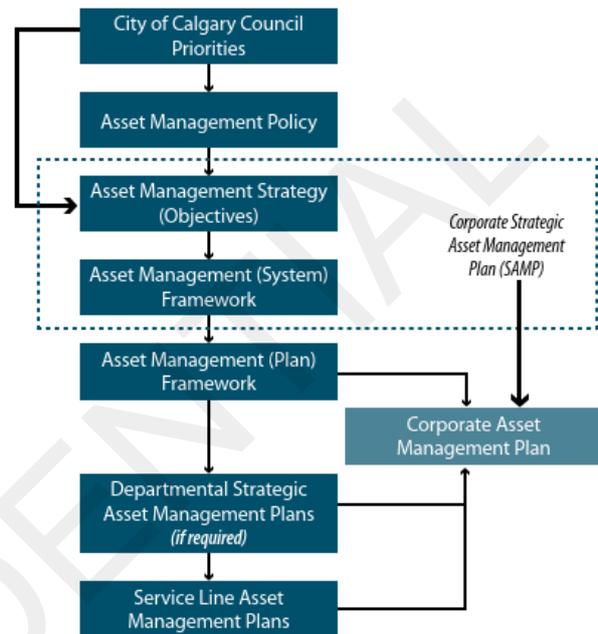
Our comprehensive review encompassed the CAMP, AM Policy, service line-specific Asset Management Plans (AMPs), critical infrastructure documentation, and prioritization process documentation, among others, to gain additional context (see Appendix A for a detailed breakdown of the reviewed documents).

1.2.2 Stakeholder Interviews

This engagement aimed to understand the current asset management processes and practices across the organization. Over five weeks, we conducted twenty interviews (notes were recorded anonymously) to develop insights and trends into the asset management system. The interview questions were developed aligned to ISO 55000 set of standards and aimed to gather information on the following topics (see Appendix B for detailed interview questions):

1. **Introduction:** Understanding individual roles and responsibilities, team interactions with asset management activities, and primary contacts during role execution.
2. **Context of the organization:** Overview of the City's vision for asset management and service delivery, including alignment with specific service line approaches.
3. **Stakeholder needs and expectations:** Exploring the integration of stakeholder needs into asset management, service delivery, and the incorporation of performance criteria in management approaches.
4. **Scope of asset management:** Understanding the use and reference of key documents, asset lifecycle support, criticality assessment, decision-making frameworks, and investment prioritization processes.
5. **Leadership:** Examining the designation of asset management champions, communication standards, leadership messaging, policy reinforcement, and clarity of roles and responsibilities within the organization.
6. **Support and planning:** Assessing resource adequacy, competency, information needs, standardization, and risk management.
7. **Performance evaluation:** Evaluating the effectiveness of asset management, continual performance, and the consideration of predictive actions.

Figure: City of Calgary Asset Management Framework (2022 Corporate Asset Management Plan)



This approach provided a holistic view of the organization and valuable insights into current practices, particularly regarding critical infrastructure identification and reinvestment processes.

1.2.2.1 Stakeholder Interviewee Selection Criteria

After developing our stakeholder interview questioning approach, we collaborated with the Audit Committee to select a representative sample of interview participants across several departments. This included individuals with various roles and responsibilities at varying levels in the organization to gather a comprehensive review of the current asset management processes and practices. Participants included members of City Council, the Executive Leadership Team (ELT), and personnel from administration departments. The table below summarizes the departments represented.

Table 1: Summary of Interviewed Departments

Department
City Council
Executive Leadership Team
Corporate Planning and Financial Services
Infrastructure Services
Operational Services including: Water Services Calgary Transit Mobility Facility Management
Planning and Developmental Services

2. Interview Insights and Observations

Through our series of twenty stakeholder interviews with participants from City Council, the ELT, Corporate Planning and Financial Services, Infrastructure Services, Operational Services, and Planning and Developmental Services, we have gathered and synthesized key insights aligned with our interview topics as described below.

2.1 Introduction: Understanding individual roles and responsibilities, team interactions with asset management activities, and primary contacts during role execution.

Relevant Insights:

The re-organization that took place two years ago has led to the creation of new roles and the reassignment of existing roles to new departments across the organization. The City has made significant strides in defining roles and responsibilities, ensuring that most areas have clear guidelines. However, this is a work in progress, and some roles and responsibilities could be clarified further. Additionally, the development of a matrix organization has been instrumental in facilitating communication and collaboration across different departments, business units, and services. This structure has enhanced interactions and teamwork within the organization, but some parts of the organization remain siloed. Additional change management activities to help improve collaboration and alignment across administration would be seen as beneficial.

2.2 Context of the organization: Overview of the City's vision for asset management and service delivery, including alignment with specific service line approaches.

Relevant insights:

The City's Vision for asset management and service delivery was frequently mentioned throughout our interviews and is outlined in key documents such as long-term service line plans. Most interview participants mentioned the existence of strategic plans and priorities, however, it was acknowledged that more work is required to align service line teams with broader initiatives, as well as improve visibility across service lines.

Enhanced communication of strategic priorities and information from administration, to ELT, Council, and the community was recognized as an opportunity for improvement. There is significant data and information to support strategic priorities and decision-making, however the timeliness and method of how it is communicated could be refined.

2.3 Stakeholder needs and expectations: Exploring the integration of stakeholder needs into asset management, service delivery, and the incorporation of performance criteria in management approaches.

Relevant insights:

There is consistent acknowledgment of the importance of understanding and meeting the needs and expectations of both customers and Council. This includes addressing concerns related to levels of service, prioritizing asset maintenance, and investment strategies. Most interview participants recognized the need for better communication and transparency with the public, as well as enhancements to the reporting of information to ELT and Council. Furthermore, our interviews revealed gaps in customer levels of service and meeting customer expectations, with an emphasis on technical levels of service rather than customer-focused metrics. Better communication of risks and associated impacts was acknowledged, especially when discussing reducing levels of investment and the subsequent implications on long-term levels of service. It was also noted that conflicting priorities sometimes arise between Council and administration, with respect to investment priorities, especially with respect to public pressure.

2.4 Scope of asset management: Understanding the use and reference of key documents, asset lifecycle support, criticality assessment, decision-making frameworks, and investment prioritization processes.

Relevant insights:

The current asset management documentation within the organization includes significant detail, and generally is seen as beneficial to administration. The participants revealed varying levels of familiarity with the asset management framework, and documents such as the AM Policy, CAMP, and ISR. Key documents have undergone periodic revisions but not always in a timely manner or predetermined schedule, and some documents remain quite outdated. Asset condition assessments are performed throughout most service lines, but gaps in data and information still remain. With respect to critical infrastructure identification, there appears to be a primary focus on asset condition, rather than a

combination of multiple criteria such as level of service requirements, single point of failure, asset condition, and service criticality. The investment prioritization process considers several criteria and appears to take a holistic approach to capital prioritization. This prioritization criteria are currently being updated. It was noted that the process could be improved by further involvement with Finance, especially when connecting capital investment and growth with corresponding requirements for increased operating budgets. The level of resources and timeline of the budgeting process was identified as being quite onerous. The budget process appears to begin more than a year before budget submission. This is seen as a significant investment of time which redirects resources away from their day-to-day responsibilities. Opportunities could include streamlining the budgeting process, clearer communication of expectations and expected budgets, as well as better utilization of data and information from previous budget cycles.

2.5 Leadership: Examining the designation of asset management champions, communication standards, leadership messaging, policy reinforcement, and clarity of roles and responsibilities within the organization.

Relevant insights:

Leadership appears to be focused on building trust within the corporation and ensuring that the work being conducted supports the overall strategic priorities of The City. This includes fostering collaboration across departments, addressing challenges, and reinforcing relationships. The importance of strategic planning and aligning efforts with The City's priorities was also noted. However, it was also acknowledged that gaps remain across administration with respect to relationship building, alignment, and clarity of roles and responsibilities. Some "grey areas" still existing with respect to asset ownership responsibility, where some assets and services overlap.

2.6 Support and planning: Assessing resource adequacy, competency, information needs, standardization, and risk management.

Relevant insights:

Due to the reorganization and realignment, and the resulting reallocation of roles within the organization, there are varying levels of competency within service lines, aligned to specific assets and services. This was not completely unsurprising within such a large organizational change. This offers an opportunity to build cross service capacity within the organization, as previously mentioned. Several service lines have more mature processes than others, suggesting an opportunity to improve alignment and the consistency of asset management processes across the organization. It was mentioned that efforts are already underway to enhance consistency. There is significant differences in data collection, management, analytics, software, and tools across all service lines. Standardization and support to align data strategies was identified as a significant opportunity to improve efficiency throughout the asset management process.

2.7 Performance evaluation: Evaluating the effectiveness of asset management, continual performance, and the consideration of predictive actions.

Relevant insights:

The evaluation of asset management effectiveness highlighted several good practices and several areas for improvement. Currently, each service line monitors and reports on their own KPIs and metrics. Technical levels of service appear to be well-developed, but there is an opportunity to better develop customer levels of service to better meet customer expectations, and also provide better evaluation of levels of service across all service lines. This would potentially improve investment prioritization by evaluating all services lines against a somewhat common criteria, improving better understanding of service performance which would then identify where the focus for investment should occur.

Some benchmarking against other Canadian municipalities is performed, though it could be more consistent across the organization. Lookbacks and lessons learned appear to be carried out in some areas, and it was acknowledged that these could be conducted more frequently to gain valuable insights. No formal capacity building or sharing of best practices currently exists, based on feedback from the interview participants, but was acknowledged as an important function for administration.

3. Review of the Asset Management Policy (AM Policy) and Corporate Asset Management Plan (CAMP)

3.1 Overview of the AM Policy

Document Owner: Asset Management Planning

Distribution: All administration departments, specifically Infrastructure Services and Operational Services, ELT, and Council

Intent: Provide AM Policy requirements that must be adhered

Revision: 2024

Summary: The Asset Management Administration Policy (AM Policy), endorsed by Council and ELT, establishes a comprehensive framework for managing The City's infrastructure assets. Its primary purpose is to set the principles and guidelines for City departments to effectively manage and maintain their assets, ultimately enhancing efficiency, resilience, risk management, compliance, sustainability, and stewardship. The policy emphasizes the importance of providing safe and inclusive neighbourhoods and advocates for continuous improvement in alignment with Council priorities. The AM Policy aligns with ISO 55001 standards, encouraging a holistic lifecycle perspective that integrates planning, acquisition, operation, maintenance, renewal, and disposal of assets. It mandates adherence from all City employees, including those in the Calgary Police Service, with non-compliance potentially resulting in corrective actions. Additionally, the policy delineates roles and responsibilities across the organization, underscoring the collaborative effort required to sustain effective asset management practices.

3.1.1 Observations for Consideration

The review highlighted the following key observations in the AM Policy:

Observation 1: Varied awareness of the AM Policy and overall AM framework.

Detailed Observations: Interview participants revealed varying levels of familiarity with the AM Policy, with some interview participants indicating minimal awareness regarding its contents. For example: Several interview participants were not familiar with the terminology, role, and responsibility of "Asset Stewards".

Implications: Insufficient awareness may lead to inconsistent application and understanding of the Policy, resulting in interested parties not adhering to the guidelines, roles, and responsibilities outlined in the Policy, which can negatively impact the effectiveness of asset management practices.

Observation 2: AM-related Documents Revision Frequency.

Detailed Observations: Revisions to the AM Policy occurred in 2010, 2016, and 2024. The AM Policy does not specify the required frequency of review and revision. Additionally, we observed variability in the review and revision cycles of several related documents, such as the Asset Management Guidelines, which were last updated in 2008, and service line-specific Asset Management Plans (AMPs). Some service lines expressed hesitancy in providing their service line AMPs due to the age of the documents, with some being over five years old.

Implication: The absence of a time-based, periodic review frequency may lead to outdated, irrelevant practices and policies that do not align with current industry standards, such as updates industry regulations or standards such as ISO 55000, or changing organizational, Council, and community needs. The organization may face compliance issues, inefficiencies, and missed opportunities for improvement, ultimately impacting the effectiveness of asset management practices.

Observation 3: AM Policy enforcement.

Detailed Observations: The AM Policy outlines consequences for non-conformance; however, specific consequences are not defined. Additionally, there is some ambiguity regarding the escalation measures available to address non-conformance in a timely manner. When interview participants were asked about the enforcement of the AM Policy, several indicated they were not aware of non-conformance implications or indicated no knowledge of previous non-conformance issues.

Implications: Without reinforcing the importance of the AM Policy, and implications of non-compliance, the effectiveness of the policy will be reduced, creating challenges in maintaining consistent asset management practices across the organization.

3.2 Overview of the CAMP

Document Owner: Asset Management Planning.

Distribution: All administration departments, specifically Infrastructure Services and Operational Services, ELT, and Council, and made publicly available.

Intent: Provide asset management guiding principles.

Revision: 2022 (reviewed periodically, no specific review cycle)

Summary:

The 2022 Corporate Asset Management Plan (CAMP) serves as a guiding document that consolidates asset management information across City of Calgary service lines, and is well aligned to the ISO AM standards. Its primary purpose is to provide AM guidance relating to the current state of municipal assets, enabling comparisons across service lines, asset conditions, criticality, maintenance and service levels in relation to community needs and strategic priorities.

Utilizing the 2020 Infrastructure Status Report (ISR), the CAMP evaluates Calgary's infrastructure portfolio, identifying trends in asset health, service performance, and funding needs. It highlights the City's infrastructure funding gap and presents strategies to manage resource limitations, such as prioritizing high-risk infrastructure, adjusting service levels, and exploring alternative funding sources. Additionally, the CAMP provides a framework for comparing the relative condition and criticality of assets across different service areas, helping decision-makers assess where investments will have the greatest impact on service continuity, community well-being, and risk mitigation.

Beyond financial considerations, the CAMP integrates risk management, climate resilience, and long-term sustainability planning into asset management practices. As an evolving document, it ensures that infrastructure decisions remain aligned with Calgary's economic, environmental, and social landscape, while supporting the development of the City's long-range financial plan and future service budgets.

3.2.1 Observations for consideration

The review highlighted the following key observation with respect to the CAMP:

Observation 1: Consideration for evaluating external factors.

Detailed Observations: The report may consider inclusion of a framework or guidance for evaluating external factors such as risks related to employment rates, interest rates, or political and legislative changes that may impact asset management practices. External factors are referenced several times throughout the document but are not clearly included in evaluation frameworks.

Implications: Could potentially lead to inconsistent risk assessment across service lines, opportunity to address external threats or opportunities, and sufficient resource allocation due based on prioritization. The City may face increased vulnerability to external threats, operational inefficiencies and higher costs, and strategic misalignment, impacting long-term objectives.

Observation 2: Competing stakeholder needs.

Detailed Observations: The CAMP recognizes service owners, customer levels of service for each service line, as well as the interests of the Council and citizens, however the document does not specifically outline a process for prioritizing these needs, however

Implications: This could potentially result in conflicting priorities and expectations, resulting in misaligned decision-making and challenges meeting levels of service targets and strategic goals.

Observation 3: Customer levels of service metrics and targets.

Detailed Observations: The CAMP emphasizes technical levels of service metrics for each service line, which are presented using a performance rating scale (green, yellow, and red), while customer levels of service are inconsistently described in a more general manner. Technical levels of service provide valuable insights for each respective service line, however they may not fully capture customer expectations for that respective service. Appendix A in the documents primarily refers to technical levels of service metrics for each service line.

Implications: This may result in a misaligned understanding of overall level of service performance, as customer levels of service expectations are not quantitatively measured and reported. The City therefore will be misaligned to customer levels of service expectations, leading to potential levels of service gaps, and corresponding issues with customer trust.

4. Review of the Infrastructure Status Report (ISR)

4.1 Overview of the Infrastructure Status Report

Document Owner: Asset Management Planning

Distribution: ELT, City Council, Capital Investment Planning, Finance, Service Owners, and made publicly available

Intent: Serves as a guide for City Council to make informed infrastructure investment decisions ahead of the development of 2023-2026 service plans and budgets.

Revision: 2020 (reviewed and revised each budget cycle, four-year intervals)

Summary:

The 2020 ISR serves as a critical reporting and communication document that provides a comprehensive overview of City-owned infrastructure assets. Produced every business cycle, the report is intended to serve as a vital resource for City Council and ELT assess infrastructure investment needs and identify short- and long-term risks. The report serves as a guide for City Council to make informed infrastructure investment decisions ahead of

the development of the 2023-2026 service plans and budgets. The ISR also served as a precursor to the 2022 CAMP.

The primary objective of the ISR is to evaluate the state of municipal infrastructure, estimate current replacement values, and identify funding gaps that must be addressed to ensure long-term service delivery. The 2020 report provides an updated inventory of City-owned assets for each service line. It also introduces key developments in asset management, such as aligning infrastructure data with service lines, incorporating natural infrastructure, and integrating energy consumption metrics into asset planning.

By compiling asset information from multiple business units, the ISR supports the development of strategic asset management practices that balance financial constraints, risk management, and service level expectations. It highlights the growing infrastructure funding gap and emphasizes the need for proactive investment strategies to address maintenance, renewal, and expansion needs.

4.1 Observations for consideration

Observation 1: Opportunity to optimize information, the level of detail, and how the ISR is communicated.

Detailed Observations: While the ISR highlights key areas such as the infrastructure gap for the City, current replacement value (CRV), physical condition of each service lines assets, it does not necessarily benchmark the changes against the last report, as well as clearly connecting the information and data to specific customer levels of service performance and risks. The document could measure customer levels of service performance across services lines, including funding gaps/disparities, the growth of assets within a service line, and corresponding resource requirements for maintenance, and decreased funding in certain service lines compared to previous years. This additional detail may enhance the understanding of each service line, the corresponding customer levels of service performance, to help provide ELT and City Council additional insights for improved decision-making, and better communicate the implications and risks of varying levels of investment on short and long-term levels of service, and future capital investment needs (10+ years).

Implications: ELT and Council may not necessarily understand complete risks and impacts to level of service performance and other factors driving infrastructure gaps, thus making it more difficult to develop prioritized strategies to address gaps. This may lead to misdirected funding for some service lines, unallocated resources, and to the ability to effectively plan and mitigate asset and level of service deficiencies.

5. Review of Critical Infrastructure Identification

5.1 Current Process for Identifying Critical Infrastructure

Based on the documentation and information reviewed, as well as the interviews conducted, it appears that the current process for identifying critical infrastructure is decentralized, with each service line generally developing their own specific approach for identifying critical assets. Asset condition and criticality assessments are performed by

each service line and monitored by the business unit. There appears to be limited cross-service line collaboration to standardize identification of critical infrastructure.

Typically, there appears to be two stages in identifying critical infrastructure. The first stage involves performing a criticality assessment of the service line assets. Criticality is generally defined as the relative service risk of an asset, assessed to determine which assets are identified as a priority to minimize service failure. Service lines have their own scales to assess criticality, but as outlined in the CAMP, they typically follow a similar 1 to 5 scale, with 1 being the least critical (no impact on service) and 5 being the most critical (catastrophic impact on service). Service lines then rank their assets on a similar scale to understand asset criticality. While this process is outlined in the CAMP, this was not typically reflected in service line-specific AMPs or other documentation, based on what documentation was provided as part of this review.

The second stage involves assessing the condition of the service line's assets. To understand various asset conditions within a service line, condition assessments are conducted. These assessments are carried out by service line asset management representatives, engineers, or third parties, depending on the service line. The frequency of the condition assessments varies by service line and can be quarterly, bi-annual, annual, or sometimes longer. Asset condition is rated similarly to criticality, following a scale of 1 to 5, with 1 indicating that the asset is in excellent condition and 5 indicating that the asset has severe defects or is in 'Critical Condition.' While this process appears to be more mature in some service lines, other service lines appear to lack sufficient data, due to limited budgets and resources with respect to the number of condition assessments, or limited data entry from a previous, historical assessment where the data was not uploaded into the asset management system. As a result, the condition of some assets are unknown, and the service line then typically assumes the condition of an asset, based on the approximate age of the asset.

Most service lines appear to primarily focus on asset condition to determine asset criticality. Most service line-specific AMPs, or associated documentation, doesn't clearly articulate how criticality assessments are conducted within their service line. It was acknowledged that developing a criticality framework to be adopted within each service line, that provides some flexibility to consider service line-specific nuances, would improve alignment and identification of what assets and services are critical to The City. A list of critical assets by service line, or a City-wide criticality assessment, was not provided.

The CAMP provides guidance for condition and criticality scores to be multiplied together to produce a risk rating on a scale from 1 to 25. Criticality and condition profiles are used to monitor and manage risk effectively. Assets with a high criticality ranking are maintained in better condition, while assets with very low or low criticality may be allowed to deteriorate to a lower condition grade.

While the CAMP provides guidance for these calculations, we did not observe service line-specific scales to rank both condition and criticality. It was noted that service line-specific metrics measure asset condition over time, and are adjusted based on asset condition assessments when they are conducted.

5.2 Observations for Consideration

There appears to be several gaps observed in the current process for identifying critical infrastructure. Below are the key findings from our review:

Observation 1: Improved alignment across service lines

Detailed Observations: Each service line appears to have their own process for identifying critical infrastructure, conducting asset condition assessments, risk management, and developing asset management strategic priorities.

Implications: This appears to show varying levels of AM maturity across service lines and identifies an opportunity to share best practices. While some variation is expected, as each service line has different assets and services, this creates inconsistencies in identifying critical assets, and subsequent asset management practices.

Observation 2: Varying levels of data availability, quality, management and analytics.

Detailed Observations: Due to budget and resource constraints, several service lines indicated some limitations with respect to data required to better support asset management practices. Some service lines lack asset-related data and do not have complete asset condition data across their asset portfolio. While this situation is not uncommon, there is an opportunity to improve asset data to help improve identification of critical infrastructure and investment prioritization.

Implications: This can impact decision-making within and across service lines, associated with asset management activities, investment, and prioritization due to the lack of sufficient asset data.

6. Review of Asset Re-Investment Decision Making Process

6.1 Current Process for Prioritizing Asset Re-Investment

The current asset re-investment process appears to be a fairly structured approach and involves multiple steps to help ensure that investments align with community and Council priorities, and strategic goals. The following section outlines the process as informed by reviewed documentation and stakeholder interviews:

The budget creation process typically begins more than a year before the start of the next 4-year budget cycle. Each of the 61 service lines initiate the process by identifying their specific needs and forecasting operating and capital budgets. This development is informed by:

- Discussions within their respective service line
- Reviewing asset condition assessments
- Analyzing service demand and growth
- Utilizing technical levels of service
- Conducting customer engagement surveys to assist needs identification

Following the budget development, each service line submits its budget request through an established intake framework. This request is then reviewed and prioritized by the Capital Priorities and Investment business unit.

A steering committee comprised of representatives from various service lines and departments, assesses the prioritization criteria in collaboration with the Capital Priorities and Investment department. These criteria are established and weighted to ensure alignment with City priorities and capital investment drivers. The framework categorizes projects according to their necessity, impact, and alignment with strategic goals. The following categories are used to assess and prioritize investments:

1. **Required:** Investments are prioritized based on their necessity to fulfill legal obligations from provincial or federal legislation, compliance with environmental protection regulations, and adherence to agreements and contracts for future cycles. Additionally, these investments must meet health and safety standards.
2. **Reduces Risk:** Investments that reduce risk focus on critical assets essential for preventing service disruptions. These investments should be completed or substantially completed within the four-year business cycle, ensuring that they meet minimum levels of service and comply with legal, health, and safety standards.
3. **Economic Resilience:** Economic resilience is enhanced through investments that stimulate job creation and economic growth. Projects that support sustainable economic diversification and attract and retain investment and talent are prioritized. Furthermore, enhancements that contribute to an increase in gross domestic product (GDP) are also considered.
4. **Social Resilience:** Social resilience is fostered by initiatives that promote equitable outcomes for all community members. Investments that remove barriers for underserved groups and advance truth and reconciliation with Indigenous Peoples are prioritized. Additionally, projects that improve community participation and access to services are essential.
5. **Climate and Environment:** Investments aimed at addressing climate and environmental concerns are prioritized based on their potential to reduce climate risks and enhance resilience. Projects that contribute to the reduction of greenhouse gas (GHG) emissions, protect, restore, or construct natural infrastructure, and minimize resource consumption and waste generation are key focus areas.

The results of this prioritization are presented to the steering committee for evidence-based decision-making. This facilitates informed discussions regarding budget allocations across service lines.

The budget recommendations from the steering committee are then presented to ELT for final review and adjustments, and subsequently presented to Council for approval. During this stage, Council engages with service lines to request clarifications and answer questions, and negotiations may occur between service lines and Council to increase or decrease budgets. After this step, the Council approves the service plans and budget for the forthcoming budget cycle.

6.2 Observations for Consideration

The review identified several observations for consideration in the current process for asset re-investment decision making. Below are the key observations for consideration from our review:

Observation 1: Earlier support from Finance in the budget process.

Detailed Observations: Each service line appears to have its own process for initially identifying needs and developing the budget for each cycle, ahead of their submission.

Implications: This may result in inconsistencies, as different service lines may apply different criteria for prioritizing their needs (e.g., improving asset condition ratings, technical service levels, and customer service levels). Consequently, this could impact the prioritization of investments, assets, and services, with some service lines potentially requesting higher budgets than required, not necessarily aligned to customer level of service performance.

Observation 2: Varying levels of investment detail provided

Detailed Observations: Service lines submit their budgets using a standard intake form to Capital Priorities and Investments, however some fields within the form are often incomplete, or are provided with varying levels of detail. Consistent levels of detail in these fields are required to assist the Capital Priorities and Investments business unit to effectively prioritize investments.

Implications: The Capital Priorities team spends additional time gathering missing information. Furthermore, this may increase the possibility of variations in the prioritization process due to varying levels of investment information.

Observation 3: Requirement for customer level of service-based investment allocation

Detailed Observations: Some service lines appear to receive funding based on somewhat subjective criteria, rather than customer level of service requirements, identified based on level of service performance gaps. Without a more consistent framework for measuring customer levels of services across service lines, some service lines may be more effective in justifying a unique business case based on various factors, such as economic, social, or potentially political considerations.

Implications: This may lead to miss-directed budget allocations, reducing trust and confidence with the budgeting process, which could create misalignment across service lines and the Council.

7. Additional Observations for Consideration

Due to our holistic approach, we have identified four additional gaps from our review. These gaps are described below:

Observation 1: Gaps in understanding City Council's needs.

Detailed Observations: Through our interviews, we learned that City Council was engaged more frequently prior to the reorganization. This engagement allowed Council to be better informed about changes within the administration and to stay updated on the needs of service lines. Additionally, Councillors expressed a desire to see the asset condition and critical assets within their Ward to make informed decisions on behalf of the constituents they represent; however, this is currently not in place.

Implications: Inadequate engagement may hinder the Council's ability to support asset management initiatives and create misalignment with city priorities. If City Council is not engaged frequently, they may lack critical information regarding the current state of assets, funding needs, and emerging challenges.

Observation 2: Opportunity to build capacity.

Detailed Observations: The reorganization within the City shifted roles throughout the organization, and many individuals are now in roles and/or service lines that they were not in before. This has understandably created varying levels of competency within service lines. Additionally, our documentation review revealed that service line maturity assessments indicated opportunities to build capacity within service lines, highlighting the potential for knowledge expansion and competency identification.

Implications: This presents the opportunity for the City to build capacity and enhance overall performance. By investing in training and development, the organization can mitigate the risk of financial losses associated with poorly managed assets, which can lead to inefficiencies, increased operational costs, and missed investment opportunities.

Observation 3: Central repository for asset management information and guidance.

Detailed Observations: During the documentation review process, it was observed that asset management documentation was limited to specific service lines or business units. It appears that there is no central repository for asset management documentation within the organization. A central repository was noted as being beneficial to share best practices and improve efficiencies.

Implications: May lead to inefficiencies, fragmented information, continuity and increased difficulty in accessing critical data. This may create compliance risks, and ultimately impact the organization's ability to consistently manage assets.

Observation 4: Opportunity to better integrate climate risks into AM practices.

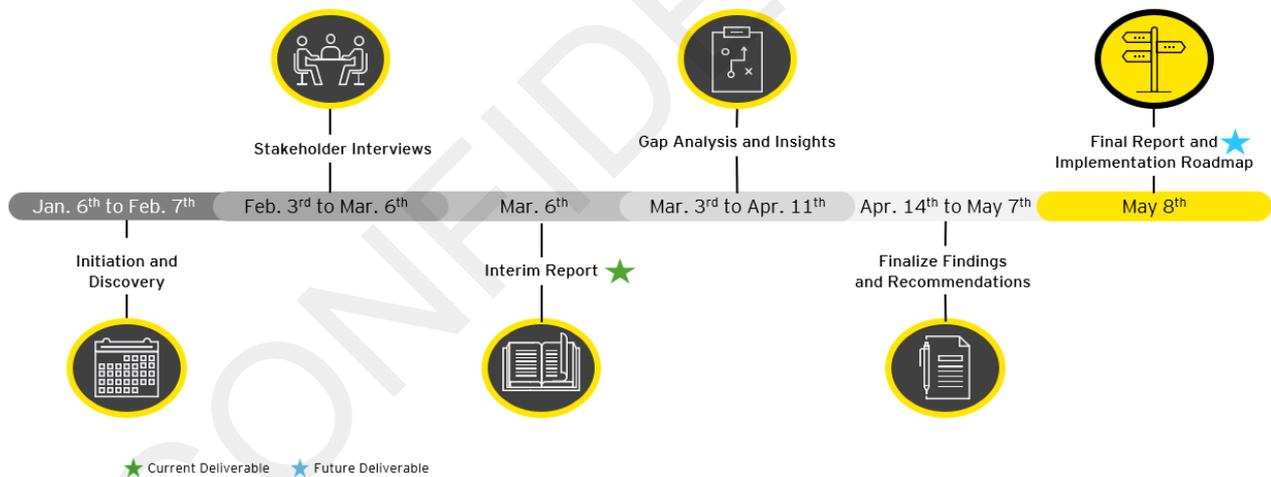
Detailed Observations: Although climate and the environment are categories within the asset reinvestment decision-making criteria, there is an opportunity for climate and sustainability to be integrated earlier in the process. This could involve embedding climate and sustainability within service lines to assist in the needs identification process when building budgets and in identifying projects or investments that have a positive impact from a sustainability and climate perspective, ultimately contributing to improved resilience of City of Calgary assets and services.

Implications: Missing the opportunity to integrate climate and sustainability earlier into asset management processes can lead to missed city-wide sustainability goals, increased long-term costs, inefficient resource allocation, and regulatory risks.

8. Conclusion

8.1 Next Steps

The next step of this project is to perform a gap analysis against ISO 55000 and best practices, document the methodology evolution since the 2020 ISR, finalize findings and recommendations, and develop a prioritized roadmap of recommendations for the City’s consideration. This will be included in the final report, which will be delivered in early May.



Appendix

Appendix A: Documentation Reviewed

Document Reference	Description
AIP Management Guideline	Outlines: project management compliance, due diligence, documentation, risk assessment, and continuous improvement within Calgary Transit's Transit Service Systems.
Asset Management Administration Policy	Contains: Purpose, Policy Statement, Legislative Authority, Roles and responsibilities, and consequences
Asset Management Guidelines	Comprehensive document outlining corporate documents. Asset management principles, and the state of asset management at the City of Calgary
Bridges and Structures Asset Management Plan	Contains: Asset overview, Condition assessments, operational maintenance, level of service, asset management strategies, and resource planning.
Calgary Transit Asset Management Level of Service Customer Commitment	Outlines Calgary Transit's customer level of service metrics such as Safe, Reliable, Helpful, Information, Easy to Use, and Clean
Calgary Transit Asset Management Levels of Service Summary	Detailed Calgary Transit Customer Levels of Service (LOS) per service area, outlining customer LOS measure, targets, and areas of opportunity
Calgary Transit Asset Management Plan	Contains state of good repair for Calgary transit, asset planning methodology, levels of service, infrastructure status, investment needs and financing, and next steps.
Calgary's Asset Management Strategy	Defines asset management at the City of Calgary, Principles, and Elements of an effective asset management plan
Capital Infrastructure Investment Drivers and Criteria	PowerPoint outlining the capital infrastructure investment drivers such as supporting the delivery of the city's services, help building great neighbourhoods, equitable outcomes, among others.
Corporate Asset Management Plan (CAMP)	Builds in the Infrastructure Status Report (ISR) and outlines each service lines asset condition trend, asset condition, current replacement value (CRV), as well as asset investment needs, and practices and improvement strategies.
Drinking Water Asset Management Maturity Assessment Report	Outlines the results of the Asset management maturity assessment for the city of Calgary's Water Utilities Portfolio.
Drinking Water Strategic Management Plan (AMP)	Document is under development - outlines the long-term strategy of the management of assets for the Drinking water service line.
Facilities Management - Recreation Sustainment Recommendations - DRAFT	Outlines recommendations from building condition assessments (BCAs) and estimated costs for each Recreation building needing repairs, replacement parts, or demolition to assist in developing the Facility Management budget.
Facilities Management - Roads Sustainment - DRAFT	Outlines recommendations from building condition assessments (BCAs) and estimated costs for each Roads building needing repairs, replacement parts, or

Document Reference	Description
	demolition to assist in developing the Facility Management budget.
Facilities Management - Sustainment Recommendations - DRAFT	Outlines recommendations from building condition assessments (BCAs) and estimated costs for each Facility Management building needing repairs, replacement parts, or demolition to assist in developing the Facility Management budget.
Facilities Management - Calgary Fire Department Sustainment Recommendations - DRAFT	Outlines recommendations from building condition assessments (BCAs) and estimated costs for each Fire Department buildings needing repairs, replacement parts, or demolition to assist in developing the Facility Management budget.
Facilities Management - Parks Sustainment Recommendations - DRAFT	Outlines recommendations from building condition assessments (BCAs) and estimated costs for each Parks buildings needing repairs, replacement parts, or demolition to assist in developing the Facility Management budget.
Facility Management Asset Management Monthly Report	Monthly Asset Management Report that provides metrics such as Facilities condition, Total recorded assets in EAM, Average Building condition from Building Condition Assessments, among other metrics.
Facility Management Lifecycle Investment Management Audit	Report from the City Auditors Office assessing the effectiveness of Facility Managements lifecycle costs, controls over the building condition assessments, risk framework to identify critical assets, and prioritization criteria.
Facility Management Service Plan	Provides a description of Facility Management, Customer survey results, performance metrics, and goals for 2023 to 2026.
ImagineCALGARY Plan for Long Range Urban Sustainability	Calgary's 100-year vision and goals with targets. Developed in 2007, and incorporated results from 18,000 Calgarians.
Infrastructure Services Organizational Chart	Infrastructure Services Organizational Chart
Infrastructure Status Report (2020)	Report outlining the status of City owned assets and outlining short- and long-term infrastructure risks.
Integrated Risk Management Administrative Guidelines	Contains: Purpose, Leadership statement, Guidelines, and Corporate Integrated Risk Management Framework
Integrated Risk Management Policy	Contains: Policy statement, purpose, definition, applicability, and procedure of managing risks and reporting to council.
ISO 55000: 2024 Asset Management Vocabulary, overview and principles	Outlines a comprehensive asset management framework, providing an overview of principles and guidelines.
ISO 55001: 2024 Asset Management - Asset management system - Requirements	Provides standards for asset management including leadership, stakeholder engagement, risk assessment, continuous performance evaluation, and alignment with organizational goals, among standards.
ISO 55002: 2018	Outlines that application of ISO: 55001 through emphasizing context recognition, stakeholder

Document Reference	Description
Asset Management - Management Systems - Guidelines for the Application of ISO: 55001	engagement, and sustainable value creation through effective practices.
Mobility AM Maturity Assessment Report	Outlines the results of the Asset management maturity assessment for the city of Calgary's Mobility Portfolio.
Mobility Asset Condition Information	Contains graphs of pavement condition, mobility asset condition, and other metrics to display condition over a period of time.
Mobility Asset Inventory Report - 2023	Outlines the asset type per subservice line and displays the unit of measure and changes in units from 2022.
Operational Services Organization Structure	Operational Services Organizational Chart
Pavement Asset Management Plan	Outlines the state of pavement assets, levels of service, asset management strategy, and plan improvement and monitoring.
Rail Systems Communications Asset Management Plan	Currently under development, outlining the state of assets, risk profile, management strategies, and improvement planning.
Service Investment Process-Capital Prioritization Criteria 2023-2024	Details the 2023 to 2023 service plans and budgets, including community indicators and performance measures, and description and purpose of each service line.
The City of Calgary - Organizational Structure 2025	City of Calgary Organizational Chart 2025

Appendix B: Stakeholder Interview Questions

Participant Questions: This list is not exhaustive; we may pose questions that are not included here, and time constraints may prevent us from addressing all items. This list of questions will serve as a guide, recognizing that each participant has a unique role in relation to asset management and investment activities.		Estimated time per section
1.00	Introduction	5 Minutes
1.01	Tell us about your role and responsibilities, including your team's interaction with asset management activities?	
1.02	Who do you/your team primarily interact with while performing your role?	
2.00	Context of the Organization	5 Minutes
2.01	Can you provide an overview of The City's vision and approach with respect to asset management and service delivery?	
2.02	Does each service line have a specific vision and approach with respect to asset management and service delivery? If so, does this incorporate or align to The City's vision?	
3.00	Needs and Expectations of Stakeholders	5 Minutes
3.01	How are the needs and expectations of the following stakeholders incorporated into the activities of your role/team: Community, Council, and Administration.	
	Are these effectively integrated into The City's approach to asset management and service delivery?	
	How are these measured, monitored, and communicated?	
3.02	Are these level of service performance criteria factored into the approach to asset management within your area of responsibility?	
4.00	Scope of Asset Management	15 Minutes
	Asset Management	
4.01	How often are the Asset Management Plan (AMP) and asset assessments reevaluated?	
4.02	Does the asset management policy adequately address the organization's requirements? If not, why? How often do you refer to the asset management policy, CAMP, or AMP?	
4.03	Do current documents support the entire asset lifecycle (planning, asset creation, operation, maintenance, removal/refurbishment/renewal)?	
4.04	How is asset condition and level of service performance assessed and evaluated? Is this approach consistent?	
4.05	How is asset criticality defined and managed within your department, and how does it align with the city's strategic goals? Is it standardized? How is asset criticality and risk identified, and what criteria are used? Is this approach consistent?	
4.06	Are asset criticality assessments reviewed periodically? If so, what is the process followed for these reviews, and how do they incorporate feedback from end-customers?	
4.07	How does asset criticality influence maintenance tactics and the prioritization of investments within your department, particularly regarding safety and service delivery?	
4.08	Has the definition or ranking process for criticality changed over time? If so, what changes were made to reflect evolving economic, environmental, and level of service considerations?	

4.09	Is this information adequate to support the identification of asset needs and level of service risks and opportunities? How are risks and opportunities prioritized and evaluated across the service line's portfolio?	
	Decision-Making Framework	
4.10	Is there a standard decision-making framework that considers The City's overall vision, relevant objectives from documents referenced in the AM policy, and the needs and expectations of community, council, and administration? Does this framework enable effective prioritization of investments across service lines?	
4.11	Does this decision-making framework vary across departments/service lines? Does it apply to individual investments only, or is it applied across the portfolio to assist with service line investment prioritization?	
	Budget and Investment	
4.12	Could you tell us about the budget prioritization process and speak to any capital allocation frameworks, criteria that you use?	
4.13	Do these processes and frameworks take asset criticality, levels of service, and risk into consideration? Are asset risks and levels of service risks identified based on varying levels of budget approval?	
4.14	Can various investment priorities be weighed against each other effectively, knowing the potential risks of redirecting budgets elsewhere? Can evaluation of budget trade-offs occur across service lines?	
4.15	Does the source of revenue impact investment decision-making and budgets (i.e., user fees, property taxes)? Have there been instances where a lack of coordination impacted project execution or funding allocation?	
4.16	How do you engage stakeholders in the budget and investment planning process?	
4.17	What metrics do you use to evaluate the success of capital investments?	
4.18	What challenges do you face in the capital investment planning process? How do you address these challenges to ensure effective budget management?	
4.19	Looking ahead, what trends do you foresee impacting capital investment planning in the municipality? How are you preparing to adapt to these trends?	
5.00	Leadership - Governance, alignment, and commitment	5 Minutes
5.01	Are there guidelines and standards relating to information required to be communicated to Council? Is the appropriate level of information provided to leadership to effectively communicate risks and opportunities to Council?	
5.02	Is there clear and consistent messaging from leadership regarding asset management and level of service strategic priorities, and how they will be achieved? Is the asset management policy reinforced and implemented by leadership consistently across the organization? If not, why?	
5.03	Are roles and responsibilities clearly understood within business units, departments, and across administration, as well as between Council and administration? How often are these reviewed?	

6.00	Support & Planning - Resources, knowledge, processes, and tools	10 Minutes
6.01	Do you have enough resources to be successful in your role?	
6.02	Is there an appropriate level of asset management competency and knowledge: within your team, department, administration?	
6.03	What additional information, data, or documents are required in carrying out your role?	
6.04	Should The City be more standardized across service lines and departments?	
6.05	What else can administration do to better align asset management policy, CAMP, and objectives? Do they support effective change management?	
6.06	Are AM risks and opportunities integrated with corporate risk management?	
6.07	Do you always know what your high priority risks are? How are these measured, monitored, and communicated? How often?	
6.08	Are improvement actions, timelines, responsibilities, and anticipated results included?	
6.09	Has the reorganization continued to create some challenges? If so, how?	
7.00	Performance Evaluation & Improvement - Continuous improvement	10 Minutes
7.01	Is The City's approach asset management and level of service monitored, measured, analysed and evaluated for effectiveness?	
7.02	How often are internal audits completed? Does this include business case and decision-making look-backs? What levels review these audits? How are results and actions developed?	
7.03	Are these actions subsequently reviewed for continual improvement?	
7.04	Have there been instances of nonconformity and corrective action? If so, can you provide an example?	
7.05	Has The City implemented or considered predictive action? (e.g. Scenario modelling)	
8.00	Other comments - Other opportunities for improvement	5 Minutes
8.01	Do you have any further comments to be considered?	
8.02	Are there any other questions or topics that should be explored?	