

<p>7. COMPREHENSIVE ASSET MANAGEMENT PROGRAM UPDATE</p> <p>MISE À JOUR SUR LE PROGRAMME DE GESTION INTÉGRALE DES ACTIFS</p>

COMMITTEE RECOMMENDATIONS

That Council:

- 1. Receive the update on the City's Comprehensive Asset Management Program (CAM) as described in this report;**
- 2. Receive the 2017 State of Asset Report (SOAR) as described in this report and attached as Document 1;**
- 3. Receive the Strategic Asset Management Plan (SAMP) as described in this report and attached as Document 2;**
- 4. Approve the non-financial next steps for the Comprehensive Asset Management Program as identified in this report.**

RECOMMANDATIONS DU COMITÉ

Que le Conseil :

- 1. Prenne acte des mises à jour sur le Programme de gestion intégrale des actifs (GIA) de la Ville décrites dans le présent rapport;**
- 2. Prenne acte du Bilan des actifs de 2017 décrit dans le présent rapport et joint séparément (document 1);**
- 3. Prenne acte du plan stratégique de gestion des actifs provisoire décrit dans le présent rapport et joint séparément (document 2);**
- 4. Approuve les prochaines étapes autres que d'ordre financier pour le Programme de gestion intégrale des actifs décrites dans le présent rapport.**

DOCUMENTATION/DOCUMENTATION

1. Director's report, Infrastructure Services, dated 30 May 2017 (ACS2017-PIE-IS-0002)

Rapport du Directeur, Service d'infrastructure, daté le 30 mai 2017 (ACS2017-PIE-IS-0002)

2. Extract of draft Minutes, Finance and Economic Development Committee, 6 June 2017.

Extrait de l'ébauche du procès-verbal, Comité des finance et du développent économique, le 6 Juin 2017

**Report to
Rapport au:**

**Finance and Economic Development Committee
Comité des finances et du développement économique
6 June 2017 / 6 juin 2017**

**and Council
et au Conseil
14 June 2017 / 14 juin 2017**

**Submitted on May 30, 2017
Soumis le 30 mai 2017**

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Ward: CITY WIDE / À L'ÉCHELLE DE LA VILLE File Number: ACS2017-PIE-IS-0002

SUBJECT: Comprehensive Asset Management Program Update

OBJET: Mise à jour sur le Programme de gestion intégrale des actifs

REPORT RECOMMENDATIONS

That the Finance and Economic Development Committee recommend Council:

1. **Receive the update on the City's Comprehensive Asset Management Program (CAM) as described in this report;**
2. **Receive the 2017 State of Asset Report (SOAR) as described in this report and attached as Document 1;**
3. **Receive the Strategic Asset Management Plan (SAMP) as described in this report and attached as Document 2;**
4. **Approve the non-financial next steps for the Comprehensive Asset Management Program as identified in this report.**

RECOMMANDATIONS DU RAPPORT

Que le Comité des finances et du développement économique recommande au Conseil :

1. **Prendre acte des mises à jour sur le Programme de gestion intégrale des actifs (GIA) de la Ville décrites dans le présent rapport;**
2. **Prendre acte du Bilan des actifs de 2017 décrit dans le présent rapport et joint séparément (document 1);**
3. **Prendre acte du plan stratégique de gestion des actifs provisoire décrit dans le présent rapport et joint séparément (document 2);**
4. **Approuver les prochaines étapes autres que d'ordre financier pour le Programme de gestion intégrale des actifs décrites dans le présent rapport.**

EXECUTIVE SUMMARY

The City of Ottawa maintains nearly \$42 billion (in 2017 dollars) in existing infrastructure assets and every year the City acquires new infrastructure through new development or replaces existing infrastructure with an approximate replacement value of \$150 million.

This infrastructure is needed to allow the City to deliver residents, businesses and visitors with services that are essential to quality of life and economic growth. Because of the importance of these services to quality of life and economic growth – from roads, sidewalks, pathways and public transit to safe drinking water to recreation and culture to social services and long-term housing to libraries, emergency services, public health

and nearly every other government service people use every day – the assets required to deliver them needs to remain reliable, safe and in a state of good repair.

Like many cities in Canada, the City of Ottawa (and the 12 former municipalities it now includes) experienced tremendous growth over a relatively short period of time between the 1950's and 1980's. The infrastructure built over that period of time requires thoughtful, targeted investments in renewal, rehabilitation and replacement in a way that balances service levels, risk and affordability. Municipal infrastructure assets are vital to health of the national economy. The struggle for most large cities, including Ottawa, is the lack of long term and predictable funding available to complement municipal resources. There is also a need for clarity about level of service expectations as they relate to asset needs, and an understanding of non-financial strategies that need to be used to balance with available funding.

Much of the City of Ottawa's major infrastructure was designed and built to last many decades – roads, bridges, pipes, culverts, buildings and the like are designed to last for 50, 80 and 100 or more years. Other assets, such as ambulances, buses, technology, have a shorter lifecycle.

Assumption and Analysis

The City of Ottawa is considered a municipal leader in asset management practices and long-range financial planning. Successive City Councils have taken a number of actions to proactively ensure the long-term integrity of the City's infrastructure. Beginning in 2002, with the first Long-Range Financial Plan, followed by the Integrated Asset Management Strategy in 2003, the Capital Standards Review for Public Works Infrastructure in 2004, and the Comprehensive Asset Management Program (CAM) in 2012, Councils have taken the necessary steps to ensure they and the public have a deeper understanding of the City's infrastructure needs, so proper planning can inform Council's investments in maintenance, renewal and replacement as part of each long-range financial plan and every annual budget.

The City's Comprehensive Asset Management program (CAM), as adopted by City Council in October 2012, is designed to ensure that staff uses "the right intervention, on the right asset, at the right time" in a manner that considers affordability and risk.

CAM involves applying planning, finance, engineering, maintenance and operations lenses to support decision making related to the creation of new assets and the rehabilitation or disposal of existing ones. Decisions required to effectively manage assets over their entire life may result in policy or standard operating procedure changes to operational regimes. The outcome of the systematic approach results in decisions that maximize benefits, reduce risks, and reduce costs while continuing to provide safe and reliable levels of service to community users in a socially, culturally, environmental and economically conscious manner.

The October 2012 Comprehensive Asset Management (CAM) Program ([City of Ottawa Comprehensive Asset Management Program](#)) was presented jointly with the Long Range Financial Plan for tax funded programs in order to provide context between the state of the assets and the levels of investment required to continue to deliver services by maintaining those assets in a state of good repair. The 2012 report also presented Council with the CAM Policy, the CAM Strategy and the City's 2012 State of Assets Report (SOAR).

This 2017 report provides:

- An update on the accomplishments to date under the CAM program;
- The 2017 State of the Asset Report (SOAR);
- The Strategic Asset Management Plan;
- An update of the financial requirements to meet state of good repair targets identified in 2012; and
- Recommendations for the next steps for key CAM initiatives that will inform long-range financial planning and identify non-financial strategies for sustaining assets in good state of repair.

Overall, the update identifies that City-owned assets are safe. It demonstrates that 83% of the City's assets are in Fair to Very Good condition, remaining stable since 2012. Since adoption of the CAM program in 2012, the City has successfully launched or completed major transformational projects such as Lansdowne Park redevelopment, record level investment in transit through Confederation Line and Stage 2 Light Rail

Transit, redevelopment of Arts Court and record level investment levels in housing renewal.

At the same time, the City has kept pace with its planned State of Good Repair financial strategy. Since the adoption of the last CAM report, contributions to the tax funded renewal envelopes have increased by \$51 million per year and the infrastructure gap identified in the 2012 report has been reduced by \$20 million per year. As well, the City's foundational asset management practices have been put in place in order to address the next set of challenges in the rehabilitation, renewal and replacement of the City's infrastructure.

The most significant and on-going challenge is to manage the upcoming wave of renewal needs in a way that reduces the sudden rise in works required to keep assets safe and functioning, which in turn reduces the risk of service impacts or interruptions. The City has and will continue to put in place risk-based financial and non-financial strategies to address areas of concern, and this report identifies those strategies being recommended.

With respect to the non-financial strategies, this report recommends a number of initiatives designed to be implemented from now until 2020. These include:

- Continuing to enhance CAM activities such as undertaking Capital Project Value Assessments to link investments to level of service outcomes, developing Service based Asset Management Plans, integrating lifecycle costing into asset based decision making, improving data-gathering and system supports;
- Documenting 'as is' levels of service for core service areas and quantifies how well the assets are performing when compared with documented and communicated level of service expectations;
- Assessing the outcomes of Phase 2 of federal funding programs and the provincial asset management regulation; and
- Undertaking non-financial strategy assessments that will document options for continuous improvement (e.g. service rationalization, asset rationalization, renewal strategy effectiveness analysis, adjusting renewal approaches, ensuring consistent application of policies affecting effectiveness of renewal programs).

Financial Implications

With respect to financial strategies, this report is being presented jointly with the Long-Range Financial Plan V-Tax Supported Capital (LRFP V). The information in this report indicates that the overall annual funding shortfall has been reduced, although not as quickly as planned in the 2012 LRFP. The recommended levels of increased funding needed to eliminate the infrastructure funding gap affordably are indicated in LRFP V Tax-Supported Capital report, and in the LRFP V – Rate Supported Capital report anticipated later in 2017. The financial recommendations are subject to annual budget approval.

Public Consultation/Input

The development of SOAR included working sessions and consultation with multiple business lines across each City department. The CAM steering committee has representation from all departments and has overseen the development of all CAM initiatives and the LRFP update.

As part of annual capital program review meetings with Ward Councillor's, a program background and supportive information was provided.

Summary

The recommendations of this report will ensure Ottawa remains a leading organization in asset management practice and, most importantly, continues to promote a comprehensive and sustainable approach to protecting the infrastructure that delivers City services.

RÉSUMÉ

La Ville d'Ottawa entretient ses infrastructures actuelles, dont la valeur atteint près de 42 milliards de dollars (en dollars de 2017), et, chaque année, elle en acquiert de nouvelles lors de nouveaux aménagements et en remplace à raison d'environ 150 millions de dollars en coûts de remplacement.

La Ville a besoin de ces infrastructures pour offrir aux résidents, aux entreprises et aux visiteurs des services essentiels à la qualité de vie et à la croissance économique. Vu l'importance de ces services – pensons aux routes, trottoirs, sentiers et transports en commun, à la salubrité de l'eau potable, aux loisirs et à la culture, aux services sociaux,

aux logements à long terme, aux bibliothèques, aux services d'urgence, à la santé publique et à essentiellement tout autre service public utilisé au quotidien –, la fiabilité, la sécurité et le bon état des actifs sont fondamentaux.

À l'instar de nombreuses villes canadiennes, Ottawa (et les 12 anciennes municipalités qui la composent) a connu une croissance fulgurante en relativement peu de temps entre les années 1950 et les années 1980. Les infrastructures construites durant cette période doivent faire l'objet d'investissements ciblés et réfléchis aux fins de renouvellement, de remise en état et de remplacement tenant compte à la fois du niveau de service, des risques et de l'abordabilité. Les infrastructures municipales sont essentielles à la santé économique du pays. Or, la bête noire de la plupart des grandes villes, dont Ottawa, est le manque de financement prévisible à long terme pour compléter les ressources municipales. Par ailleurs, il faut clarifier les attentes à l'égard du niveau de service, puisqu'elles reflètent les besoins en matière d'actifs, et mieux comprendre les stratégies autres que d'ordre financier qui permettraient de composer avec les fonds disponibles.

Beaucoup des principales infrastructures d'Ottawa ont été conçues et construites pour durer des décennies. Les routes, les ponts, les conduites, les ponceaux, les immeubles et les autres infrastructures du genre peuvent durer 50, 80 ou 100 ans, voire plus. La durée de vie des actifs comme les ambulances, les autobus et la technologie est quant à elle plus courte.

Hypothèses et analyse

La Ville d'Ottawa est considérée comme un chef de file municipal en matière de pratiques de gestion des biens et de planification financière à long terme. Au fil des années, les conseils municipaux ont pris différentes mesures pour garantir de façon proactive l'intégrité à long terme des infrastructures municipales. Avec le premier Plan financier à long terme, en 2002, la stratégie de gestion intégrée des biens, en 2003, l'examen des normes de capital en ce qui a trait à l'infrastructure des travaux publics, en 2004, et le Programme de gestion intégrale des actifs (GIA), en 2012, les différentes administrations se sont assurées qu'elles, de même que le public, avaient une meilleure compréhension des besoins en infrastructure, afin de prévoir dans chacun des plans financiers à long terme et des budgets annuels les investissements appropriés dans l'entretien, la remise en état et le remplacement.

Le Programme de gestion intégrale des actifs, adopté par le Conseil municipal en octobre 2012, vise à amener les employés à appliquer le principe de la « bonne intervention, au bon endroit et au bon moment », en tenant compte de l'abordabilité et des risques.

La GIA signifie que les décisions relatives aux nouveaux actifs et à la remise en état ou à l'élimination des actifs actuels tiennent compte de divers aspects : planification, cadre financier, ingénierie, entretien et opérations. Afin de prendre les décisions nécessaires pour gérer efficacement les actifs leur vie durant, il pourrait être nécessaire d'apporter des modifications aux politiques ou aux procédures opérationnelles normalisées. Cette approche systématique donne lieu à des décisions qui maximisent les avantages et réduisent les risques ainsi que les coûts tout en fournissant aux usagers des niveaux de service sécuritaires et fiables, le tout dans une optique de viabilité sociale, culturelle, environnementale et économique.

Le [Programme de gestion intégrale des actifs](#) d'octobre 2012 a été présenté en même temps que le Plan financier à long terme pour les programmes financés par les taxes afin d'établir le lien entre l'état des actifs et le niveau d'investissement requis pour continuer à fournir les services et à garder les actifs en bon état. Le rapport de 2012 présentait aussi au Conseil la politique et la stratégie relatives à la GIA, ainsi que le Bilan des actifs de 2012 de la Ville.

Voici ce que comprend le présent rapport de 2017 :

- Mise à jour sur les réalisations à ce jour dans le cadre du programme de GIA;
- Bilan des actifs de 2017;
- Plan stratégique de gestion des actifs provisoire;
- Mise à jour sur les exigences financières pour atteindre les cibles relatives aux actifs en bon état fixées en 2012;
- Recommandations sur les prochaines étapes relatives aux principales initiatives de GIA qui orienteront la planification financière à long terme et permettront de cibler les stratégies autres que financières pour entretenir les actifs en bon état.

De façon générale, les mises à jour indiquent que les infrastructures de la Ville sont sécuritaires : 83 % seraient en condition acceptable à très bonne, une constante depuis 2012. Depuis l'adoption du programme de GIA en 2012, la Ville a réussi à lancer ou à terminer d'importants projets de transformation, comme le réaménagement du parc Lansdowne, l'amélioration du transport en commun, qui a attiré des investissements record, notamment avec la Ligne de la Confédération et l'Étape 2 du projet de train léger, le réaménagement de la Cour des arts et la réfection des logements, qui a obtenu un financement sans précédent.

Par ailleurs, la Ville a respecté sa stratégie financière visant le maintien en bon état des actifs. Depuis l'adoption du dernier rapport de GIA, les enveloppes destinées au renouvellement financé par les taxes ont augmenté de 51 millions de dollars par année, et l'écart relatif aux infrastructures relevé dans le rapport de 2012 a diminué de 20 millions de dollars par année. De plus, des pratiques de base en matière de gestion des biens ont été mises en place à la Ville en préparation pour les défis à venir en lien avec la remise en état, le renouvellement et le remplacement des infrastructures municipales.

Le défi le plus important et le plus tenace à prévoir est la gestion de l'explosion attendue des besoins de renouvellement : il faudra limiter la quantité de travaux requis pour garder les infrastructures sécuritaires et fonctionnelles, et, ainsi, réduire le risque de perturbation ou d'interruption des services. La Ville continue de mettre en place des stratégies (financières ou non) en fonction des risques pour aborder les points à améliorer, et le présent rapport fait état des stratégies recommandées.

En ce qui a trait aux stratégies autres que financières, le présent rapport recommande un certain nombre d'initiatives qui seront mises en œuvre d'ici 2020. En voici quelques-unes :

- Continuer d'améliorer les activités de GIA, par exemple évaluer la valeur des projets d'immobilisations pour faire le lien entre les investissements et les résultats relatifs au niveau de service, concevoir une GIA axée sur les services, intégrer les coûts liés au cycle de vie au processus décisionnel fondé sur les actifs et améliorer la collecte de données et le soutien au réseau de services;
- Consigner les niveaux de service « réels » dans les grands secteurs et évaluer le rendement des actifs par rapport aux attentes consignées et énoncées;

- Évaluer les résultats relatifs à la deuxième phase des programmes de financement fédéral et à la réglementation de l'Ontario en matière de gestion des biens;
- Entreprendre l'évaluation des stratégies autres que financières pour recenser les options d'amélioration continue (p. ex. rationalisation des services et des actifs, analyse de l'efficacité de la stratégie de renouvellement, ajustement des méthodes de renouvellement, application cohérente des politiques ayant une incidence sur l'efficacité des programmes de renouvellement).

Répercussions financières

En ce qui concerne les stratégies financières, le présent rapport est accompagné du Plan financier à long terme V (PFLT V) sur les immobilisations financées par les taxes. Le présent rapport indique que le manque à gagner dans le financement annuel a été réduit, quoique plus lentement que prévu dans le PFLT de 2012. Les recommandations relatives à la hausse du niveau de financement nécessaire pour éliminer l'écart dans le financement des infrastructures, tout en restant abordable, sont présentées dans le PFLT V sur les immobilisations financées par les taxes et le PFLT V sur les immobilisations soutenues par les tarifs, qui doivent paraître en septembre 2017. Les recommandations financières sont sujettes à l'approbation du budget annuel.

Consultations publiques et commentaires

Des séances de travail et des consultations avec des intervenants de différents secteurs d'activités des directions générales de la Ville ont été menées dans le cadre de l'élaboration du Bilan des actifs. Le comité directeur de la GIA, composé de représentants de toutes les directions générales, a vu à l'élaboration de toutes les initiatives liées à la GIA ainsi que du PFLT à jour.

Un document sur le contexte du programme et des documents à l'appui ont été produits dans la foulée des réunions d'examen annuel des programmes d'immobilisation avec les conseillers de quartiers.

Sommaire

Le personnel croit que les recommandations formulées dans le présent rapport permettront à Ottawa de rester un chef de file en matière de pratiques de gestion des

biens et, plus important encore, de continuer à mettre de l'avant une approche globale et durable pour protéger les infrastructures nécessaires à la prestation des services municipaux.

BACKGROUND

The City of Ottawa delivers residents, businesses and visitors with services that are essential to quality of life and economic growth. Key to the delivery of all these services – from roads, sidewalks, pathways and public transit to safe drinking water to recreation and culture to social services and long-term housing to libraries, emergency services, public health and nearly every other government services people use every day – is making sure the infrastructure needed to deliver these services remains reliable, safe and in a state of good repair.

Much of the City of Ottawa's major infrastructure was designed and built to last many decades – roads, bridges, pipes, culverts, buildings and the like are designed to last for 50, 80 and 100 or more years. Other assets, such as ambulances, buses, technology, have a shorter lifecycle.

The City now maintains nearly \$42 billion (in 2017 dollars) in existing infrastructure assets, and every year the City acquires new infrastructure through new development or replaces existing infrastructure with an approximate replacement value of \$150 million.

Like many cities in Canada, the City of Ottawa (and the 12 former municipalities it now includes) experienced tremendous growth over a relatively short period of time between the 1950's and 1980's. The infrastructure built over that period of time requires thoughtful, targeted investments in renewal, rehabilitation and replacement in a way that balances service levels, risk and affordability. Municipal infrastructure assets are vital to health of the national economy. The struggle for most large cities, including Ottawa, is the lack of long term and predictable funding available to complement their own resources. There is also a need for clarity about level of service expectations as they relate to asset needs, and an understanding of non-financial strategies that need to be used to balance with available funding.

The City of Ottawa is considered a municipal leader in asset management practices and long-range financial planning. Successive City Councils have taken a number of actions to proactively ensure the long-term integrity of the City's infrastructure. Beginning in

2002, with the first Long-Range Financial Plan, followed by the Integrated Asset Management Strategy in 2003, the Capital Standards Review for Public Works Infrastructure in 2004, and the Comprehensive Asset Management program (CAM) in 2012, Councils have taken the necessary steps to ensure they and the public have a deeper understanding of the City's infrastructure needs, so that proper planning can inform Council's investments in maintenance, renewal and replacement as part of each long-range financial plan and every annual budget.

The City's Comprehensive Asset Management program (CAM), as adopted by City Council in October 2012, is designed to ensure that staff uses "the right intervention, on the right asset, at the right time" in a manner that considers affordability and risk.

CAM involves applying planning, finance, engineering, maintenance and operations lenses to support decision making related to the creation of new assets and the rehabilitation or disposal of existing ones. Decisions required to effectively manage assets over their entire life may result in policy or standard operating procedure changes to operational regimes. The outcome of the systematic approach translates to decisions that maximize benefits, reduce risks, and reduce costs while continuing to provide safe and reliable levels of service to community users in a socially, culturally, environmental and economically conscious manner.

The October 2012 Comprehensive Asset Management (CAM) Program ([City of Ottawa Comprehensive Asset Management Program](#)) was presented jointly with the Long Range Financial Plan for tax funded programs in order to provide context between the state of the assets and the levels of investment required to continue to deliver services by maintaining those assets in a state of good repair. The 2012 report also presented Council with the CAM Policy, the CAM Strategy and the City's 2012 State of Assets Report (SOAR). Council endorsed the program and approved the City's CAM Policy

This 2017 report provides:

- An update on the accomplishments to date under the CAM program;
- The 2017 State of the Asset Report (SOAR);
- The Strategic Asset Management Plan (SAMP);

- An update of the financial requirements to meet state of good repair targets identified in 2012; and
- Recommendations for the next steps for key CAM initiatives that will inform both the long-range financial plan and provide non-financial strategies for sustaining assets in good state of repair.

As was the case in 2012, this report is being presented jointly with the Long-Range Financial Plan V-Tax Supported Capital (LRFP V). The information in this report supports the recommendations in the LRFP V Tax-Supported Capital report, and in the LRFP V – Rate Supported Capital report anticipated later in 2017. The financial recommendations are subject to annual budget approval.

DISCUSSION

1 – Update on the Comprehensive Asset Management program (CAM)

Asset management, as noted above, is a challenge for municipalities across Canada and internationally. Addressing those challenges requires both financial investment and a series of non-financial strategies and practices.

Ottawa's CAM program involves a conscious and committed effort to continuously improve and refine practices. The adoption of this program has placed the City among other leading governments on the national scale.

Since 2012, the City has accomplished many of the goals established in the Comprehensive Asset Management Program, including the following:

- Completed risk assessment for all key infrastructure assets;
- Reviewed infrastructure standards, notably those related to stormwater and road cross-sections;
- Updated construction material specifications to better align with Ontario Provincial Standards, particularly with respect to asphalt testing requirements;
- Improved cost estimates and applied affordability lens to the Infrastructure Master Plan (IMP) and the Transportation Master Plan (TMP);

- Developed a draft Capital Project Value Assessment tool for project prioritization;
- Successfully applied CAM work tools and working group to select and receive Phase 1 federal program funding for:
 - Social Housing
 - Public Transit Infrastructure Fund (PTIF)
 - Clean Water Waste Water Fund (CWWF)
 - Canada Infrastructure Program 150 (CIP 150) Rounds 1 and 2;
- Updated the State of Asset Report (SOAR); and
- Developed the first consolidated Strategic Asset Management Plan (SAMP).

Since adoption of the CAM program in 2012, the City has successfully launched or completed major transformational projects such as Lansdowne Park redevelopment, record level investment in transit through Confederation Line and Stage 2 Light Rail Transit, redevelopment of Arts Court and record level investment levels in housing renewal. At the same time, the City has kept pace with its planned State of Good Repair financial strategy. Since 2012, contributions to the tax-funded renewal envelopes have increased by \$51 million per year and the infrastructure funding gap has been reduced by \$20 million per year.

Foundational guiding documents have also been created, such as an Asset Management Plan Framework, a Level of Service Documentation Framework and Capital Project Value Assessment process.

In 2013, Ottawa received the 2013 Terezo award from the Canadian Network of Asset Managers. This award recognizes excellence in developing and implementing asset management approaches.

Staff have participated on a provincial expert panels on the development of an Asset Management Regulation.

The asset management landscape in Canada and Ontario has also evolved significantly since 2012. There are emerging regulatory requirements for municipalities pertaining to asset management:

- In January 2014, the International Standards Organization instituted an Asset Management standard; ISO 55000. ISO 55000 provides an established standard internationally that describes asset management principles, terminology and concepts.
- In June 2015, the province of Ontario enacted the Infrastructure for Jobs and Prosperity Act (Bill 6) to "... establish mechanisms to encourage principled, evidence-based and strategic long-term infrastructure planning..." As stipulated in that Bill, Ontario municipalities now have to prepare Asset Management Plans on a periodic basis and report regularly on their asset management planning progress. The proposed municipal asset management planning regulation was released for comment in late May 2017.
- In December 2015, the province of Ontario amended the Development Charges Act, 1997, and the Planning Act to "... include consideration of the use of multiple development charge by-laws and preparation of an asset management plan...", where the AMP will address "all assets whose capital costs are proposed to be funded under the development charge by-law".
- As per the Administrative Agreement on the Federal Gas Tax Fund, municipalities are required to "develop and implement an Asset Management Plan, prior to December 31, 2016".

The work completed by the City of Ottawa over the last five years has positioned the City well to respond to the new regulations and emerging practice requirements. The emerging regulatory framework and best practices also emphasizes the need for staff to continue to formalize the governance structures and implementation of the systems and processes necessary to achieve the targeted goal of a high level of asset management competence across the City.

To define the next steps for the City's asset management program, staff examined the current state of City practices against asset management industry best practices in 2016.

Document 3 provides a summary of the state of practice assessment and a short outline of some of the following ongoing initiatives:

- I. Leadership in Asset Management Program
- II. Risk-based decision support
- III. Capital Project Valuation Assessment
- IV. Level of Service
- V. Life Cycle Costing
- VI. Asset Knowledge and Continuous Data Improvement
- VII. Strategic Asset Management Plan (SAMP)

The foundational work has been largely completed and the frameworks are now in place allowing the City to continue to move forward on its asset management program in a way that safeguards the public's investment in its infrastructure.

2 – 2017 State of Assets Report (SOAR)

One of the basic requirements of the Comprehensive Asset Management program is to develop an understanding of what the City has in terms of core assets and what condition they are in. The State of Assets Report (SOAR) is a document prepared once per term of Council to report on the physical condition of the many assets that support the various services provided by the City.

The information conveyed in the document represents the information as it exists at a point in time – it is a snapshot. For the 2017 State of Asset Report, attached as Document 1, the information is reflective of the assets as they were reported in January 2016. The SOAR report looks at the overall asset portfolio over time and notes trends. Staff inspect and assess condition and performance of assets on an ongoing basis for emerging issues, rehabilitation and repair, and effects of more global influences such as unusual weather patterns, environmental sustainability or other factors that might influence overall program requirements for the long term.

The 2017 SOAR was prepared using the same approach and methodology used in the 2012 SOAR report. The majority of the assets' conditions are obtained directly from

inspection reports. For those assets where inspection reports are not available, conditions are reported according to industry recognised practices, taking into consideration the material or the construction techniques used during that period time.

In keeping with the continuous improvement strategy of the CAM program, new for 2017 is the addition of condition ratings for assets supporting solid waste services, social housing, information technology services and buildings for police services. Fire, paramedic, bylaw – collectively forming emergency and protective services - have also been itemized separately.

The SOAR confirms that City-owned assets are safe. Overall, 83% of the City's assets are in Fair to Very Good condition.

Figure 1 below provides a summary of the state of the City's assets and additional details are contained in Document 1.

Service	2017 Status					2012 Status			
	Asset Replacement Value	Overall Average Asset Condition Rating	% of Assets in Poor to Very Poor Condition	% of Assets in Fair Condition	% of Assets in Good to Very Good Condition	Overall Average Asset Condition Rating	% of Assets in Poor to Very Poor Condition	% of Assets in Fair Condition	% of Assets in Good to Very Good Condition
Water	\$ 7,465 M	Good-Fair	4 %	17 %	79 %	Good	13 %	28 %	59 %
Wastewater	\$ 7,193 M	Fair-Good	11 %	37 %	52 %	Good-Fair	13 %	28 %	60 %
Stormwater	\$ 6,296 M	Good-Fair	7 %	25 %	68 %	Good-Fair	6 %	21 %	74 %
Solid Waste	\$ 59 M	Good-VG	6 %	11 %	82 %				
Transit	\$ 1,890 M	Fair-Good	6 %	65 %	29 %	Good-Fair	5 %	22 %	73 %
Transportation	\$ 12,612 M	Fair	29 %	46 %	25 %	Fair	27 %	52 %	21 %
Parks, Rec and Culture	\$ 2,231 M	Fair	51 %	31 %	18 %	Fair	17 %	43 %	40 %
Libraries	\$ 126 M	Good	46 %	16 %	38 %	Good	14 %	48 %	38 %
Social Services	\$ 3,032 M	Good-Fair	5 %	27 %	69 %	Good-Fair	0 %	57 %	43 %
Fire	\$ 291 M	Fair	49 %	30 %	21 %	Good-Fair	9 %	46 %	45 %
Paramedic	\$ 19 M	Good	10 %	18 %	71 %				
Bylaw	\$ 13 M	Fair	72 %	13 %	15 %				
Police	\$ 148 M	Fair	58 %	23 %	20 %				
Corporate Services	\$ 251 M	Fair-Poor	42 %	49 %	9 %	Fair	1 %	94 %	5 %
Information Technology	\$ 59 M	Fair	35 %	15 %	50 %				
Overall Summary	\$ 41,686 M	Fair-Good	17 % (\$7.0B)	34 % (\$14.4B)	49 % (\$20.3B)	Fair-Good	16 % (\$5.3B)	37 % (\$12.0B)	47 % (\$15.5B)
Very Good - Fit for the future. Well maintained, good condition, new or recently rehabilitated.									
Good - Adequate for now. Acceptable, generally approaching mid stage of expected service life									
Fair - Requires attention. Signs of deterioration, some elements exhibit deficiencies.									
Poor - Increasing potential of affecting service. Approaching end of service life, condition below standard, large portion of system exhibits significant deterioration.									
Very Poor - Unfit for sustained service. Near or beyond expected service life, widespread signs of advanced deterioration, some assets may be unusable.									

Overall, the condition of the City assets has remained relatively stable - in Fair to Good condition - since 2012.

The City's assets will deteriorate as time progresses, as much of the City's long lived infrastructure assets were constructed in between the 1950's and 1980's. This is not unique to Ottawa, rather an international concern that governments everywhere need to address through a conscious, committed and continuous effort to improving the application of asset management practices across all business lines. For Ottawa, the SOAR results align to the national situation as reported in the Canadian Infrastructure Report Card (CIRC 2016) released in 2016.

As was the case in 2012, there remain some asset types that are in poor and very poor condition. Staff are aware of these assets (culverts, collector roads, information technology, etc). They are being tracked, assessed and managed on a risk-to-service-basis. Some areas such as the culvert program, social housing, and para transpo vehicles have also had major initiatives launched, and these are underway.

As stated explicitly in the 2012 report, proper asset management approach does not simply mean fixing the "worst first" and focusing investments on assets that are in poor to very poor condition. Rather, fixing the "worst first" or waiting for assets to reach a state where reconstruction is needed represents the most expensive approach to managing long-lived assets. The City's approach manages the overall portfolio of assets through their lifecycle by applying "the right intervention, at the right time, on the right asset" in a manner that takes affordability and risk into account in the decision making process and determining the best value for the City's investments.

Indicative of the original growth of the long lived asset base, there are large areas of assets in fair condition. The most significant and on-going challenge is to manage the upcoming wave of renewal needs in a way that reduces the sudden rise in works required to keep assets safe and functioning, which in turn reduces the risk of service impacts or interruptions. The City has and will continue to put in place risk-based strategies to address areas of concern.

Figures 2a, 2b and 2c are intended to provide context to the condition ratings for tax supported assets, such as roads, bridges, buildings and parks.

Figure 2a – Representation of Condition Ratings for Roads
















	Arterial Roads	Collector Roads	Local Roads
Very Good Fit for the Future			
Good Adequate for now			
Fair Requires Attention			
Poor At Risk			
Very Poor Unfit for Sustained Service			

Figure 2b – Representation of Condition Ratings for Bridges



Figure 2c – Representation of Condition Ratings for Buildings and Parks



3 – Strategic Asset Management Plan (SAMP)

The Strategic Asset Management Plan (SAMP) plays an important part of the Council-adopted CAM program by identifying the reasons why new assets, or modifications to existing assets, are required. It also provides further details on why modifications are required, how the City intends on continuing to deliver the services by relying on safe and reliable assets, and how the City intends on funding the required investments in a manner so as to remain financially sustainable. In essence, the SAMP builds the critical

key connection between tactical actions at the asset level and the broader service to resident based organizational goals and objectives.

Emerging Ontario regulations will refine expectations of asset management plans (AMP). However, in the Building Together – Guide for Municipal Asset Management Plans that was released by the Ministry of Infrastructure of Ontario in 2011, an AMP is defined as:

“[...] a strategic document that states how a group of assets is to be managed over a period of time. The plan describes the characteristics and condition of infrastructure assets, the levels of service expected from them, planned actions to ensure the assets are providing the expected levels of service, and financing strategies to implement the planned actions.”

The City’s AMP framework goes beyond these guidelines. In the interim, the Strategic Asset Management Plan accompanying this report meets the current guidelines requirements and is sufficient to meet other Federal requirements at this time.

The 2016 SAMP is based on existing strategic directions, policies and a compilation of existing documentation. The SAMP will change and evolve. It is designed to be a living document that will be updated whenever key Council objectives and/or legislation changes, or when the approach through which those objectives are converted to asset management objectives changes. As it is further described in the SAMP, the City intends on developing individual asset management plans (AMPs) for each of the asset intensive services provided by the City. The service specific AMPs will then inform the overall corporate SAMP document.

The City’s Long Range Financial plans are also being updated. Accordingly, once they have all been approved, later in 2017, the financial strategy section of SAMP can be updated to reflect the new financial strategies.

A copy of the 2017 SAMP is attached as Document 2.

4 – LRFP V Financial requirements for Tax Funded Assets

As stated earlier, the city has advanced record level capital undertakings (Lansdowne, Arts Court, Confederation Line, Ottawa on the Move etc. ...) in the last five years. The

federal and provincial governments have been making some much-needed new investments in municipal infrastructure and services. In addition to the federal gas tax funds, both the federal and provincial governments have announced new one-time program funding for transit, for water and wastewater and for housing.

In 2012 the City endorsed the target for a level of investment that would maintain assets in a state of good repair. The fundamental principles outlined in the 2012 report “COMPREHENSIVE ASSET MANAGEMENT PROGRAM” - ACS2012-PAI-INF-0007 (2012 Report - Comprehensive Asset Management Program) remain valid and formed the basis for the 2017 update to financial needs for the renewal of the tax supported assets. The targeted level of service outcomes from that report are included in Documents 4 and 5.

Since then, contributions to the tax funded renewal envelopes have increased by \$51 million per year and the *gap* has been reduced by \$20 million per year. In essence, the overall annual funding shortfall has been reduced but not as quickly as planned in the last LRFP. This is in part due to yet to be confirmed permanent funding for renewal programs from other levels of government, the City is only partially through the planned multi-year increase in funding, and increased needs and pressures associated with new policy, legislations and regulations. In 2012 the documented requirements were identified as \$179 million per year; (\$192 million per year in 2017\$) and an average annual gap of \$90 million per year.

A review of the funding levels necessary to support tax funded assets in state of good repair was completed over the course of 2016-2017. The current requirement is \$224 million per year (in 2017\$) and an average annual gap of \$70 million per year. This level of funding is to maintain state of good repair outcomes as previously identified in 2012 and reflected in Document 4 and 5. As in 2012, a phased or ramped approach to achieving the targeted level continues to be a reasonable and practical approach.

It should be noted that the \$224 million per year requirement includes \$29 million of rate funding for integrated road sewer, water projects. The net tax funded LRFP requirement is \$195 million per year. The \$29 million in rate funding will be identified in Long Range Financial Plan for rate supported programs.

The reality is that funding will always have limits and there is the underlying fact of the wave of infrastructure renewal needs that lie ahead. Our assets are growing and aging, and are competing for funding for upkeep and renewal. Coupled with higher demands as a result of new level of service expectations, new policy directions and their implications to renewal implementation opportunities, regulations and legislation, the way forward cannot be a financial solution on its own.

In addition to the financial considerations, the federal and provincial governments are increasing requirements for asset management planning, including its linkage to securing funding as well as emerging provincial asset management regulations. The City is well positioned to meet these requirements but additional work is needed to manage the way forward.

While predictable and long term federal and provincial partner funding is one component, it is incumbent upon the City, as stewards of municipal assets, to clearly document level of service expectations as well as their implications to our assets and to seek out means other than funding alone to manage assets in a sustainable way. There are key initiatives to undertake in order to manage forward and to develop a balanced set of both financial and non financial strategies to bring sustainable balance to managing our assets in way that support service expectations.

Staff are recommending Council approve the undertaking of the following initiatives by 2020 in order to bring forward an updated statement of requirements, as well as financial and non financial approaches for Council's consideration.

These initiatives include:

- Continuing to enhance the CAM program governance and implementations (Capital Project Value Assessments to link investments to Level of Service outcomes, Service based AMP's, integrating lifecycle costing into asset based decision making, Data and system improvements, etc. ...)
- Document 'as is' Levels of Service for core Service areas and quantifies asset needs against the documented and communicated level of service expectations.
- Assess outcome of Phase 2 of Federal funding programs and the Provincial asset management regulation.

- Undertake non-financial strategy assessments and document benefits and recommendations for consideration (ex. service rationalization, asset rationalization, renewal strategy effectiveness analysis, adjusting renewal approaches, ensuring consistent application of policies affecting effectiveness of renewal programs).
- Update Strategic Asset Management Plan based on results of these undertakings.

Summary Discussion

The CAM initiatives itemised in the report show progress in a developing discipline where standards now exist and expectations are increasing. Further refinement in all of these initiatives will strengthen the City's ability to link investment decisions to the impact those decisions have on residents, businesses and visitors. The Strategic Asset Management Plan and supporting service based asset management plans are reporting mechanisms to combine the various elements that are developed under the City's CAM program. The adoption of the CAM Policy by Council and the endorsement of the CAM Strategy by Senior Management five years ago, along with the efforts from staff across the organisation to put into practice recognised asset management practice has positioned the City well to address the new and emerging requirements.

A funding centric look at the issue of sustainable asset management is not in keeping with good asset management practice. Documented and understood levels of service expectations will define asset needs and requirements to support those expectations. This understanding is critical to a focussed and sustainable way forward that encompasses a holistic consideration of policy, long term capital and operating funding requirements, renewal and operating regimes and non financial approaches to managing assets to meet expectations.

The recommendations of this report will ensure Ottawa remains a leading organization in asset management practice and, more importantly, develops comprehensive and sustainable approaches to the delivery of services.

RURAL IMPLICATIONS

The City's comprehensive asset management program and practices apply equally to all areas of the City regardless of their urban, suburban or rural environment. The recommendations of this report supports City assets that provide service to all areas.

CONSULTATION

The development of SOAR included working sessions and consultation with multiple business lines across each City department. The CAM steering committee has representation from all departments and has overseen the development of all CAM initiatives and the LRFP updated.

As part of annual capital program review meetings with Ward Councillor's, a program background and supportive information was provided.

COMMENTS BY THE WARD COUNCILLOR(S)

This is a city-wide report – not applicable.

LEGAL IMPLICATIONS

There are no legal impediments to approving the recommendations in this report.

RISK MANAGEMENT IMPLICATIONS

Risk management implications are contained in the report and consistent with those articulated in the 2012 report "COMPREHENSIVE ASSET MANAGEMENT PROGRAM" - ACS2012-PAI-INF-0007 ([2012 Report - Comprehensive Asset Management Program](#)). As identified in Document 3, since 2012 there has been significant effort in implementing a robust and repeatable way of quantifying the risk to a service based on the properties and location of the supporting assets. The process identifies the assets most at risk of impacting the community or the environment, to better inform staff of assets that require more immediate attention (whether through inspection, maintenance, renewal or simply collection and validation of required asset information). An example of a further application of this approach is used as part of the City's risk-based policy for consideration of applications for development above in-ground City-owned infrastructure.

ASSET MANAGEMENT IMPLICATIONS

This report provides an update on the City's Comprehensive Asset Management (CAM) Program ([City of Ottawa Comprehensive Asset Management Program](#)). The program provides for a customer-focused, forward looking, and systematic approach to managing city assets that support service delivery. The implementation of the CAM program results in timely decisions that minimize lifecycle costs and ensure the long-term affordability of assets. The recommendations of this report will ensure key initiatives supporting these objectives continue to be undertaken and brought to Council for consideration as required.

FINANCIAL IMPLICATIONS

The financial implication associated with this report are documented as part of the LRFP V – Tax supported Capital report (ACS2017-CSD-FIN0017). Council has identified the completion of the Long Range Financial Plan (LRFP) for tax supported services as a priority for each term of Council. The LRFP report identifies the funding strategies that can be put in place to provide for the renewal of the City's asset base to keep them in a state of good repair.

ACCESSIBILITY IMPACTS

Funding associated with renewal of tax supported assets includes provisions for accessibility barrier removal as part of renewal works.

ENVIRONMENTAL IMPLICATIONS

Funding associated with renewal of tax supported assets includes provisions for environmental requirements as part of renewal works (species at risk, designated substance removal, climate impacts, coordination of opportunistic implementation of pedestrian, cycling, low impact stormwater management retrofits) as part of renewal work budgets.

TERM OF COUNCIL PRIORITIES

The CAM program integrates with the Corporate Planning Framework, the long range financial planning and annual budget processes as well as master planning initiatives to complement the City's strategic objectives. CAM has been identified as part the City's Strategic Plan (SI 58).

SUPPORTING DOCUMENTATION

Document 1 2017 SOAR (*Held on file with the City Clerk*)

Document 2 2017 SAMP (*Held on file with the City Clerk*)

Document 3 State of Practice Assessment and CAM initiatives (*Held on file with the City Clerk*)

Document 4 2012 State of Repair Based on Funding Level Options (*Held on file with the City Clerk*)

Document 5 2012 Targeted Service Outcomes (*Held on file with the City Clerk*)

DISPOSITION

Infrastructure Services will continue to progress with CAM initiatives itemised in this report. Further refinement will continue in all of these initiatives, linking investment decisions to the service impact on residents, businesses and visitors. The adoption of the CAM Policy by Council and the endorsement of the CAM Strategy has put into place recognised asset management practices and has positioned the City well to address new and emerging requirements. The recommendations of this report will ensure Ottawa remains a leading organization in asset management practice and, more importantly, develops comprehensive and sustainable approaches to the delivery of services.